



***Evaluation of evidence on the effectiveness of interventions for caregiving practices and behaviours for optimal social and emotional development of infants: an overview of systematic reviews***

**Prepared by the Australian Research Centre for the Health of Women and Babies (ARCH), The University of Adelaide**

**Technical Report**

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## Objectives

The objective of this overview of systematic reviews was to assess the effectiveness of current interventions, programs or messages for caregiving practices and behaviours for the optimal social and emotional development of infants in their first year of life, and as children and adults.

### Research question

***What is the effectiveness of interventions for caregiving practices or behaviours for optimal social and emotional development of infants?***

- What interventions, programs or messages for practices and behaviours of parents/caregivers prior to birth (during pregnancy) and in the first year of an infant's life have been shown to lead to **improved** social and emotional development of the infant, the child and later on as the adolescent (up to 18 years of age)?
- What interventions, programs or messages for practices and behaviours of parents/caregivers prior to birth (during pregnancy) and in the first year of an infant's life have been shown to lead to **poorer** social and emotional development for the infant, the child and later on as the adolescent (up to 18 years of age)?

## Database search strategies

**Database:** The Cochrane Library's Cochrane Database of Systematic Reviews (CDSR)

**Search date:** 31/10/2014

**Number of citations identified:** 242

**Search strategy:**

#1	parent* or "maternal near caregiv*" or "paternal near caregiv*" or "infant near caregiv*" or mother or father:ti,ab,kw Publication Year from 1994 to 2014 (Word variations have been searched)	17263
#2	program* or train* or educat* or promot* or intervent* or skill* or support* or group* or practice* or behaviour* or service*:ti,ab,kw Publication Year from 1994 to 2014 (Word variations have been searched)	348593
#3	#1 near #2	5850
#4	MeSH descriptor: (Parent-Child Relations) explode all trees	1283
#5	MeSH descriptor: (Parenting) explode all trees	645
#6	MeSH descriptor: (Child Rearing) explode all trees	99
#7	#3 or #4 or #5 or #6	6425
		<b>Cochrane reviews: 242</b>

**Database:** The Centre for Reviews and Dissemination Database of Abstracts of Reviews of Effects (DARE)

**Search date:** 31/10/2014

**Number of citations identified:** 152

**Search strategy:**

#1	parent* or "maternal near caregiv*" or "paternal near caregiv*" or "infant near caregiv*" or mother or father:ti,ab,kw Publication Year from 1994 to 2014 (Word variations have been searched)	17263
#2	program* or train* or educat* or promot* or intervent* or skill* or support* or group* or practice* or behaviour* or service*:ti,ab,kw Publication Year from 1994 to 2014 (Word variations have been searched)	348593
#3	#1 near #2	5850
#4	MeSH descriptor: (Parent-Child Relations) explode all trees	1283
#5	MeSH descriptor: (Parenting) explode all trees	645
#6	MeSH descriptor: (Child Rearing) explode all trees	99
#7	#3 or #4 or #5 or #6	6425
		<b>Other reviews: 152</b>

**Database:** The Campbell Collaboration Library of Systematic Reviews

**Search date:** 7/11/2014

**Number of citations identified:** 153

**Search strategy:**

#1	parent* OR caregiv* OR mother OR	<b>153</b>
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father

**Database:** The Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) Database of Promoting Health Effectiveness Reviews (DoPHER)

**Search date:** 7/11/2014

**Number of citations identified:** 361

**Search strategy:**

#1	Freetext: "parent*" OR "maternal NEAR caregiv*" OR "paternal NEAR caregiv*" OR "infant NEAR caregiv*" OR "mother" OR "father"	358
#2	Freetext: "program*" OR "train*" or "educat*" OR "promot*" OR "skill*" OR "support*" OR "group*" OR "practice*" OR "behaviour*" OR "behaviour*" OR "service*"	3177
#3	1 AND 2	346
#4	Type(s) of intervention: parent training	22
#5	3 OR 4	361

**Database:** The Joanna Briggs Institute (JBI) Database of Systematic Reviews and Implementation Reports

**Search date:** 7/11/2014

**Number of citations identified:** 360

**Search strategy:**

#1	parent* OR caregiv* OR mother OR father	360
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**Database:** Medical Literature Analysis and Retrieval System Online (MEDLINE) (Ovid)

**Search date:** 27/11/2014

**Number of citations identified:** 2260 (2018 after duplicate removal)

**Search strategy:**

#1	Meta-Analysis as Topic/	14595
#2	meta analy\$.tw.	62848
#3	metaanaly\$.tw.	1309
#4	Meta-Analysis/	54585
#5	(systematic adj (review\$1 or overview\$1)).tw.	52202
#6	exp Review Literature as Topic/	8135
#7	or/1-6	122796
#8	cochrane.ab.	30180
#9	embase.ab.	28810
#10	(psychlit or psyclit).ab.	908
#11	(psychinfo or psycinfo).ab.	11847
#12	(cinahl or cinhal).ab.	10195
#13	science citation index.ab.	2043
#14	bids.ab.	365
#15	cancerlit.ab.	585
#16	or/8-15	51427
#17	reference list\$.ab.	9962
#18	bibliograph\$.ab.	11590
#19	hand-search\$.ab.	3897
#20	relevant journals.ab.	734
#21	manual search\$.ab.	2306
#22	or/17-21	25465
#23	selection criteria.ab.	20419
#24	data extraction.ab.	10216
#25	23 or 24	28951
#26	Review/	1964534
#27	25 and 26	20677

#28	Comment/	580319
#29	Letter/	855920
#30	Editorial/	357488
#31	animal/	5555268
#32	human/	14092046
#33	31 not (31 and 32)	4000367
#34	or/28-30,33	5273905
#35	7 or 16 or 22 or 27	153945
#36	35 not 34	144051
#37	(parent\$ or (maternal adj3 caregiv\$) or (paternal adj3 caregiv\$) or (infant adj3 caregiv\$) or mother or father).mp.	425305
#38	(program\$ or train\$ or educat\$ or promot\$ or intervent\$ or skill\$ or support\$ or group\$ or practice\$ or behaviour\$ or service\$).mp.	10875673
#39	(baby or babies or infant\$ or child\$ or toddler\$ or pre-school or preschool).mp.	2369683
#40	36 and 37 and 38 and 39	2846
#41	exp Parenting/ or exp Child Rearing/ or exp Parent-Child Relations/	58491
#42	41 and 36	848
#43	40 or 42	2985
#44	limit 43 to (english language and yr="1994 -Current" and humans)	2823
#45	limit 44 to "reviews (best balance of sensitivity and specificity)"	2260
<b>Citations after duplicate removal in EndNote</b>		<b>2018</b>

**Database:** Excerpta Medica Database (EMBASE) (Elsevier)

**Search date:** 27/11/2014

**Number of citations identified:** 772 (577 after duplicate removal)

**Search strategy:**

#1	parent\$ OR (maternal AND adj3 AND caregiv\$) OR (paternal AND adj3 AND caregiv\$) OR (infant AND adj3 caregiv\$) OR mother OR father	350888
#2	program\$ OR train\$ OR educat\$ OR promot\$ OR intervent\$ OR skill\$ OR support\$ OR group\$ OR practice\$ OR behaviour\$ or service\$	6488578
#3	baby OR babies OR infant\$ OR child\$ OR toddler\$ OR 'pre school' OR preschool	2242477
#4	'parenting'/exp	67102
#5	'child rearing'/exp	6393
#6	'parent child relations'/exp	67102
#7	'infant'/exp	883559
#8	#1 OR #4 OR #5 OR #6	359695
#9	#3 or #7	2496027
#10	#2 AND #8 AND #9	95741
#11	#2 AND #8 AND #9 AND ((cochrane review)/lim OR (systematic review)/lim OR (meta analysis)/lim) AND (humans)/lim AND (english)/lim AND (embase)/lim AND (1994- 2014)/py	772
<b>Citations after duplicate removal in EndNote</b>		<b>577</b>

**Database:** Cumulative Index to Nursing and Allied Health Literature (CINAHL) (EBSCO)



Search date: 10/12/2014

Number of citations identified: 823 (347 after duplicate removal)

Search strategy:

#1 "( (MH "Parent-Child Relations") OR (MH "Child Rearing") OR (MH "Parenting") OR (MH "Parenting Education") )

AND #2 ( (TI (systematic\* n3 review\*)) or (AB (systematic\* n3 review\*)) or (TI (systematic\* n3 bibliographic\*)) or (AB (systematic\* n3 bibliographic\*)) or (TI (systematic\* n3 literature)) or (AB (systematic\* n3 literature)) or (TI (comprehensive\* n3 literature)) or (AB (comprehensive\* n3 literature)) or (TI (comprehensive\* n3 bibliographic\*)) or (AB (comprehensive\* n3 bibliographic\*)) or (TI (integrative n3 review)) or (AB (integrative n3 review)) or (JN "Cochrane Database of Systematic Reviews") or (TI (information n2 synthesis)) or (TI (data n2 synthesis)) or (AB (information n2 synthesis)) or (AB (data n2 synthesis)) or (TI (data n2 extract\*)) or (AB (data n2 extract\*)) or (TI (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (AB (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (MH "Systematic Review") or (MH "Meta Analysis") or (TI (meta-analy\* or metaanaly\*)) or (AB (meta-analy\* or metaanaly\*)) )

OR #3 ( (TI (parent\* or (maternal n3 caregiv\*) or (paternal n3 caregiv\*) or (infant n3 caregiv\*) or mother or father)) or (AB (parent\* or (maternal n3 caregiv\*) or (paternal n3 caregiv\*) or (infant n3 caregiv\*) or mother or father)) )

AND #4 ( (TI (program\* or train\* or educat\* or promot\* or intervent\* or skill\* or support\* or group\* or practice\* or behaviour\* or service\*)) or (AB (program\* or train\* or educat\* or promot\* or intervent\* or skill\* or support\* or group\* or practice\* or behaviour\* or service\*)) )

AND #5 ( (TI (baby or babies or infant\* or child\* or toddler\* or pre-school or preschool)) or (AB (baby or babies or infant\* or child\* or toddler\* or pre-school or preschool)) )

AND #6 ( (TI (systematic\* n3 review\*)) or (AB (systematic\* n3 review\*)) or (TI (systematic\* n3 bibliographic\*)) or (AB (systematic\* n3 bibliographic\*)) or (TI (systematic\* n3 literature)) or (AB (systematic\* n3 literature)) or (TI (comprehensive\* n3 literature)) or (AB (comprehensive\* n3 literature)) or (TI (comprehensive\* n3 bibliographic\*)) or (AB (comprehensive\* n3 bibliographic\*)) or (TI (integrative n3 review)) or (AB (integrative n3 review)) or (JN "Cochrane Database of Systematic Reviews") or (TI (information n2 synthesis)) or (TI (data n2 synthesis)) or (AB (information n2 synthesis)) or (AB (data n2 synthesis)) or (TI (data n2 extract\*)) or (AB (data n2 extract\*)) or (TI (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (AB (medline or pubmed or psyclit or cinahl or (psycinfo not "psycinfo database") or "web of science" or scopus or embase)) or (MH "Systematic Review") or (MH "Meta Analysis") or (TI (meta-analy\* or metaanaly\*)) or (AB (meta-analy\* or metaanaly\*)) )

AND #7 Published Date: 19940101-20141131; Clinical Queries: Review - High Sensitivity, Review - High Specificity, Review - Best Balance; Human; Language: English

**Total citations** 823

**Citations after duplicate removal in EndNote** 347

Database: PsychINFO (Ovid)

Search date: 9/12/2014

Number of citations identified: 747 (504 after duplicate removal)

Search strategy:

#1 (((comprehensive\* or integrative or systematic\*) adj3 (bibliographic\* or review\* or literature)) or (meta-analy\* or metaanaly\* or "research synthesis" or ((information or data) adj3 synthesis) or (data adj2 extract\*))) .ti,ab,id. or ((review adj5 (rational or evidence)) .ti,ab,id. and 49731

	"Literature Review".md.) or (cinahl or (cochrane adj3 trial*) or embase or medline or psyclit or pubmed or scopus or "sociological abstracts" or "web of science").ab. or ("systematic review" or "meta analysis").md.	
#2	(parent* or (maternal adj3 caregiv*) or (paternal adj3 caregiv*) or (infant adj3 caregiv*) or mother or father).mp.	266172
#3	(program* or train* or educat* or promot* or intervent* or skill* or support* or group* or practice* or behaviour* or service*).mp.	2001817
#4	(baby or babies or infant* or child* or toddler* or pre-school or preschool).mp.	636730
#5	exp Parenting/ or exp Parent-Child Relations/	75873
#6	1 and 2 and 3 and 4	1634
#7	1 and 5	636
#8	6 or 7	1825
#9	limit 8 to (human and english language and yr="1994 -Current")	1626
#10	limit 9 to "reviews (best balance of sensitivity and specificity)"	747
	<b>Citations after duplicate removal in EndNote</b>	<b>504</b>

**Database:** BIOSIS Previews (Web of Science)

**Search date:** 8/12/2014

**Number of citations identified:** 424 (252 after duplicate removal)

**Search strategy:**

#1	(TS=(parent* OR caregiv* OR mother OR father)) AND LANGUAGE: (English)	310078
#2	(TS=(program* OR train* OR educat* OR promot* OR intervent* OR skill* OR support* OR group* OR practice* OR behaviour* OR service*)) AND LANGUAGE:(English) Indexes=BIOSIS Previews TimespaN=All years	4602858
#3	(TS=(baby OR babies OR infant* OR child* OR toddler* OR pre-school OR preschool)) AND LANGUAGE: (English) Indexes=BIOSIS Previews TimespaN=All years	830648
#4	(TS=("systematic NEAR review" OR "systematic NEAR overview" OR "review NEAR literature" OR "meta-analy*" OR "meta analy*" OR metaanaly* OR "selection criteria" OR "literature search" OR "manual search*" OR "relevant journal*" OR "hand search*" OR bibliograph* OR "reference list*" OR "data extraction")) AND LANGUAGE: (English) Indexes=BIOSIS Previews TimespaN=All years	67969
#5	#4 AND #3 AND #2 AND #1 Indexes=BIOSIS Previews TimespaN=All years	461
#6	(#5) AND LANGUAGE: (English)	427

#7	Indexes=BIOSIS Previews TimespaN=1994-2014 (#5) AND LANGUAGE: (English) Refined by: SUPER TAXA: ( VERTEBRATA OR CHORDATA OR ANIMALIA OR MAMMALIA OR PRIMATES ) Indexes=BIOSIS Previews TimespaN=1994-2014	424
<b>Citations after duplicate removal in EndNote</b>		<b>252</b>

**Database:** Social Science Citation Index (SSCI) and Conference Proceedings Citation Index – Social Science and Humanities (CPCI-SSH) (Web of Science Core Collection)

**Search date:** 8/12/2014

**Number of citations identified:** 994 (741 after duplicate removal)

**Search strategy:**

#1	TS=(parent* OR (maternal NEAR caregiv*) OR (paternal NEAR caregiv*) OR (infant NEAR caregiv*) OR mother OR father NOT parenteral) Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, CCR-EXPANDED, IC TimespaN=All years	543084
#2	TS=(program* OR train* OR educat* OR promot* OR intervent* OR skill* OR support* OR group* OR practice* OR behaviour* OR service*) Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, CCR-EXPANDED, IC TimespaN=All years	8548958
#3	TS=(baby OR babies OR infant* OR (young NEAR child*) OR toddler* OR pre-school OR preschool) Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, CCR-EXPANDED, IC TimespaN=All years	468894
#4	TS=("systematic NEAR review" OR "systematic NEAR overview" OR "review NEAR literature" OR "meta- analy*" OR "meta analy*" OR metaanaly* OR "selection criteria" OR "literature search" OR "manual search*" OR "relevant journal*" OR "hand search*" OR bibliograph* OR "reference list*" OR "data extraction") Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, CCR-EXPANDED, IC TimespaN=All years	248914
#5	(#1 AND #2 AND #3 AND #4) AND LANGUAGE: (English) Indexes=SSCI, CPCI-SSH TimespaN=1994-2014	994
<b>Citations after duplicate removal in EndNote</b>		<b>741</b>

**Database:** Sociological Abstracts (CSA) and Education Resources Information Center (ERIC) (Proquest)

**Search date:** 8/12/2014

**Number of citations identified:** 815 (770 after duplicate removal)

**Search strategy:**

#1	TI,AB,SU(parent* OR (maternal NEAR/3 caregiv*) OR (paternal NEAR/3 caregiv*) OR (infant NEAR/3 caregiv*) OR mother OR father)
----	--

AND #2	TI,AB,SU(program* OR train* OR educat* OR promot* OR intervent* OR skill* OR support* OR group* OR practice* OR behaviour* OR service*)	
AND #3	TI,AB,SU(baby OR babies OR infant* OR child* OR toddler* OR pre-school OR preschool)	
AND #4	TI,AB,SU("systematic NEAR/3 review" OR "systematic NEAR/3 overview" OR "review NEAR/5 literature" OR "meta-analy*" OR "meta analy*" OR metaanaly* OR "selection criteria" OR "literature search" OR "manual search*" OR "relevant journal*" OR "hand search*" OR bibliograph* OR "reference list*" OR "data extraction")	
<b>Total citations</b>		<b>815</b>
<b>Citations after duplicate removal in EndNote</b>		<b>770</b>

**Database:** Population Information Online (POPLINE)

**Search date:** 5/12/2014

**Number of citations identified:** 1013 (977 after duplicate removal)

**Search strategy:**

#1	(parent* OR (maternal caregiv*) OR (paternal caregiv*) OR (infant caregiv*)) (All fields)	
AND #2	(program* OR train* OR educat* OR promot* OR intervent* OR skill* OR support* OR group* OR practice* OR behaviour* OR service*) (All fields)	
AND #3	(baby OR babies OR infant* OR child* OR toddler* OR preschool OR preschool) (All fields)	
AND #4	("systematic review" OR overview OR "meta analy*" OR "metaanaly*" OR "meta-analy*" OR review) (All fields)	
<b>Total citations</b>		<b>1013</b>
<b>Citations after duplicate removal in EndNote</b>		<b>977</b>

**Database:** Australian Indigenous HealthInfoNet

**Search date:** 5/12/2014

**Number of citations identified:** 68

**Search strategy:**

Health Topic	Social and emotional wellbeing	
	<ul style="list-style-type: none"> <li>• Parenting</li> <li>• Infant health</li> <li>• Infants</li> </ul>	
<b>Total citations</b>		<b>68</b>

**Database:** Australian Institute of Family Studies (AIFS) Library

**Search date:** 5/12/2014

**Number of citations identified:** 388

**Search strategy:**

#1	words or phrase "(parent* OR caregiv* OR mother OR father)" AND words or phrase "(program* OR train* OR educat* OR promot* OR intervent* OR skill* OR support* OR group* OR practice* OR behaviour* OR service*)" AND words or phrase "(baby OR babies OR infant* OR child* OR toddler* OR preschool OR preschool)" AND words or phrase ("systematic review" OR overview OR "meta analy*" OR "metaanaly*" OR "meta-analy*" OR review)"	
<b>Total citations</b>		<b>388</b>

**Database:** System for Information on Grey Literature in Europe (OpenSIGLE)

**Search date:** 5/12/2014

**Number of citations identified:** 147

**Search strategy:**

#1 (parent\* OR caregiv\* OR mother OR father) AND (program\* OR train\* OR  
educat\* OR promot\* OR intervent\* OR skill\* OR support\* OR group\* OR  
practice\* OR behaviour\* OR service\*) AND (baby OR babies OR infant\* OR  
child\* OR toddler\* OR preschool OR preschool) AND ("systematic review" OR  
overview OR "meta analy\*" OR "metaanaly\*" OR "meta-analy\*" OR review)  
lang:"en"

**Total citations**

**147**

# Evidence tables

## Home visiting interventions

**Table 1: Matrix indicating the studies that were included in the systematic reviews**

STUDY ID	Systematic review				
	Elkan 2000	Peacock 2013	Reynolds 2009	Segal 2012^	Wade 1999
Aracena 2009		✓ (RCT, N=90)			
Armstrong 1999, 2000 (Fraser 2000)				✓(design and N=NR)	
Barkauskas 1983	✓ (RCT, N=110)				
Barker 1988	✓ (non-RCT, N=1,051)				
Barker 1994	✓ (non-RCT, N=606)				
Barlow 2006				✓(design and N=NR)	
Barlow 2007				✓(design and N=NR)	
Barnard 1988 (Booth 1989)	✓ (RCT, N=147)				
Barnett 1985 (Parker 1987)					✓ (cohort analytic, N=89)
Barrera 1986, 1991	✓ (RCT, N=83)			✓(design and N=NR)*	
Barth 1988, 1991	✓ (RCT, N=191)	✓ (RCT, N=191)	✓ (RCT, N=191)	✓(design and N=NR)	
Bartu 2006				✓(design and N=NR)	
Bashour 2008				✓(design and N=NR)	
Beckwith 1988	✓ (RCT, N=92)				
Black 1994	✓ (RCT, N=60)			✓(design and N=NR)	
Black 1995 (Hutcheson 1997)	✓ (RCT, N=130)	✓ (RCT, N=130)			✓ (RCT, N=130)
Black 2006				✓(design and N=NR)	
Brooten 1986	✓ (RCT, N=79)				
Brayden 1993			✓ (RCT, N=1,154)		
Britner 1997			✓ (quasi-experimental design (assignment by risk level), N=535)		
Brown 1992					✓ (CCT, N=117)
Brown 1997	✓ (non-RCT, N=39)				
Bugental 2002		✓ (RCT, N=96)	✓ (RCT, N=96)		
Bugental 2009				✓(design and N=NR)	
Bullock 1995					✓ (RCT, N=131)
Caldera 2007 (Duggan 2007)		✓ (RCT, N=325)	✓ (RCT, N=325)	✓(design and N=NR)	
CCAP 1996			✓ (RCT, N=304)		
Chapman 1994	✓ (RCT, N=153)				

Cheng 2007				✓ (design and N=NR)	
Christensen 1984 (Velasquez 1984)				✓ (design and N=NR)	
Cupples 2011		✓ (RCT, N=343)			
Dawson 1989	✓ (RCT, N=172)			✓ (design and N=NR)	
Duggan 1999, 2004a, 2004b (CCAP 1996; El Kamary 2004)		✓ (RCT, N=643)	✓ (RCT, N=643)	✓ (design and N=NR)	✓ (CCT, N=372)
Duggan 2009		✓ (RCT, N=325)			
DuMont 2006, 2008		✓ (RCT, N=1,297)	✓ (RCT, N=1,173)	✓ (design and N=NR)	
Eckenrode 2000				✓ (design and N=NR)	
Fergusson 2005			✓ (RCT, N=446)	✓ (design and N=NR)	
Field 1980	✓ (RCT, N=60)				✓ (RCT, N=60)
Field 1982	✓ (RCT, N=105)			✓ (design and N=NR)	✓ (CCT, N=120)
Gerrard 1993	✓ (non-RCT, N=2,009)				
Gessner 2008				✓ (design and N=NR)	
Gokcay 1993	✓ (RCT, N=244)				
Graham 1990, 1992					✓ (RCT, N=145)
Grantham-McGregor 1991		✓ (RCT, N=129)			
Gray 1977	✓ (RCT, N=150)			✓ (design and N=NR)	
Gutelius 1972, 1977	✓ (RCT, N=97)				
Hamadani 2006		✓ (RCT, N=321)			
Hardy 1989	✓ (RCT, N=263)			✓ (design and N=NR)	✓ (RCT, N=290)
Hall 1980 (Lawson-Harrison 1986)	✓ (RCT, N=30)				
Hewitt 1991	✓ (non-RCT, N=>66)				
IHDP 1990 (Berlin 1998; Blair 1995; Brooks-Gunn 1993; Brooks-Gunn 1992; Brooks-Gunn 1994; Casey 1994; Gross 1993; Hollomon 1998; Johnson 1993; McCarton 1998; McCarton 1997; McCormick 2006; McCormick 1998; McCormick 1993; Spiker 1993)	✓ (RCT, N=908) (N=180 reported for Casey 1994)	✓ (RCT, N=262)			
Holden 1989	✓ (RCT, N=55)				
Huxley 1993	✓ (non-RCT, N=40)		✓ (matched control group design, N=40)	✓ (design and N=NR)	
Infante-Rivard 1989	✓ (RCT, N=47)			✓ (design and N=NR)	
Johnson 1987, 1991					✓ (RCT, N=>137)
Johnson 1993	✓ (RCT, N=262)				
Johnston 2006				✓ (design and N=NR)	

Jones 1985, 1986	✓ (RCT, N=583)				
Kaaresen 2006				✓ (design and N=NR)	
Kartin 2002		✓ (RCT, N=78)			
Keefe 2006				✓ (design and N=NR)	
Kelly 1983	✓ (non-RCT, N=38)				
Kerr 1997	✓ (RCT, N=220)				
King 2005		✓ (RCT, N=513)			
Kitzman 1997, 2000 (Olds 2004; Olds 2007)	✓ (RCT, N=743)			✓ (design and N=NR)	
Koniak-Griffin 2002, 2003				✓ (design and N=NR)	
Larson 1980	✓ (RCT, N=71)			✓ (design and N=NR)*	✓ (CCT, N=115)
Le Roux 2010		✓ (RCT, N=788)			
Lee 2009		✓ (RCT, N=502)			
Love 2005				✓ (design and N=NR)*	
Luster 1996					✓ (CCT, N=142)
Lutzker 1984				✓ (design and N=NR)	
Lynch 1986	✓ (RCT, N=270)				
McLaughlin 1992		✓ (RCT, N=428)			✓ (RCT, N=428)
MacNeil 1972	✓ (non-RCT, N=189)				
Marcenko 1994, 1996	✓ (RCT, N=225)		✓ (RCT, N=225)	✓ (design and N=NR)	✓ (CCT, N=225)
Margolis 1996	✓ (RCT, N=93)				
Margolis 2001				✓ (design and N=NR)	
Muslow 1996				✓ (design and N=NR)	
Nair 2003 (Schuler 2000)		✓ (RCT, N=161)		✓ (design and N=NR)	
Norr 2003				✓ (design and N=NR)	
Olds 1986, 1988, 1993, 1994, 1995, 1997 (Izzo 2005; Eckenrode 2001)	✓ (RCT, N=400)		✓ (RCT, N=400)	✓ (design and N=NR)	
Olds 2002				✓ (design and N=NR)	
Olds 2004				✓ (design and N=NR)	
Osofsky 1988	✓ (RCT, N=130)				
Powell 1989	✓ (RCT, N=58)				
Pressman 1983					✓ (CCT, N=55)
Quinlivan 2003				✓ (design and N=NR)	
Resnick 1987, 1988	✓ (RCT, N=41)				
Robitaille 1990	✓ (non-RCT, N=550)				
Scheiwe 2010		✓ (RCT, N=101)			
Sellers 1982 (Super 1990)					✓ (CCT, N=NR)
Seeley 1996	✓ (non-RCT, N=100)				
Seitz 1985	✓ (non-RCT, N=34)				
Shapiro 1995	✓ (RCT, N=100)				



Siegel 1980 (Dennis 1983)	✓ (RCT, N=268)			✓ (design and N=NR)	✓ (CCT, N=202)
Stanwick 1982	✓ (RCT, N=156)				
St. Pierre 1999				✓ (design and N=NR)	
Steel O'Connor 2003				✓ (design and N=NR)	
Stevens-Simon 2001			✓ (RCT, N=171)	✓ (design and N=NR)	
Thompson 1982	✓ (RCT, N=40)				
Wagner 1999			✓ (RCT, N=704)	✓ (design and N=NR)**	
Wiggins 2004, 2005				✓ (design and N=NR)	
Wasik 1990	✓ (RCT, N=64)				
Wright 1981	✓ (RCT, N=229)				
Ytterstad 1995	✓ (non-RCT, N=NR)				

^Segal 2012 describes 52 included programs, 36 RCTs, 14 nRCTs and 2 cohort studies, however does not report the designs for each study individually

\*Reports on 2 programs; \*\*reports on 3 programs

**Abbreviations:** CCAP: Center on Child Abuse Prevention Research; CCT: controlled clinical trial; IHDP: Infant Health and Development Program; N: number; NR: not reported; RCT: randomised controlled trial

**Table 2: Evidence table for Elkan 2000<sup>1</sup>**

<b>Review ID</b>	Elkan 2000
<b>Search date</b>	1966 to July 1997
<b>Review method</b>	Meta-analysis (Health Technology Report)
<b>Ongoing studies</b>	NR, though 2 studies were excluded as they were published after the end date of the literature search: Avon Premature Infant Project. Randomized trial of parental support for families with very preterm children. Arch Dis Child Fetal Neonatal 1998;79:F4–F11. Emond AM, Pollock JI, Harvey I, Peters T, Thead J, Deave T, et al. An evaluation of the first parent health visitor scheme in Avon. Final report to NHS Executive South and West Research and Development Directorate, Bristol, 1998 (in press).
<b>No. studies of relevance to this Overview and their design(s)</b>	86 included home visiting programs (evaluated in 102 articles); 50 relevant studies (38 RCTs, 12 non-RCTs)
<b>No. participants in relevant studies</b>	>11,851 in 49 of the relevant studies, NR in 1 study (and for 1 study N for control group NR)
<b>Location/setting</b>	Canada: 8 studies; England: 6 studies; Ireland: 2 studies; Jamaica: 1 study; Norway: 1 study; Scotland: 1 study; Turkey: 1 study; UK: 3 studies; USA: 27 studies
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 8/11 ('high' quality)
<b>Quality of relevant studies</b>	Mixed quality; quality scores ranged from 0.14 to 0.79 (Reisch and colleagues 0 = worst possible, 1 = best possible)
<b>Review objective</b>	To conduct a systematic review of the effectiveness and cost-effectiveness of domiciliary health visiting (subsequent objectives: to conduct a selective review of the British health visiting literature; to provide recommendations for future research) [note: the review included an assessment of health visiting for parents and children, and for elderly people]
<b>Review eligibility criteria</b>	<u>Designs</u> : studies with comparison groups (RCTs, non-RCTs, and controlled before-and-after comparison) were included; <u>interventions</u> : studies reporting on evaluations of home visiting programs, with at least 1 postnatal home visit undertaken as part of the program were included; the personnel involved in carrying out the program undertook responsibilities within the remit of British health visitors and were not members of a professional group other than health visitors (e.g. community psychiatric nursing, midwifery); <u>outcomes</u> : studies reporting outcomes relevant to the objectives of British health visitors were included: rates of uptake of appropriate health and community services; rates of child abuse and unintentional injury in childhood; attitudes and beliefs; behaviours; client satisfaction; costs
<b>Participant population</b>	Pregnant women and parents and their infants; including parents of preterm/low birthweight infants; pregnant/postpartum parents 'at risk' (e.g. teenagers, low socio-economic status or low income, with lack of social support, unmarried, with drug use, with infants with failure to thrive); and pregnant/postpartum parents with no identified risk ('mothers with newborn infants')
<b>Intervention</b>	Home visiting programs (with at least 1 postnatal visit); ranging from 1 visit postpartum to 1 visit per week for first 3 years of the child's life
<b>Comparator</b>	Variable (commonly standard care/no home visits)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Pooled results</b>	
Temperament: Carey Infant Temperament Scale (categories of temperament measured/reported no clear) (4-16 months)	ES: NR; P (heterogeneity): NR; P (overall): 0.07 (5 RCTs, N=814)

<sup>1</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Pooled results</b>	
Child cognitive development: Bayley Scale of Mental Development (9 to 24 months)	ES: 0.17 (95% CI 0.06, 0.28); P (heterogeneity): <0.001; P (overall): NR (8 RCTs, N=1,670)
Child motor development: Bayley Scale of Motor Development (9 to 18 months)	ES: 0.17 (95% CI -0.03, 0.38); P (heterogeneity): 0.09; P (overall): NR (4 RCTs, N=390)
Child cognitive development: Stanford-Binet Intelligence Test IQ scores (12 to 48 months)	ES: 0.27 (95% CI 0.12, 0.45); P (heterogeneity): <0.001; P (overall): NR (5 RCTs, N=870) [1 study in infants > 12 months of age]
Child physical development: weight (up to 48 months)	ES: 0.02 (95% CI -0.17, 0.24); P (heterogeneity): 0.63; P (overall): NR (3 RCTs, N=463) [1 study in infants > 12 months of age]
Child physical development: height (up to 48 months)	ES: -0.02 (95% CI -0.24, 0.20); P (heterogeneity): 0.79; P (overall): NR (3 RCTs, N=463) [1 study in infants > 12 months of age]
<b>Single study results</b>	
Parents' developmental expectations of their child	<i>4 studies reported on this outcome</i>
	3 studies reported SS differences favouring the home visiting group: More positive perceptions and expectations of their child (1 RCT, N=30) More realistic developmental expectations of their children (1 RCT, N=92) Better knowledge of developmental milestones and more realistic expectations of their children (1 RCT, N=60)
	1 study reported NS difference: Appropriate expectations of their child (1 non-RCT, N=40)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Pooled results</b>	
Sleeping difficulties (6-12 months)	OR: 0.48 (95% CI 0.30, 0.76); P (heterogeneity): 0.89; P (overall): NR (4 RCTs, N=763) [1 study in infants > 12 months of age]
<b>Single study results</b>	
General child behaviour problems	<i>7 studies reported on child behaviour problems</i>
	4 studies reported SS overall improvements in behaviour of children (1 RCT, N=97) (1 RCT, N=908) (1 non-RCT, N=39) (1 RCT, N=180)
	3 studies reported NS differences in behaviour of children (1 RCT, N=40) (1 RCT, N=743) (1 non-RCT, N=>66)
Maternal concern about child behaviour	<i>7 studies reported on this outcome</i>
	4 studies found SS decreased maternal concern with home visiting (1 RCT, N=156) (1 RCT, N=71) (1 non-RCT, N=39) (1 non-RCT, N=>66)
	1 study found NS difference (1 non-RCT, N=100)
Feeding problems	2 studies reported that maternal concern was greater with home visiting (1 RCT, N=110) (1 RCT, N=400)
	<i>2 studies reported on this outcome</i>
School behavioural problems	2 studies reported SS fewer feeding problems with home visiting (1 RCT, N=400) (1 RCT, N=71)
	<i>1 study reported on this outcome</i>
Mixed social, behavioural, developmental	This study found NS differences for teachers' ratings of child's positive and negative behaviour, however control boys were rated SS more negatively; control boys were SS more likely to be receiving school remedial or psychological services; there was less absenteeism and better school adjustment among home visited children (1 non-RCT, N=34)
	<i>1 study reported on this outcome</i>
	1 study found NS difference for children's social maturity (scale combining developmental, behavioural and social outcomes) (1 RCT, N=153)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Pooled results</b>	
Prevention of unintentional injury in	OR: 0.74 (95% CI 0.57, 0.95); P (heterogeneity): 0.31; P (overall): NR (6 RCTs,

childhood: unintentional injuries (up to 48 months)	N=1,836) [little change when restricted to RCTs, or under a random effects model]
Uptake of preventive health services: immunisation (6 months to 5 years)	OR: 1.40 (95% CI 1.16, 1.68); P (heterogeneity): 0.005; P (overall): NR (9 studies: 8 RCTs, 1 non-RCT, N=2,518) [lost significance under random effects model]
Uptake of preventive health services (excluding immunisation) (6 months to 5 years)	OR: 1.18 (95% CI 0.69, 2.02); P (heterogeneity): 0.02; P (overall): NR (3 RCTs, N=425)
Uptake of acute-care child health services: hospital admission (excluding intentional or unintentional injury) (9-46 months)	OR: 0.73 (95% CI 0.55, 0.98); P (heterogeneity): 0.005; P (overall): NR (7 studies: 4 RCTs, 3 non-RCTs, N=2,897) [lost significance under random effect model, and when restricted to RCTs]
Uptake of acute-care child health services: Use of emergency medical services (up to 46 months)	OR: 0.77 (95% CI 0.58, 1.03); P (heterogeneity): 0.12; P (overall): NR (5 studies: 4 RCTs, 1 non-RCT, N=1,193)
<b>Single study results</b>	
Uptake of preventive health services: immunisation	<i>2 studies (not included in meta-analysis) reported on this outcome</i>
	1 study reported SS higher mean baby score (uptake of immunisations and preventive health services) (1 RCT, N=191)
	1 study reported NS difference in mean number of immunisations at 12 months (1 RCT, N=268)
Uptake of preventive health services (excluding immunisation)	<i>6 studies (not included in meta-analysis) reported on this outcome</i>
	5 studies failed to show SS differences (1 RCT, N=263) (1 RCT, N=172) (1 RCT, N=268) (1 RCT, N=400) (1 RCT, N=743)
	1 other study showed a SS increased in uptake of preventive health services (1 RCT, N=191)
Uptake of acute-care child health services: hospital admission (excluding intentional or unintentional injury)	<i>2 studies (not included in meta-analysis) reported on this outcome</i>
	2 studies reported NS differences (1 RCT, N=100) (1 RCT, N=79)
Uptake of acute-care child health services: Use of emergency medical services	<i>1 study (not included in meta-analysis) reported on this outcome</i>
	1 study reported that SS more children in the control group presented to emergency services (1 non-RCT, N=40)
Uptake of acute-care child health services: use of services for selected medical conditions	<i>5 studies reported on this outcome</i>
	2 studies reported SS positive findings for: Proportion of infants presenting to outpatient services with otitis media and severe monilia nappy rash (1 RCT, N=263) Presentations to emergency medical services with vomiting, diarrhoea and dehydration (1 non-RCT, N=40)
	3 studies reported NS differences for: Being admitted to hospital for 10 medical conditions (1 RCT, N=262) Visits for chronic illnesses (1 RCT, N=172) Number of visits for organic conditions or failure to thrive (1 RCT, N=229)
	1 study found an increase in visits to local clinics for sick child care for minor illnesses with home visiting (1 RCT, N=172)
Medical conditions	<i>4 studies reported on this outcome</i>
	1 study found SS fewer maternal reports of otitis media with home visiting (1 RCT, N=263)
	3 studies reported NS benefits for: Maternally reported health problems (1 RCT, N=110) Serious health conditions (1 RCT, N=908) Ratings from minor to severe of 9 common medical conditions (1 RCT, N=191)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Pooled results</b>	
Home environment: HOME Inventory (maternal child interaction) (6 weeks to 36 months)	ES: NR; P (heterogeneity): NR; P (overall): <0.0001 (12 studies: 10 RCTs and 2 non-RCTs, N: 1,708) [1 study in infants > 12 months]

<b>Single study results</b>	
HOME Inventory (maternal child interaction)	<i>15 studies reported on this outcome</i>
	6 studies reported SS higher scores (for total or subscales) in favour of home visiting: (1 RCT, N=71) (1 RCT, N=83) (1 RCT, N=60) (1 RCT, N=743) (1 non-RCT, N=40) (1 RCT, N=130)
	2 studies reported benefits (with no statistical test performed): (1 RCT, N=147) (1 RCT, N=100)
	7 studies reported NS difference (1 RCT, N=105) (1 RCT, N=225) (1 RCT, N=400) (1 RCT, N=130) (1 RCT, N=47) (1 RCT, N=64) (1 RCT, N=60)
Interaction between mother and child	<i>13 reported on this outcome</i>
	8 studies reported SS better interaction between mother and child in home visiting group: improvements for: Observed involvement and reciprocal interactions with their child (1 RCT, N=92) Mother's positive emotional involvement with her baby, her responsiveness to her child's behaviour, and the amount and kind of contact between mother and child (1 RCT, N=71) Observed conversations between mother and child, and more involved mothers (1 RCT, N=97) Rates of reported difficulties in the mother-infant relationship (1 non-RCT, N=100) Measures of mother-child interaction (1 RCT, N=60) Observed parent-child positive interaction, parent-child non-verbal negative interactions (1 RCT, N=41) Home socialisation environments in 1 of 4 areas (1 non-RCT, N=606) Mother-child attachment at 4 months, and interaction and stimulation at 12 months (1 RCT, N=268)
	5 studies found NS differences for: Giving more praise and positive feedback to children (1 RCT, N=40) Infant or maternal interactive behaviours (1 RCT, N=83) Children's interactive communication skills and parental warmth (1 RCT, N=130) Mother-child interaction (NCAST) (1 RCT, N=743) (1 RCT, N=147)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
Maternal psychological health	<i>12 studies reported on this outcome</i>
	7 studies reported SS positive effects, including for: The Edinburgh Postnatal Depression Scale (1 non-RCT, N=100) (1 non-RCT, N=2,009) (1 RCT, N=55) 5 types of psychological distress (depression, phobic, anxiety, interpersonal sensitivity, psychoticism, somatisation) (1 RCT, N=225) Mental Health Inventory (1 non-RCT, N=39) 3 psychological symptoms (tiredness, feeling miserable, wanting to stay indoors) (1 RCT, N=262) Degree of emotional stability (1 RCT, N=92)
	5 studies reported NS differences for: Beck Depression Inventory (1 RCT, N=147) Anxiety (State-Trait Anxiety Inventory); depression (Centre for Epidemiological Studies Depression Scale); mother's sense of control over events (Pearlin Mastery Scale) (1 RCT, N=191) Child-related maternal stress (Parenting Stress Index) (1 RCT, N=60) Anxiety (State-Trait Anxiety Inventory) (1 RCT, N=60) Anxiety and depression (1 RCT, N=743) [though SS improvements in mastery were observed]
Maternal self-esteem	<i>2 studies reported on this outcome</i>
	2 studies showed NS improvements (1 non-RCT, N=606) (1 RCT, N=225)

<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Pooled results</b>	
Breastfeeding (at 3 months of age)	OR: 1.34 (95% CI 1.03, 1.74); P (heterogeneity) 0.13; P (overall): NR (3 RCTs, 1 non-RCT, N=938)
Family size (1-10 years)	ES: NR; P (overall): 0.07 (4 studies: 3 RCTs, 1 non-RCT, N=1,282)
Mothers' use of public assistance (12-48 months)	ES -0.08 (95% CI -0.18, 0.02); P (heterogeneity) <0.001; P (overall): NR (3 RCTs, N=1,413)
Mothers employment (12-46 months)	ES: NR; P (overall): 0.29 (3 RCTs, N=1,413)
<b>Single study results</b>	
Parental stimulation of child, through books, toys or games	<i>4 studies reported this outcome</i>
	2 studies reported SS positive findings for: Frequency of reading to the child, playing cognitive games and using nursery rhymes (1 RCT, N=262) Use of story books and crayons (1 RCT, N=97)
	2 studies reported NS difference for: Frequency of reading to the child (1 non-RCT, N=606) Provision of toys, games and reading materials (1 RCT, N=400)
Parental attitudes and actions towards child discipline	<i>6 studies reported this outcome</i>
	4 studies reported SS less punitive or negative attitudes towards child-rearing: Diminished benefit in the value of corporal punishment (1 non-RCT, N=40) Less punitive child-rearing attitudes (1 RCT, N=60) More appropriate answers to questions regarding handling of their child's kicking or hitting, frequency of use of praise and management of fear of the dark (1 RCT, N=97) Better overall score concerning beliefs associated with child abuse (1 RCT, N=743)
	2 studies found NS differences for: Number of times the child had been spanked, hit, scolded or shouted at in previous 2 weeks (1 RCT, N=400) Extent to which parents were "authoritarian" in their child-rearing beliefs, or "progressive" (1 RCT, N=64)
Mothers' 'teaching' ability	<i>2 studies reported on this outcome</i>
	2 studies found SS differences in favour of home visiting for: Stimulation that promotes future success at school (1 RCT, N=97) Involvement in child's schooling (1 non-RCT, N=34)
Mothers' knowledge concerning their child's health	<i>2 studies reported on this outcome</i>
	1 study showed SS more knowledge about the appropriate use of healthcare (1 non-RCT, N=189) 1 study showed NS difference in knowledge specifically about immunisation (1 RCT, N=156)
Mothers' caretaking skills	<i>2 studies reported on this outcome</i>
	1 study showed SS difference for mother's skill in caretaking (1 RCT, N=71)
	1 study showed NS difference in mother's skill in bathing their infants and performing nose and ear hygiene (1 RCT, N=156)
Prevention of unintentional injury in childhood: hazard reduction	<i>1 study reported on this outcome</i>
	SS benefits seen in 1 study for: Range of home hazards (mean number at 34 and 46 months) (1 RCT, N=400)
Prevention of unintentional injury in childhood: unintentional injuries	<i>1 study (not included in meta-analysis) reported on this outcome</i>
	1 study with multi-faceted interventions showed SS reductions in unintentional injuries (1 non-RCT, N=NR)

Mother's use of support networks	<i>4 studies reported on this outcome</i>
	1 study showed NS differences Community Resources Use Scale; Social Support and Preparation Scale; Inventory of Social Supportive Behaviours; Social Support Inventory (1 RCT, N=191)
	3 studies showed some SS beneficial effects for some/all of the outcomes assessed: Social and Community Life Skills Scale; Personal Resources Questionnaire (1 RCT, N=147) [no differences on Social and Community Life Skills Scale; greater sense of support] Help accessing services; Norbeck Social Support Questionnaire (1 RCT, N=225) [greater help accessing transport services, baby furniture and toys, clothes for self, and for babies, and healthcare; no differences for help with food and housing; increase in social support] Social contacts and quality of support; quality of support (1 non-RCT, N=39) [social contacts and quality of support were unchanged, quality of support improved]
Breastfeeding (at least 3 months of age)	<i>3 studies (not included in meta-analysis) reported on this outcome</i>
	NS difference in 2 studies in number of weeks breastfeeding (1 RCT, N=97) (1 RCT, N=743) Increase in length of breast feeding in 1 other study (1 non-RCT, N=606)
Child's diet	<i>4 studies reported on this outcome</i>
	3 studies showed SS improvements including for: Diet, and eating habits (1 RCT, N=97) Commencing cow's milk before 26 weeks and receiving inappropriate energy intake and qualities of animal protein, non-animal protein, wholefoods, vegetables, fruit and milk (1 RCT, N=262) Nutritional intake at 12 months [statistical test results not given] (1 non-RCT, N=1,051)
	1 study showed NS differences in adequacy of children's diet (1 non-RCT, N=606)
Family size	<i>1 study (not included in meta-analysis) reported on this outcome</i>
	1 study reported a SS effect of home visiting in reducing the number of births (1 RCT, N=908)
Mothers return to education	<i>4 studies reported on this outcome</i>
	2 studies showed no SS differences for: Number of years of education completed at 46 months postpartum (1 RCT, N=400) Return to education (1 RCT, N=908)
	2 studies reported SS improvements for: Return to work or education (1 RCT, N=105) Number of years of education completed at 10 year follow up (1 non-RCT, N=34)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<i>Single study results</i>	
Client satisfaction	<i>10 studies reported on this outcome</i>
	All control mothers would have liked a home visit (1 RCT, N=30) 71% of intervention mothers found the nurse's visit helpful; 56% of the non-visited mothers thought a visit might have been useful (1 RCT, N=156) 86% of intervention mothers found visits helpful (1 RCT, N=110) Intervention mothers reported a high level of satisfaction with the service and indicated they would recommend the service to someone else (they most strongly endorsed that the intervention helped them to get things done, and set goals) (1 RCT, N=191) Intervention mothers gave high ratings to their relationship with home visitors (1 RCT, N=172) Many intervention women felt supported and comforted by weekly visits; 88% reported that talking to their health visitor was the most important factor in their recovery (1 RCT, N=55) Intervention mothers felt the program was helpful (1 non-RCT, N=>66) Intervention mothers frequently noted the support they received from their home visitors (1 RCT, N=225) The project "found widespread professional acceptance and parental satisfaction" (1 RCT, N=100) 100% of intervention mothers said their home visitors showed sympathy; 95%

	reported being relaxed with home visitors; 92-100% reported they were helpful with feelings about the baby, their own feelings and questions about the baby (1 RCT, N=93)
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
Prevention of child abuse and neglect	<p><i>12 studies reported on this outcome</i></p> <p>3 studies found SS differences in favour of home visiting, relating to: Admissions to hospital with injury suspected to be due to abuse (1 RCT, N=150) "Need care" scores (removal by the police or social services for abuse or neglect; or children being cared for by neighbours) (1 RCT, N=191) Bavolek scores (belief in physical punishment, unrealistic expectations, lack of empathy and role reversal) 6 months postpartum (1 RCT, N=743)</p> <p>9 studies showed NS differences (1 RCT, N=79) (1 RCT, N=263) (1 RCT, N=262) (1 RCT, N=172) (1 RCT, N=225) (1 RCT, N=268) (1 RCT, N=400) (1 RCT, N=60) (1 non-RCT, N=40)</p>
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Temperament: Carey Infant Temperament Scale (4-16 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>Trained interventionist and teenage, black, female work/study student (Field 1982, ref 42)</li> <li>Nurses (Olds 1986, ref 48)</li> <li>Trained interventionist and teenage, black, female work/study student (Field 1980, ref 90)</li> </ul> <p>Non-significant result</p> <ul style="list-style-type: none"> <li>Parenting consultants (paraprofessionals) (Barth 1988, ref 46)</li> <li>Infant/parent therapists (Barrera 1986, ref 58)</li> </ul>
Child cognitive development: Bayley Scale of Mental Development (9 to 24 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>Paediatrician, nurses (Gutelius 1977, ref 35/76)</li> </ul> <p>Non-significant result</p> <ul style="list-style-type: none"> <li>Nurses (Olds 1986, ref 48)</li> <li>Nurse clinician (Thompson 1982, ref 79)</li> <li>Public health nurses (Infante-Rivard 1989, ref 87)</li> <li>Nurses (Kitzman 1997, ref 101)</li> <li>Community health nurses (Black 1994, ref 125)</li> <li>Lay home visitors (Black 1995, ref 126)</li> <li>Public health nurses (Chapman 1984, ref 131)</li> </ul>
Child motor development: Bayley Scale of Motor Development (9 to 18 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>Public health nurses (Infante-Rivard 1989, ref 87)</li> <li>Community health nurses (Black 1994, ref 125)</li> <li>Lay home visitors (Black 1995, ref 126)</li> <li>Public health nurses (Chapman 1984, ref 131)</li> </ul>
Child cognitive development: Stanford-Binet IQ scores (12 to 48 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>Paediatrician, nurses (Gutelius 1977, ref 35/76)</li> <li>Non-professionals (Casey 1994/Brooks-Gunn, ref 130/67)</li> </ul> <p>Non-significant result</p> <ul style="list-style-type: none"> <li>Nurses (Olds 1994, ref 82)</li> <li>Nurse clinician (Thompson 1982, ref 79)</li> <li>Public health nurses (Chapman 1984, ref 131)</li> </ul>
Child physical development: weight (up to 48 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>Lay home visitors (Black 1995, ref 126)</li> <li>Public health nurses (Chapman 1984, ref 131)</li> <li>Non-professionals (Casey 1994/IHDP 1990, ref 130/69)</li> </ul>
Child physical development: height (up to 48 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>Lay home visitors (Black 1995, ref 126)</li> <li>Public health nurses (Chapman 1984, ref 131)</li> <li>Non-professionals (Casey 1994/IHDP 1990, ref 130/69)</li> </ul>



Sleeping difficulties (6-12 months)	Significant result <ul style="list-style-type: none"> <li>Paediatrician, nurses (Gutelius 1977, ref 35)</li> <li>Health visitors (Kerr 1997, ref 150)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Nurses (Olds 1986, ref 48)</li> <li>Health visitors (Weir 1988, ref 172)</li> </ul>
Uptake of preventive health services: immunisation (6 months to 5 years)	Significant result <ul style="list-style-type: none"> <li>Community women (Hardy 1989, ref 47)</li> <li>Psychology graduates (Larson 1980, ref 57)</li> <li>Non-professional community mothers (Johnson 1993, ref 52)</li> <li>Public health nurses (Infante-Rivard 1989, ref 87)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Public health nurses (Barkauskas 1983, ref 38)</li> <li>Paraprofessionals (Dawson 1989, ref 71)</li> <li>Nurses (Kitzman 1997, ref 101)</li> <li>Health visitors (Barker 1994, ref 123)</li> <li>Community women (Gokcay 1993, 138)</li> </ul>
Uptake of preventive health services (excluding immunisation) (6 months to 5 years)	Non-significant result <ul style="list-style-type: none"> <li>Public health nurses (Barkauskas 1983, ref 38)</li> <li>Psychology graduates (Larson 1980, ref 57)</li> <li>Community women (Gokcay 1993, 138)</li> </ul>
Uptake of acute-care child health services: hospital admission (excluding intentional or unintentional injury) (9-46 months)	Significant result <ul style="list-style-type: none"> <li>Community women (Hardy 1989, ref 47)</li> <li>Health visitors (Barker 1988, ref 122)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Nurses (Olds 1994, ref 82)</li> <li>Paraprofessionals (Siegel 1980, ref 75)</li> <li>Non-professional community member (Johnson 1993, ref 62)</li> <li>Public health nurses (Infante-Rivard 1989, ref 87)</li> <li>Health visitors (Barker 1994, ref 123)</li> </ul>
Uptake of acute-care child health services: Use of emergency medical services (up to 46 months)	Significant result <ul style="list-style-type: none"> <li>Community women (Hardy 1989, ref 47)</li> <li>Nurses (Olds 1994, ref 82)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Parenting consultants (paraprofessionals) (Barth 1991, ref 70)</li> <li>Psychology graduates (Larson 1980, ref 57)</li> <li>Paraprofessionals (Siegel 1980, ref 75)</li> </ul>
Home environment: HOME Inventory (maternal child interaction) (6 weeks to 36 months)	Significant result <ul style="list-style-type: none"> <li>Psychology graduates (Larson 1980, ref 57)</li> <li>Infant and parent therapists (Barrera 1986, ref 58)</li> <li>Trained interventionist and teenage, black, female work/study student (Field 1980, ref 90)</li> <li>Nurses (Kitzman 1997, ref 101)</li> <li>Lay home visitors (Black 1995, ref 126)</li> <li>Health visitors and clinical medical officers (Davis 1998, ref 133)</li> <li>Nurses (Huxley 1992, ref 145)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Teachers (Field 1982, ref 42)</li> <li>Public health nurses (Infante-Rivard 1989, ref 87)</li> <li>Day care teachers, social workers, nurses (Wasik 1990, ref 88)</li> <li>Community health nurses (Black 1994, ref 125)</li> <li>Developmental paediatrician and/or nurse and social worker (Casey 1994, ref 130)</li> </ul>
Prevention of unintentional injury in childhood: unintentional injuries (up to 48 months)	Significant result <ul style="list-style-type: none"> <li>Nurses (Olds 1994, ref 82)</li> <li>Psychology graduates (Larson 1980, ref 57)</li> <li>Nurses (Kitzman 1997, ref 101)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Paediatrician, nurses (Gutelius 1977, ref 35/76)</li> <li>Community women (Hardy 1989, ref 47)</li> </ul>

	<ul style="list-style-type: none"> <li>Non-professional community mothers (Johnson 1993, ref 52)</li> </ul>
Family size (1-10 years)	Significant result <ul style="list-style-type: none"> <li>Teachers (Field 1982, ref 42)</li> <li>Nurses (Kitzman 1997, ref 101)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Nurses (Olds 1988, ref 50)</li> <li>Home visitor, paediatrician, primary care day worker (Seitz 1985, ref 53)</li> </ul>
Mothers' use of public assistance (12-48 months)	Significant result <ul style="list-style-type: none"> <li>Teachers (Field 1982, ref 42)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Nurses (Olds 1988, ref 50)</li> <li>Non-professionals (Brooks-Gunn 1994, ref 127)</li> </ul>
Mothers employment (12-46 months)	Significant result <ul style="list-style-type: none"> <li>Teachers (Field 1982, ref 42)</li> <li>Non-professionals (Brooks-Gunn 1994, ref 127)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Nurses (Olds 1988, ref 50)</li> </ul>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Interventions in all studies were delivered in the home.	
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Temperament: Carey Infant Temperament Scale (4-16 months)	Significant result <ul style="list-style-type: none"> <li>Black teenage mothers of low socio-economic status with term infants (Field 1982, ref 42)</li> <li>Children born to primiparous women who were either teenagers, unmarried or of low socioeconomic status (Olds 1986, ref 48)</li> <li>Black teenage mothers of low socio-economic status with preterm infants (Field 1980, ref 90)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Mothers at risk of child abuse (Barth 1988, ref 46)</li> <li>Infants (Barrera 1986, ref 58)</li> </ul>
Child cognitive development: Bayley Scale of Mental Development (9 to 24 months)	Significant result <ul style="list-style-type: none"> <li>First-born black infants, low income families (Gutelius 1977, ref 35/76)</li> </ul>
	Non-significant result <ul style="list-style-type: none"> <li>Children born to primiparous women who were either teenagers, unmarried or of low socioeconomic status (Olds 1986, ref 48)</li> <li>Antenatal, black, unmarried, low socioeconomic status women, less than 18 years at infant birth (Thompson 1982, ref 79)</li> <li>Families of low socioeconomic status (Infante-Rivard 1989, ref 87)</li> <li>African-American women &lt; 29 weeks gestation, with no previous live births and at least 2 socio-demographic risk characteristics (Kitzman 1997, ref 101)</li> <li>Mothers with antenatal cocaine/heroin use (Black 1994, ref 125)</li> <li>Children with failure to thrive (Black 1995, ref 126)</li> <li>Prematurely born infants (Chapman 1984, ref 131)</li> </ul>
Child motor development: Bayley Scale of Motor Development (9 to 18 months)	Non-significant result <ul style="list-style-type: none"> <li>Families of low socioeconomic status (Infante-Rivard 1989, ref 87)</li> <li>Mothers with antenatal cocaine/heroin use (Black 1994, ref 125)</li> <li>Children with failure to thrive (Black 1995, ref 126)</li> <li>Prematurely born infants (Chapman 1984, ref 131)</li> </ul>
Child cognitive development: Stanford-Binet IQ scores (12 to 48 months)	Significant result <ul style="list-style-type: none"> <li>First-born black infants, low income families (Gutelius 1977, ref 35/76)</li> <li>Parents of low birthweight, premature infants (Casey 1994/Brooks-Gunn, ref 130/67)</li> </ul>
	Non-significant <ul style="list-style-type: none"> <li>Children born to primiparous women who were either teenagers, unmarried or of low socioeconomic status (Olds 1994, ref 82)</li> <li>Antenatal, black, unmarried, low socioeconomic status women, less than 18 years at infant birth (Thompson 1982, ref 79)</li> <li>Prematurely born infants (Chapman 1984, ref 131)</li> </ul>

Child physical development: weight (up to 48 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Children with failure to thrive (Black 1995, ref 126)</li> <li>• Prematurely born infants (Chapman 1984, ref 131)</li> <li>• Parents of low birthweight, premature infants (Casey 1994/IHDP 1990, ref 130/69)</li> </ul>
Child physical development: height (up to 48 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Children with failure to thrive (Black 1995, ref 126)</li> <li>• Prematurely born infants (Chapman 1984, ref 131)</li> <li>• Parents of low birthweight, premature infants (Casey 1994/IHDP 1990, ref 130/69)</li> </ul>
Sleeping difficulties (6-12 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• First-born black infants, low income families (Gutelius 1977, ref 35)</li> <li>• Babies (Kerr 1997, ref 150)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Children born to primiparous women who were either teenagers, unmarried or of low socioeconomic status (Olds 1986, ref 48)</li> <li>• Children with sleep problems from 4 months to 4.5 years (Weir 1988, ref 172)</li> </ul>
Uptake of preventive health services: immunisation (6 months to 5 years)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Inner city, black, low income families (Hardy 1989, ref 47)</li> <li>• Working class families (Larson 1980, ref 57)</li> <li>• Disadvantaged first time mothers (Johnson 1993, ref 52)</li> <li>• Families of low socioeconomic status (Infante-Rivard 1989, ref 87)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Mothers, first time birth, &gt; 2000 g, not hospitalised or separated for &gt; 14 days (Barkauskas 1983, ref 38)</li> <li>• Low-income families (Dawson 1989, ref 71)</li> <li>• African-American women &lt; 29 weeks gestation, with no previous live births and at least 2 socio-demographic risk characteristics (Kitzman 1997, ref 101)</li> <li>• Children on health visitor caseloads (3-27 months) (Barker 1994, ref 123)</li> <li>• Residents in squatter area (Gokcay 1993, 138)</li> </ul>
Uptake of preventive health services (excluding immunisation) (6 months to 5 years)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Mothers, first time birth, &gt; 2000 g, not hospitalised or separated for &gt; 14 days (Barkauskas 1983, ref 38)</li> <li>• Working class families (Larson 1980, ref 57)</li> <li>• Residents in squatter area (Gokcay 1993, 138)</li> </ul>
Uptake of acute-care child health services: hospital admission (excluding intentional or unintentional injury) (9-46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Inner-city, black, low-income families (Hardy 1989, ref 47)</li> <li>• Children on health visitor caseloads (Barker 1988, ref 122)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Children born to primiparous women who were either teenagers, unmarried or of low socioeconomic status (Olds 1994, ref 82)</li> <li>• Low-income families (Siegel 1980, ref 75)</li> <li>• Disadvantaged first time mothers (Johnson 1993, ref 62)</li> <li>• Families of low socioeconomic status (Infante-Rivard 1989, ref 87)</li> <li>• Children on health visitor caseloads (Barker 1994, ref 123)</li> </ul>
Uptake of acute-care child health services: Use of emergency medical services (up to 46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Inner-city, black, low-income families (Hardy 1989, ref 47)</li> <li>• Children born to primiparous women who were either teenagers, unmarried or of low socioeconomic status (Olds 1994, ref 82)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Mothers at risk of child abuse (Barth 1991, ref 70)</li> <li>• Working class families (Larson 1980, ref 57)</li> <li>• Low-income families (Siegel 1980, ref 75)</li> </ul>
Home environment: HOME Inventory (maternal child interaction) (6 weeks to 36 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Working class families (Larson 1980, ref 57)</li> <li>• Infants (Barrera 1986, ref 58)</li> <li>• Black teenage mothers of low socio-economic status with preterm infants (Field 1980, ref 90)</li> <li>• African-American women &lt; 29 weeks gestation, with no previous live</li> </ul>

	<p>births and at least 2 socio-demographic risk characteristics (Kitzman 1997, ref 101)</p> <ul style="list-style-type: none"> <li>• Children with failure to thrive (Black 1995, ref 126)</li> <li>• Parents of preschool children with multiple psychosocial problems (Davis 1998, ref 133)</li> <li>• Families referred to tri-agency intervention program (Huxley 1992, ref 145)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Black teenage mothers of low socio-economic status with term infants (Field 1982, ref 42)</li> <li>• Families of low socioeconomic status (Infante-Rivard 1989, ref 87)</li> <li>• At risk of cognitive difficulties (Wasik 1990, ref 88)</li> <li>• Mothers with antenatal cocaine/heroin use (Black 1994, ref 125)</li> <li>• Infants with failure to thrive (Casey 1994, ref 130)</li> </ul>
Prevention of unintentional injury in childhood: unintentional injuries (up to 48 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Children born to primiparous women who were either teenagers, unmarried or of low socioeconomic status (Olds 1994, ref 82)</li> <li>• Working class families (Larson 1980, ref 57)</li> <li>• African-American women &lt; 29 weeks gestation, with no previous live births and at least 2 socio-demographic risk characteristics (Kitzman 1997, ref 101)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• First-born black infants, low income families (Gutelius 1977, ref 35)</li> <li>• Inner city, black, low income families (Hardy 1989, ref 47)</li> <li>• Disadvantaged first time mothers (Johnson 1993, ref 52)</li> </ul>
Family size (1-10 years)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Black teenage mothers of low socio-economic status with term infants (Field 1982, ref 42)</li> <li>• African-American women &lt; 29 weeks gestation, with no previous live births and at least 2 socio-demographic risk characteristics (Kitzman 1997, ref 101)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Children born to primiparous women who were either teenagers, unmarried, or of low socioeconomic status (Olds 1988, ref 50)</li> <li>• Families with low socioeconomic status expecting their first child, no complications during pregnancy, inner-city location (Seitz 1985, ref 53)</li> </ul>
Mothers' use of public assistance (12-48 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Black teenage mothers of low socio-economic status with term infants (Field 1982, ref 42)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Children born to primiparous women who were either teenagers, unmarried, or of low socioeconomic status (Olds 1988, ref 50)</li> <li>• Parents of low birthweight, premature infants (Brooks-Gunn 1994, ref 127)</li> </ul>
Mothers employment (12-46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Black teenage mothers of low socio-economic status with term infants (Field 1982, ref 42)</li> <li>• Parents of low birthweight, premature infants (Brooks-Gunn 1994, ref 127)</li> </ul>
	<p>Non-significant</p> <ul style="list-style-type: none"> <li>• Children born to primiparous women who were either teenagers, unmarried, or of low socioeconomic status (Olds 1988, ref 50)</li> </ul>
<b>When could be the best time for the intervention, program, or message delivery to occur?</b>	
Temperament: Carey Infant Temperament Scale (4-16 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Bi-weekly for first 6 months postpartum (evaluation at 4 and 8 months) (significant at 4 months, not 8 months) (Field 1982, ref 42)</li> <li>• Mean of 9 visits during pregnancy OR 23 antenatal and postnatal visits (evaluation at 6 months) (Olds 1986, ref 48)</li> <li>• Bi-weekly for first 4 months postpartum, monthly thereafter (30 mins per visit) (evaluation at 4 and 8 months) (reports 8 month evaluation in table) (Field 1980, 90)</li> </ul>

	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>From end of pregnancy for 6 months (mean: 11 visits, range 5-10) (time point NR) (Barth 1988, ref 46)</li> <li>1 visit per week (0-4 months), 1 visit per 2 weeks (4-9 months), 1 visit per month (9-12 months) (1-2 hours duration) (evaluation at 4 and 16 months) (Barrera 1986, ref 58)</li> </ul>
Child cognitive development: Bayley Scale of Mental Development (9 to 24 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>9 visits from 7 months pregnant to first 3 years of infant's life (minimum 1 hour per visit) (evaluation at 24 and 36 months) (reports 24 months in table, and assumed as time point) (Gutelius 1977, reported as 76 in text/figure and 35 in table)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>Mean 9 visits during pregnancy OR 23 antenatal and postpartum visits (evaluation at 36 and 48 months) (evaluation at 12 months reported in Table) (Olds 1986, ref 48)</li> <li>Monthly visits for 2 years (evaluation at 18 months) (Thompson 1982, ref 79)</li> <li>3 antenatal visits, 5 postnatal visits (evaluation at 9 months) (Infante-Rivard 1989, ref 87)</li> <li>Mean antenatal visits 7 (range 0-18), mean visits 0-24 months postpartum 26 (0-71) (evaluation at 24 months) (Kitzman 1997, ref 101)</li> <li>Hourly visits with 2 visits before birth, then bi-weekly until 18 months (evaluation at 6, 12, 18 months) (Black 1994, ref 125)</li> <li>Weekly home visits for a year (mean, SD: 19.2, 11.5) (mean duration just &lt; 1 hour) (evaluation assumed to be at 18 months) (Black 1995, ref 126)</li> <li>10, 1 hour visits (evaluation at 9, 18, 36, 48 months) (reports 18 months in table, and assumed as time point) (Chapman 1984, ref 131)</li> </ul>
Child motor development: Bayley Scale of Motor Development (9 to 18 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>3 antenatal visits, 5 postnatal visits (evaluation at 9 months) (Infante-Rivard, 87)</li> <li>Hourly visits with 2 visits before birth, then bi-weekly until 18 months (evaluation at 6, 12, 18 months) (Black 1994, ref 125)</li> <li>Weekly home visits for a year (mean, SD: 19.2, 11.5) (mean duration just &lt; 1 hour) (evaluation assumed to be at 18 months) (Black 1995, ref 126)</li> <li>10, 1 hour visits (evaluation at 9, 18, 36, 48 months) (reports 18 months in table, and assumed as time point) (Chapman 1984, ref 131)</li> </ul>
Child cognitive development: Stanford-Binet IQ scores (12 to 48 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>9 visits from 7 months pregnant to first 3 years of infant's life (minimum 1 hour per visit) (evaluation at 24 and 36 months) (reports 36 months in table, and assumed as time point) (Gutelius 1977, reported as 76 in text/figure and 35 in table)</li> <li>Mean of 3 visits per month in the first year, and mean of 1.5 visits per month in second and third years (evaluation at 36 months) (Casey 1994/Brooks-Gunn, ref 130/67)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>Mean 9 visits during pregnancy OR 23 antenatal and postpartum visits (evaluation at 36 and 48 months) (evaluation at 12, 24, 36, 48 months reported in Table) (Olds 1994, ref 82)</li> <li>Monthly visits for 2 years (evaluation at 30 months) (Thompson 1982, ref 79)</li> <li>10, 1 hour visits (evaluation at 9, 18, 36, 48 months) (reports 36 and 48 months in table, and assumed as time point) (Chapman 1984, ref 131)</li> </ul>
Child physical development: weight (up to 48 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>Weekly home visits for a year (mean, SD: 19.2, 11.5) (mean duration just &lt; 1 hour) (unclear time-point – 18 months) (Black 1995, ref 126)</li> <li>10, 1 hour visits (evaluation at 9, 18, 36, 48 months) (reports 36 and 48 months in table) (Chapman 1984, ref 131)</li> <li>Mean of 3 visits per month in the first year, and mean of 1.5 visits per month in second and third years (evaluation time point NR) (Casey 1994/IHDP 1990, ref 130/69)</li> </ul>
Child physical development: height (up to 48 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>Weekly home visits for a year (mean, SD: 19.2, 11.5) (mean duration just</li> </ul>

	<ul style="list-style-type: none"> <li>&lt; 1 hour) (unclear time-point – 18 months) (Black 1995, ref 126)</li> <li>• 10, 1 hour visits (evaluation at 9, 18, 36, 48 months) (reports 36 and 48 months in table) (Chapman 1984, ref 131)</li> <li>• Mean of 3 visits per month in the first year, and mean of 1.5 visits per month in second and third years (evaluation time point NR) (Casey 1994/IHDP 1990, ref 130/69)</li> </ul>
Sleeping difficulties (6-12 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• 9 visits from 7 months pregnant to first 3 years of infant’s life (minimum 1 hour per visit) (evaluation at 1 year) (reports 24 months in table, and assumed as time point) (Gutelius 1977, ref 35)</li> <li>• 1 visit (Kerr 1997, ref 150)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Mean of 9 visits during pregnancy OR 23 antenatal and postnatal visits (evaluation at 6 months) (Olds 1986, ref 48)</li> <li>• Mean number of visits 5.5 (range: 1-3) (evaluation at 6 months) (Weir 1988, ref 172)</li> </ul>
Uptake of preventive health services: immunisation (6 months to 5 years)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• 10 visits in first 2 years (time-point for evaluation NR) (Hardy 1989, ref 47)</li> <li>• Antenatal plus 4 visits (1-6 weeks), 5 visits (6 weeks to 15 months) OR 7 visits (6 weeks to 6 months), 3 visits (6 weeks to 15 months) (evaluation at 8 weeks, and 6, 12, 18 months; time-point of measurement for outcome NR) (Larson 1980, ref 57)</li> <li>• Monthly visits during first year of child’s life (first birthday) (Johnson 1993, ref 52)</li> <li>• 3 antenatal visits, 5 postnatal visits (evaluation at 9 months: non-significant for diphtheria, significant for MMR) (Infante-Rivard 1989, ref 87)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Approximately 2 per family (second DPT and polio immunisations) (Barkauskas 1983, ref 38)</li> <li>• 1 home visit per week OR 1 home visit plus parent group every 2 weeks (all immunisations) (Dawson 1989, ref 71)</li> <li>• Mean antenatal visits 7 (range 0-18), mean visits 0-24 months postpartum 26 (0-71) (evaluation at 24 months, % up to date) (Kitzman 1997, ref 101)</li> <li>• Monthly visits (evaluation at 6, 12, and 24 months) (Barker 1994, ref 123)</li> <li>• Not specified (time-point of measurement NR) (Gokcay 1993, 138)</li> </ul>
Uptake of preventive health services (excluding immunisation) (6 months to 5 years)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Approximately 2 per family (well child visits %, time-point of measurement NR) (Barkauskas 1983, ref 38)</li> <li>• Antenatal plus 4 visits (1-6 weeks), 5 visits (6 weeks to 15 months) OR 7 visits (6 weeks to 6 months), 3 visits (6 weeks to 15 months) (evaluation at 8 weeks, and 6, 12, 18 months; well care visits non-significant at 6, 12, and 18 months) (Larson 1980, ref 57)</li> <li>• Not specified (infants; and 1-5 years olds receiving check-ups) (Gokcay 1993, 138)</li> </ul>
Uptake of acute-care child health services: hospital admission (excluding intentional or unintentional injury) (9-46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• 10 visits in first 2 years (time-point for evaluation NR) (Hardy 1989, ref 47)</li> <li>• Monthly visits (evaluation at 12 and 36 months) (Barker 1988, ref 122)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Mean 9 visits during pregnancy OR 23 antenatal and postpartum visits (evaluation at 36 and 48 months) (evaluation at 34 and 46 months) (Olds 1994, ref 82)</li> <li>• 9 visits in first 3 months of life (evaluation at 12 months) (Siegel 1980, ref 75)</li> <li>• Monthly visits during first year of child’s life (time-point of measurement NR) (Johnson 1993, ref 62)</li> <li>• 3 antenatal visits, 5 postnatal visits (evaluation at 9 months) (Infante-Rivard 1989, ref 87)</li> </ul>

	<ul style="list-style-type: none"> <li>Monthly visits (evaluation at 12, 24 and 36 months) (Barker 1994, ref 123)</li> </ul>
Uptake of acute-care child health services: Use of emergency medical services (up to 46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>10 visits in first 2 years (time-point for evaluation NR) (Hardy 1989, ref 47)</li> <li>Mean 9 visits during pregnancy OR 23 antenatal and postpartum visits (evaluation at 36 and 48 months) (evaluation at 34 and 46 months) (Olds 1994, ref 82)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>From end of pregnancy for 6 months, mean number of visits: 11 (range 5-20) (time point of measurement NR) (Barth 1991, ref 70)</li> <li>Antenatal plus 4 visits (1-6 weeks), 5 visits (6 weeks to 15 months) OR 7 visits (6 weeks to 6 months), 3 visits (6 weeks to 15 months) (evaluation at 8 weeks, and 6, 12, 18 months; time-point of measurement NR) (Larson 1980, ref 57)</li> <li>9 visits in first 3 months of life (evaluation at 12 months) (Siegel 1980, ref 75)</li> </ul>
Home environment: HOME Inventory (maternal child interaction) (6 weeks to 36 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>Antenatal plus 4 visits (1-6 weeks), 5 visits (6 weeks to 15 months) OR 7 visits (6 weeks to 6 months), 3 visits (6 weeks to 15 months) (evaluation at 8 weeks, and 6, 12, 18 months; significant at every time points) (Larson 1980, ref 57)</li> <li>1 visit per week (0-4 months), 1 visit per 2 weeks (4-9 months), 1 visit per month (9-12 months) (1-2 hours duration) (evaluation at 4 and 16 months) (Barrera 1986, ref 58)</li> <li>Bi-weekly for first 4 months postpartum, monthly thereafter (30 mins per visit) (evaluation at 8 months) (Field 1980, 90)</li> <li>Mean antenatal visits 7 (range 0-18), mean visits 0-24 months postpartum 26 (0-71) (evaluation at 24 months) (Kitzman 1997, ref 101)</li> <li>Weekly home visits for a year (mean, SD: 19.2, 11.5) (mean duration just &lt; 1 hour) (evaluation assumed to be at 18 months) (Black 1995, ref 126)</li> <li>Weekly sessions of 1 hour (evaluation at 0-3 years, and 4+ years, both significant) (Davis 1998, ref 133)</li> <li>Dependent upon need (evaluation at 13-16 months) (Huxley 1992, ref 145)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>Bi-weekly for first 6 months postpartum (evaluation at 4 and 8 months) (evaluation at 4, 8, 12, 24 months; not-significant at 24 months in table) (Field 1982, ref 42)</li> <li>3 antenatal visits, 5 postnatal visits (evaluation at 9 months) (Infante-Rivard 1989, ref 87)</li> <li>1 visit per week for first 3 years (evaluation at 6, 12, 18 and 30 months; non-significant at every time point) (Wasik 1990, ref 88)</li> <li>Hourly visits with 2 visits before birth, then bi-weekly until 18 months (evaluation at 18 months) (Black 1994, ref 125)</li> <li>1 visit per week in year 1; bi-weekly visits in years 2 and 3 (evaluation at 4, 8, 12, 18, 24, 30 and 36 months; presents 36 months in table) (Casey 1994, ref 130)</li> </ul>
Prevention of unintentional injury in childhood: unintentional injuries (up to 48 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>Mean 9 visits during pregnancy OR 23 antenatal and postpartum visits (evaluation at 36 and 48 months) (evaluation at 25-50 months reported in table) (Olds 1994, ref 82)</li> <li>Antenatal plus 4 visits (1-6 weeks), 5 visits (6 weeks to 15 months) OR 7 visits (6 weeks to 6 months), 3 visits (6 weeks to 15 months) (evaluation at 8 weeks, and 6, 12, 18 months; time-point of measurement for outcome NR) (Larson 1980, ref 57)</li> <li>Mean antenatal visits 7 (range 0-18), mean visits 0-24 months postpartum 26 (0-71) (evaluation at 24 months) (Kitzman 1997, ref 101)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>9 visits from 7 months pregnant to first 3 years of infant's life (minimum 1 hour per visit) (evaluation at 24 and 36 months) (reports 36 months in table, and assumed as time point) (Gutelius 1977, ref 35)</li> </ul>

	<ul style="list-style-type: none"> <li>• 10 visits in first 2 years (time-point for evaluation NR) (Hardy 1989, ref 47)</li> <li>• Monthly visits during first year of child's life (time-point of measurement NR) (Johnson 1993, ref 52)</li> </ul>
Family size (1-10 years)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Bi-weekly for first 6 months postpartum (evaluation at 12 months) (Field 1982, ref 42)</li> <li>• Mean antenatal visits 7 (range 0-18), mean visits 0-24 months postpartum 26 (0-71) (evaluation at 24 months) (Kitzman 1997, ref 101)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Mean of 9 visits during pregnancy OR 23 antenatal and postnatal visits (evaluation at 22 months (2 years)) (Olds 1988, ref 50)</li> <li>• Mean number of visits from pregnancy to 30 months postpartum: 25 (evaluation at 10 years post-intervention) (Seitz 1985, ref 53)</li> </ul>
Mothers' use of public assistance (12-48 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Bi-weekly for first 6 months postpartum (evaluation at 12 and 24 months) (unclear which time-point in presented in the table) (Field 1982, ref 42)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Mean of 9 visits during pregnancy OR 23 antenatal and postnatal visits (evaluation at 48 months) (Olds 1988, ref 50)</li> <li>• Mean of 3 visits per month in the first year, and mean of 1.5 visits per month in second and third years (evaluation at 36 months (unclear)) (Brooks-Gunn 1994, ref 127)</li> </ul>
Mothers employment (12-46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Bi-weekly for first 6 months postpartum (evaluation at 12 and 24 months) (unclear which time-point in presented in the table) (Field 1982, ref 42)</li> <li>• Mean of 3 visits per month in the first year, and mean of 1.5 visits per month in second and third years (evaluation at 36 months (unclear)) (Brooks-Gunn 1994, ref 127)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Mean of 9 visits during pregnancy OR 23 antenatal and postnatal visits (evaluation at 46 months) (Olds 1988, ref 50)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b>	
Temperament: Carey Infant Temperament Scale (4-16 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Teach mothers to give age-appropriate stimulation to their infants; facilitate mother-child interaction (Field 1982, ref 42)</li> <li>• Parent education, enhancement of women's informal support systems, and linkages with community services (Olds 1986, ref 48)</li> <li>• Education to mothers on child developmental milestones and rearing practices; teach age appropriate stimulation to their infants; facilitate mother-child interaction (Field 1980, ref 90)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Goal setting and attainment strategies (Barth 1988, ref 46)</li> <li>• Improve child's developmental level of functioning and quality of parent child interaction (Barrera 1986, ref 58)</li> </ul>
Child cognitive development: Bayley Scale of Mental Development (9 to 24 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Counselling and anticipatory guidance; cognitive stimulation (Gutelius 1977, reported as 76 in text/figure and 35 in table)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Parent education, enhancement of the women's informal support systems, linkage with community services (Olds 1986, ref 48)</li> <li>• Establish positive parent-child relationships to foster development (Thompson 1982, ref 79)</li> <li>• Counselling, teaching child development, health and behaviour (Infante-Rivard 1989, ref 87)</li> <li>• Help women improve their health related behaviours, care of their children and life course development (Kitzman 1997, ref 101)</li> <li>• Provide maternal support, promote parenting, child development,</li> </ul>



	<ul style="list-style-type: none"> <li>• utilisation of resources and advocacy (Black 1994, ref 125)</li> <li>• Provide maternal support, promote parenting, child development, utilisation of resources and advocacy (Black 1995, ref 126)</li> <li>• Teaching module and age appropriate toys (Chapman 1984, ref 131)</li> </ul>
Child motor development: Bayley Scale of Motor Development (9 to 18 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Counselling, teaching child development, health and behaviour (Infante-Rivard 1989, ref 87)</li> <li>• Provide maternal support, promote parenting, child development, utilisation of resources and advocacy (Black 1994, ref 125)</li> <li>• Provide maternal support, promote parenting, child development, utilisation of resources and advocacy (Black 1995, ref 126)</li> <li>• Teaching module and age appropriate toys (Chapman 1984, ref 131)</li> </ul>
Child cognitive development: Stanford-Binet IQ scores (12 to 48 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Counselling and anticipatory guidance; cognitive stimulation (Gutelius 1977, reported as 76 in text/figure and 35 in table)</li> <li>• Information of child health and development, social support and strategies on management of self-identified problems (Casey 1994/Brooks-Gunn, ref 130/67)</li> </ul>
	<p>Non-significant</p> <ul style="list-style-type: none"> <li>• Parent education, enhancement of the women's informal support systems, linkage with community services (Olds 1994, ref 82)</li> <li>• Establish positive parent-child relationships to foster development (Thompson 1982, ref 79)</li> <li>• Teaching module and age appropriate toys (Chapman 1984, ref 131)</li> </ul>
Child physical development: weight (up to 48 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Provide maternal support, promote parenting, child development, utilisation of resources and advocacy (Black 1995, ref 126)</li> <li>• Teaching module and age appropriate toys (Chapman 1984, ref 131)</li> <li>• Information on child health and development, social support and strategies on management of self-identified problems (Casey 1994/IHDP 1990, ref 130/69)</li> </ul>
Child physical development: height (up to 48 months)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Provide maternal support, promote parenting, child development, utilisation of resources and advocacy (Black 1995, ref 126)</li> <li>• Teaching module and age appropriate toys (Chapman 1984, ref 131)</li> <li>• Information of child health and development, social support and strategies on management of self-identified problems (Casey 1994/IHDP 1990, ref 130/69)</li> </ul>
Sleeping difficulties (6-12 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Counselling and anticipatory guidance; cognitive stimulation (Gutelius 1977, ref 35)</li> <li>• Verbal and written information and advice about sleeping and settling behaviour (time-point of evaluation NR) (Kerr 1997, ref 150)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Parent education, enhancement of women's informal support systems, and linkages with community services (Olds 1986, ref 48)</li> <li>• Health visitors trained in behavioural techniques appropriate to sleeping patterns (Weir 1988, ref 172)</li> </ul>
Uptake of preventive health services: immunisation (6 months to 5 years)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Encourage uptake of services (Hardy 1989, ref 47)</li> <li>• Counselling and advice on general caretaking, mother-infant interaction, social status and child development (Larson 1980, ref 57)</li> <li>• Child development program with modules on educational, language and cognitive development (Johnson 1993, ref 52)</li> <li>• Counselling, teaching child development, health and behaviour (Infante-Rivard 1989, ref 87)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Routine public health nurse service (Barkauskas 1983, ref 38)</li> <li>• Emotional support, concrete help, information, enhancing social networks (Dawson 1989, ref 71)</li> <li>• Help women improve their health related behaviours, care of their</li> </ul>

	<p>children and life course development (Kitzman 1997, ref 101)</p> <ul style="list-style-type: none"> <li>• Developmental tasks for reading and language, nutrition advice (Barker 1994, ref 123)</li> <li>• Encourage uptake of services (Gokcay 1993, 138)</li> </ul>
Uptake of preventive health services (excluding immunisation) (6 months to 5 years)	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Routine public health nurse service (Barkauskas 1983, ref 38)</li> <li>• Counselling and advice on general caretaking, mother-infant interaction, social status and child development (Larson 1980, ref 57)</li> <li>• Encourage uptake of services (Gokcay 1993, 138)</li> </ul>
Uptake of acute-care child health services: hospital admission (excluding intentional or unintentional injury) (9-46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Encourage uptake of services (Hardy 1989, ref 47)</li> <li>• Developmental tasks for reading and language, and nutrition advice (Barker 1988, ref 122)</li> </ul> <p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Parent education, enhancement of the women's informal support systems, linkage with community services (Olds 1994, ref 82)</li> <li>• Promote mothers' involvement with families and emotional support (Siegel 1980, ref 75)</li> <li>• Child development program with modules on educational, language and cognitive development (Johnson 1993, ref 62)</li> <li>• Counselling, teaching child development, health and behaviour (Infante-Rivard 1989, ref 87)</li> <li>• Developmental tasks for reading and language, and nutrition advice (Barker 1994, ref 123)</li> </ul>
Uptake of acute-care child health services: Use of emergency medical services (up to 46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Encourage uptake of services (Hardy 1989, ref 47)</li> <li>• Parent education, enhancement of the women's informal support systems, linkage with community services (Olds 1994, ref 82)</li> </ul> <p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Goal setting and attainment strategies (Barth 1991, ref 70)</li> <li>• Counselling and advice on general caretaking, mother-infant interaction, social status and child development (Larson 1980, ref 57)</li> <li>• Promote mothers' involvement with families and emotional support (Siegel 1980, ref 75)</li> </ul>
Home environment: HOME Inventory (maternal child interaction) (6 weeks to 36 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Counselling and advice on general caretaking, mother-infant interaction, social status and child development (Larson 1980, ref 57)</li> <li>• Improve child's developmental level of functioning and quality of parent child interaction (Barrera 1986, ref 58)</li> <li>• Education of mothers on child developmental milestones and rearing practices; teach age appropriate stimulation to their infants; facilitate mother-child interaction (Field 1980, ref 90)</li> <li>• Help women improve their health related behaviours, care of their children and life course development (Kitzman 1997, ref 101)</li> <li>• Provide maternal support, promote parenting, child development, utilisation of resources and advocacy (Black 1995, ref 126)</li> <li>• Enable parents to explore and clarify issues and problems and discuss strategies (Davis 1998, ref 133)</li> <li>• Prevention of parent dysfunction, education in maternal and child health (Huxley 1992, ref 145)</li> </ul> <p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Teach mothers to give age-appropriate stimulation to their infants; facilitate mother-child interaction (Field 1982, ref 42)</li> <li>• Counselling, teaching child development, health and behaviour (Infante-Rivard 1989, ref 87)</li> <li>• Promote parent problem-solving strategies (Wasik 1990, ref 88)</li> <li>• Provide maternal support, promote parenting, child development, utilisation of resources and advocacy (Black 1994, ref 125)</li> <li>• Cognitive, language and social development via a program of games and activities (Casey 1994, ref 130)</li> </ul>
Prevention of unintentional injury in	<p>Significant result</p>

childhood: unintentional injuries (up to 48 months)	<ul style="list-style-type: none"> <li>• Parent education, enhancement of the women’s informal support systems, linkage with community services (Olds 1994, ref 82)</li> <li>• Counselling and advice on general caretaking, mother-infant interaction, social status and child development (Larson 1980, ref 57)</li> <li>• Help women improve their health related behaviours, care of their children and life course development (Kitzman 1997, ref 101)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Counselling and anticipatory guidance; cognitive stimulation (Gutelius 1977, ref 35)</li> <li>• Encourage uptake of services (Hardy 1989, ref 47)</li> <li>• Child development program with modules on educational, language and cognitive development (Johnson 1993, ref 52)</li> </ul>
Family size (1-10 years)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Infant stimulation, including caretaking, sensorimotor and mother-infant interaction exercises (Field 1982, ref 42)</li> <li>• Help women improve their health related behaviours, care of their children and life course development (Kitzman 1997, ref 101)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Parent education for enhancement of women’s informal support systems and linkage with community services (Olds 1988, ref 50)</li> <li>• Solve immediate problems, reduce physical dangers, obtain more adequate food or housing, discuss long-term problems or decisions (Seitz 1985, ref 53)</li> </ul>
Mothers’ use of public assistance (12-48 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Infant stimulation, including caretaking, sensorimotor and mother-infant interaction exercises (Field 1982, ref 42)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Parent education for enhancement of women’s informal support systems and linkage with community services Olds 1988, ref 50)</li> <li>• Information of child health and development, social support and strategies on management of self-identified problems (Brooks-Gunn 1994, ref 130/67)</li> </ul>
Mothers employment (12-46 months)	<p>Significant result</p> <ul style="list-style-type: none"> <li>• Infant stimulation, including caretaking, sensorimotor and mother-infant interaction exercises (Field 1982, ref 42)</li> <li>• Information of child health and development, social support and strategies on management of self-identified problems (Brooks-Gunn 1994, ref 130/67)</li> </ul>
	<p>Non-significant result</p> <ul style="list-style-type: none"> <li>• Parent education for enhancement of women’s informal support systems and linkage with community services (Olds 1988, ref 50)</li> </ul>
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; ES: effect size; HOME: Home Observation for Measurement of the Environment; IQ: intelligence quotient; N: number; NCAST: Nursing Child Assessment Satellite Training; NR: not reported; NS: not significant; OR: odds ratio; P: P value; RCT: randomised controlled trial; ref: reference in Elkan 2000; ROBIS: Risk of Bias in Systematic Reviews; SS: statistically significant; UK: United Kingdom; USA: United States of America

**Table 3: Evidence table for Peacock 2013<sup>2</sup>**

<b>Review ID</b>	Peacock 2013
<b>Search date</b>	1990 to May 2012
<b>Review method</b>	Narrative synthesis (“Due to the diversity of the outcomes included in the studies, types of statistical analysis conducted, and measures of associations reported, calculation of overall summary estimates (i.e., meta-analysis) was not possible”)
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	21 included studies (characteristics presented for 20 RCTs): 19 relevant studies (RCTs)
<b>No. participants in relevant studies</b>	6,723
<b>Location/setting</b>	Bangladesh: 1 RCT; Chile: 1 RCT; Ireland: 2 RCTs; Jamaica: 1 RCT; South Africa: 1 RCT; UK: 1 RCT; USA: 12 RCTs
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 7/11 (‘moderate’ quality)
<b>Quality of relevant studies</b>	Only studies with a score of 13 or higher out of a possible 15 on the validity tool were included in the data extraction (6 RCTs: 15/15; 13 RCTs: 13-14/15)
<b>Review objective</b>	To assess the effectiveness of paraprofessional home-visiting programs on developmental and health outcomes of young children (from birth to 6 years of age) from socially high-risk families
<b>Review eligibility criteria</b>	<u>Designs</u> : studies incorporating a control group, pre-test post-test design or quasi-experimental design were included; <u>participants</u> : study participants were mothers and/or children (from 0 to 6 years) from socially high-risk families; <u>interventions</u> : studies involving an evaluation of a home visiting program delivered by paraprofessionals were included; <u>outcomes</u> : studies had to include 1 of the following outcomes: birth, perinatal, developmental, health and/or risk for occurrences of child abuse/neglect; <u>other</u> : publication date on or after 1990; written in English; only studies scoring 13 or higher on the validity tool were included in the data extraction
<b>Participant population</b>	Disadvantaged families, including: at risk pregnant women/adolescents or at-risk mothers/families (8 RCTs), undernourished children or those failing to thrive (4 RCTs), first time mothers (2 RCTs), substance abusing mothers (2 RCTs), low income mothers (1 RCTs), single pregnant adolescents (1 RCT), ‘families’ (1 RCT)
<b>Intervention</b>	Paraprofessional home-visiting programs; intervention frequency ranged from weekly to monthly (where stated); intervention duration ranged from 6 months (including pregnancy) to 3-5 years
<b>Comparator</b>	Standard care (usual services offered in their community)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
Psychomotor and cognitive development	NS (1 RCT, N=90)
	NS (1 RCT, N=343)
	NS (1 RCT, N=78)
	NS difference in cognitive decline (assessed with Bayley) for children in the 12-24 month old group (1 RCT, N=130)
	No effect of a 12 month home visiting intervention on Bayley motor development (1 RCT, N=321)
	No difference in motor development (1 RCT, N=262)
	Children < 12 months in the home visiting groups showed less cognitive decline (assessed with Bayley) than children < 12 months in the control group, although no differences were seen in older children 12 to 24 months old (1 RCT, N=130)

<sup>2</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

	Home-visited children were more likely to score in the normal range of Bayley MDI after 18 months intervention compared with the control group (P<0.05) (1 RCT, N=325)
	Significant improvements after 12 months in Bayley developmental quotient, and locomotor, hand-eye coordination and performance (P<0.01) in the intervention group (home visiting with nutritional supplementation and psychosocial stimulation) compared with the control group and for developmental quotient and all subscales over 2 years (P<0.01); regression analysis indicated that nutritional supplementation enhanced the effects of the home visiting intervention (1 RCT, N=129)
	Improvements in the mental developmental index compared with the control group (P<0.01) (1 RCT, N=321)
	Greater developmental stimulation (assessed by game playing) in the intervention group (P<0.01) (1 RCT, N=262)
	Home-visited children had higher Bayley scores on psychomotor development at 6 months (P=0.04) and 18 months (P=0.01) compared with the control group (1 RCT, N=161)
Language development	NS (1 RCT, N=90)
	NS (1 RCT, N=513)
	NS (1 RCT, N=161)
	Younger and older children in the intervention groups showed less of a decline in language development (P=0.05) on the Receptive/Expressive Emergent Language Scale (1 RCT, N=130)
Physical growth	NS (1 RCT, N=90)
	NS (1 RCT, N=130)
	NS (1 RCT, N=321)
	NS (1 RCT, N=428)
	NS (1 RCT, N=101)
	Effect on low birthweight (more pronounced with earlier antenatal intervention) (1 RCT, N=502)
	Effect on rehabilitating malnutrition (1 RCT, N=788)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<i>Single study results</i>	
Child behaviour	NS (1 RCT, N=78)
	Home visited children scored more favourably on the internalising (P=0.01) and externalising scales (P=0.01) on the Child Behaviour Checklist compared with the control group (1 RCT, N=325)
	Child behaviour tested on 5 9-point scales, with effects seen for response to the examiner (P=0.01), cooperation with test procedures (P=0.005), emotional tone (P=0.03) and vocalisations (P=0.03) with no effect noted for children's activity (1 RCT, N=321)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<i>Single study results</i>	
Up-to-date immunisations	1 year old children in the intervention group were significantly more likely to have received 3 of their primary vaccinations than the control group (1 RCT, N=262)
Hospitalisations, illness or injuries	NS (1 RCT, N=90)
	NS (1 RCT, N=325)
	NS (1 RCT, N=643)
	NS (1 RCT, N=262)
	Children's health scores (frequency of illnesses, injuries and feeding problems) were significantly better in the enhanced home visit group (P=0.02) compared with the unenhanced home visit group and the control group (1 RCT, N=96)
	Length of hospital stay was significantly longer in the intervention group: 14 days versus 7 days in the control group (P<0.05) (1 RCT, N=262)
	Home-visited children had significantly fewer health problems (1 RCT, N=101)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
NR	NR

<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
Maternal depression, partner violence	Not influenced (1 RCT, N=325)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
Child abuse and neglect	NS (1 RCT, N=191)
	NS (1 RCT, N=643)
	Enhanced group (home visiting with a cognitive change component) showed less harsh parenting (P=0.05) and physical abuse compared with home visiting only or no home visiting using the self-report Conflict Tactics Scale; enhanced group mothers were less likely to physically abuse (P<0.05) and less likely to spank/slap their children (P<0.05) (1 RCT, N=96)
	Among non-depressed mothers with moderate to high anxiety, home visiting was associated with decreased rates of substantiated child maltreatment (P<0.05) (1 RCT, N=325)
	Among non-depressed mothers who had high discomfort with trust/dependence, home visiting was associated with increased rates of substantiated maltreatment (1 RCT, N=325)
	No overall effects on CPS records and from self-report, but prevention subgroup (first time mothers < 19 years admitted to the program at < 30 weeks gestation) was less likely to report minor physical aggression over the previous year (P=0.02) and harsh parenting behaviours in the previous week (P=0.02) compared with the control group; the 'psychologically vulnerable' subgroup (with a higher rate of prior substantiated CPS reports) were less likely to report acts of serious maltreatment or neglect compared with the control group at 2 years (P<0.05) (1 RCT, N=1,297)

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CPS: child protective services; MDI: Mental Development Index; N: number; NR: not reported; NS: non-significant; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; UK: United Kingdom; USA: United States of America

**Table 4: Evidence table for Reynolds 2009<sup>3</sup>**

<b>Review ID</b>	Reynolds 2009
<b>Search date</b>	Search dates NR (only studies published/reported between 1990 and 2007 were included)
<b>Review method</b>	Narrative synthesis and ES analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	15 studies of 14 programs included; 14 studies of 13 programs relevant (12 RCTs; 1 quasi-experimental design (assignment by risk level); 1 matched-group design)
<b>No. participants in relevant studies</b>	6,407
<b>Location/setting</b>	Countries NR across all studies; named programs included: Colorado Adolescent Maternity Program; Hawaii Healthy Start 1; Healthy Families Alaska; Healthy Families New York; Hawaii Healthy Start 2; Healthy Families America

<sup>3</sup> green shading indicates results significantly in favour of the intervention

<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 3/11 ('low' quality)
<b>Quality of relevant studies</b>	"Fifteen studies of 14 programs... assessed impacts with methodological rigor"; scores out of 2 were given for program information, implementation quality and research design (based on the amount of information provided)
<b>Review objective</b>	To synthesise research on the effects of maltreatment prevention programs from birth to age 5, asking: to what extent do early childhood interventions prevent child maltreatment? What specific programs are effective in preventing child maltreatment? What are the characteristics of programs that are effective in reducing or preventing maltreatment?
<b>Review eligibility criteria</b>	<u>Designs</u> : studies with an intervention and control group; <u>participants</u> : parents prenatally or with children under the age of 5; <u>interventions</u> : aim of the program was primary prevention, not preventing recidivism of maltreatment; <u>outcomes</u> : abuse or neglect measured primarily by substantiated reports of maltreatment, or involvement in child welfare system, out of home placement, hospital records of maltreatment or parent reports of abuse or neglect (the maltreatment outcomes had to be described and the outcome metric reported for program groups); <u>other</u> : published or reported from 1990 to 2007; published or unpublished; including coverage of program design, content and implementation quality
<b>Participant population</b>	Parents prenatally (in 7 programs for some families) or shortly after birth of the infant (6 programs)
<b>Intervention</b>	Child and/or parent-focused primary prevention interventions that measured actual/substantiated reports of maltreatment (rather than family risk of protective factors associated with maltreatment); all but 1 of the programs intervened beginning prenatally or from birth to age 3 years through home visits (11 studies), parent education classes (1 study), or the provision of health services (2 studies) Programs varied in duration – from approximately 3 months to 60 months or more; most commonly, intervention were 12-24 months, beginning within the first weeks after birth with 15-20 visits in total
<b>Comparator</b>	Varied (not clearly reported for all programs)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

Systems outcomes	
Outcome measure used in the review	Results reported in the review
<b>Pooled results</b>	
Substantiated child maltreatment (follow up at 1 to 17 years)	MD (weighted): -2.9% (control: 9.5%, program: 6.6%); ES: -0.20 SD units (90% CI -0.41, -0.17) Q: 22.23 P=0.03 (12 studies: 9 RCTs, 1 quasi-experimental study, 2 matched group design; N=5,661) (1 matched group design study in infants > 1 year)
<b>Single study results (programs for foster care placement or involvement in child protective services)</b>	
% in foster care	Hawaii Healthy Start 2 ES: 0.31 SD units (90% CI -0.003, 0.026) (1 RCT, N=643)
% in out of home placement	Home Visitation Program ES: -0.10 SD units (90% CI -0.075, 0.143) (1 RCT, N=225)
Parental reports of contact with agency	Early Start ES: -0.06 SD units (90% CI -0.086, 0.055) (1 RCT, N=443)
<b>Single study results (program results for rates of substantiated child maltreatment)</b>	
Substantiated child maltreatment at 1-2 years	Community Infant Program ES: -0.80 SD units (90% CI -0.334, 0.034) (1 matched control group study, N=40)
Substantiated child maltreatment at 2-5 years	Child Parent Enrichment Project ES: 0.03 SD units (90% CI -0.087, 0.099) (1 RCT, N=191)
Substantiated child maltreatment at 2 years	Colorado Adolescent Maternity Program ES: -0.44 SD units (90% CI -0.161, 0.005) (1 RCT, N=171)
Substantiated child maltreatment at 15 years	Nurse-Family Partnership ES: -0.24 SD units (90% CI -0.181, 0.023) (1 RCT, N=300) *Note: highlighted as significant in manuscript table and text, though 90% CI do not indicate this
Substantiated child maltreatment at 3-5 years	Parent Education Program for Teen Mothers ES: -0.64 SD units (90% CI -0.081, -0.020) (1 quasi-experimental study, N=439)
Substantiated child maltreatment at 2 years	Hawaii Healthy Start 1 ES: -0.34 SD units (90% CI -0.089, 0.005) (1 RCT, N=304)
Substantiated child maltreatment at 2 years	Healthy Families Alaska ES: -0.04 SD units (90% CI -0.086, 0.063) (1 RCT, N=325)
Substantiated child maltreatment at 2 years	Healthy Families New York ES: 0.03 SD units (90% CI -0.019, 0.025) (1 RCT, N=1,173)
Substantiated child maltreatment at 3 years	Teen Parents as Teachers plus case management ES: -0.31 SD units (90% CI -0.041, -0.004) (1 RCT, N=353)
	Teen Parents as Teachers no case management ES: -0.08 SD units (90% CI -0.034, 0.012) (1 RCT, N=355)
Substantiated child maltreatment at 3 years	Hawaii Healthy Start 2 ES: -0.13 SD units (90% CI -0.019, 0.011) (1 RCT, N=643)
Substantiated child maltreatment at 3 years	Prenatal and Paediatric Health Services ES: 0.18 SD units (90% CI -0.023, 0.081) (1 RCT, N=314)
<b>Single study results (program results for parent reports of maltreatment)</b>	
Physical abuse	Healthy Families America – Home visits ES: 0.06 SD units (90% CI -0.236, 0.118) (1 RCT, N=61)
	Healthy Families America – Home visits and cognitive component ES: -1.11 SD units (90% CI -0.399, -0.063) (1 RCT, N=62)
Neglect	Hawaii Healthy Start 2 ES: -0.16 SD units (90% CI -0.116, 0.051) (1 RCT, N=643)
	Healthy Families Alaska ES: 0.00 SD units (90% CI -0.076, 0.078) (1 RCT, N=325)
Abuse/neglect	Healthy Families New York ES: -0.08 SD units (90% CI -0.036, 0.016) (1 RCT, N=1,173)
Severe assault	Early Start ES: -0.52 SD units (90% CI -0.116, -0.027) (1 RCT, N=443)

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; ES: effect size; MD: mean difference; N: number; NR: not reported; P: P value; Q: test of homogeneity of the effect size; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SD: standard deviation



**Table 5: Evidence table for Segal 2012<sup>4</sup>**

<b>Review ID</b>	Segal 2012
<b>Search date</b>	Search dates NR ( <i>"The full details our of search strategy and search filters are available from the authors"</i> )
<b>Review method</b>	Narrative synthesis, with development of a program logic model (to assist in understanding the neonate/infant home visiting literature), using descriptive synthesis and statistical analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	52 programs (36 RCTs; 14 nRCT; 2 cohort studies)
<b>No. participants in relevant studies</b>	NR
<b>Location/setting</b>	Australia: 3 programs; Canada: 6 programs; Japan: 1 program; New Zealand: 1 program; Norway: 1 program; Syria: 1 program; UK: 2 programs; USA: 37 programs
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 6/11 ('moderate' quality)
<b>Quality of relevant studies</b>	'Good' quality: 14 programs (27%); 'adequate' quality: 25 programs (48%); 'poor' quality: 13 programs (25%). Risk of bias assessed using criteria development from the Cochrane Handbook, Centre for Reviews and Dissemination's guidelines, and Edgeworth and Carr's criteria specific to child abuse research
<b>Review objective</b>	To gain a new understanding of the home visiting literature for the prevention of child maltreatment by taking a program logic approach that incorporated a theory of change
<b>Review eligibility criteria</b>	<u>Designs</u> : RCT or qRCT with control or comparison group; <u>participants/interventions</u> : home visiting (at least 2 home visits by someone other than a relative), with visits commencing during pregnancy or within 6 months of birth for the purpose of reducing the risk of child maltreatment or related outcome; <u>outcomes</u> : at least 1 quantifiable outcome related to maltreatment or the risk of maltreatment; <u>other</u> : published in English language
<b>Participant population</b>	7 programs exclusively targeted teenage/adolescent parents; 4 programs targeted high-risk families (Kempe Family Stress check-list); 4 programs recruited parents using illicit drugs. Many programs drew their populations from 2-3 risk categories. Most programs (N=23) targeted persons at considerably elevated risk, including current abuse, current drug/alcohol problems/existence of several risk characteristics
<b>Intervention</b>	Home visiting (many used nurses, N=19; or other professionals, such as social workers, N=15, paraprofessionals, N=9, or lay persons, N=6; formal multi-disciplinary team used in 3 programs; 20 programs used > 1 discipline group on their team for home visit or training/support) Program components identified included: education/training/information (N=46), emotional support (N=43), referral and linking to services (N=38), modelling/role model (N=19), problem solving (N=16), counselling/therapy (N=16), case management (N=5), provision of goods and services (N=5), responsive clinical services (N=2), provision of child care (N=2) Program durations/intensities varied: 25 programs commenced in pregnancy (all others began after birth); child age at exit from the program varied from 1 month to 5 years; mean number of visits ranged from 2 to 41; length of visits ranged from 20 minutes to 4 hours
<b>Comparator</b>	NR
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<sup>4</sup> green shading indicates results significantly in favour of the intervention

<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Neonatal deaths or injuries	Significantly fewer neonatal deaths or injuries (Quinlivan 2003)
Deaths from birth to age 9	Significantly fewer deaths from birth to age 9 (Kitzman 1997)
Injuries	Significantly fewer injuries (Bugental 2009)
Injuries and ingestions	Significantly fewer injuries and ingestions (Kitzman 1997 (1 <sup>st</sup> 2 years); Olds 1997 (25-50 months follow up))
Safety in child home environment	Significantly improved safety in child home environment (Margolis 2001)
Accident rate at 6 and 12 months and 6 and 18 months	Lower accident rate at 6 and 12 months, but not at 6 and 18 months (Bugental 2009; Larson 1980)
Accidents	No differences in accidents (Dawson 1989)
Children treated for injury	No difference in number of children treated for injury (Wagner 1999; Wiggins 2004)
Health problems	No difference in health problems (Nora 2003; Steel O'Connor 2003)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Quality of the home environment (HOME Inventory)	Significantly fewer extremely poor total HOME scores (Duggan 2007) Significantly better HOME scale scores (Kitzman 1997; Love 2005; Margolis 2001) No difference in HOME scores (Barlow 2007; Infante-Rivard 1989; Marcenko 1994; Olds 1997 (at 25-50 months); Olds 2002; St. Pierre 1999; Wagner 1999) No difference in HOME subscale scores (Duggan 2007) No difference in HOME subscales except for improvement in appropriate play materials (Norr 2003)
Sensitivity (1 study: Maternal Child Interaction-CARE Index; 1 study: NR)	Significantly increased sensitivity to babies (Barlow 2007) Significantly more sensitive and responsive interaction (Olds 2002)
Maternal-infant interaction	No difference in maternal-infant interaction: 3 attachment measures (Siegel 1980)
PCCTS	Significant improvements on the PCCTS for corporal punishment (Bugental 2009)
PCI score	Improved PCI score (Love 2005 – home based only) No difference in PCI score (Love 2005 – mixed (home and centre-based); St. Pierre 1999)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Parenting stress (PSI)	Significantly improved total scores on the PSI at 6 and 12 months for the mother and at 12 months for the father (Kaaresen 2006) Significantly improved child domain scores on the PSI at 6 months for the mother and 12 months for the father (Kaaresen 2006) Significantly improved parent domain scores on the PSI at 6 months for the mother and 12 months for the father (Kaaresen 2006) Significantly improved total scores and the Parent-Child Dysfunction Interaction subscale on the PSI at 8 weeks (Keefe 2006) No differences in PSI scores (Duggan 2007) No differences on the other 2 subscales of the PSI (parental distress and difficult child) at 8 weeks (Keefe 2006)
Life stresses	No differences in life stresses (Fergusson 2005)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Parenting practices	Significant increase in non-punitive parenting (Fergusson 2005)
Domestic violence	Significant reduction in any domestic violence (but not when program delivered by paraprofessionals) (Olds 2002) No difference in exposure to significant physical domestic violence (Johnston 2006)

Substance use	Significantly less substance use (Kitzman 1997) No differences in drug use (Bartu 2006; Barlow 2006) No differences in substance abuse (Duggan 2007; Fergusson 2005; Johnston 2006; Margolis 2001; Olds 1997 (at 15 years follow up)) No differences in smoking (Johnston 2006) No differences in narcotic, alcohol or marijuana use (Nair 2003) No differences in marijuana or alcohol use (Olds 2002)
Birth mother relinquishing her role	No differences in birth mother relinquishing her role (Duggan 2007)
Injury control behaviours	Significant improvement in injury control behaviours (Johnston 2006)
Future pregnancies and births	Increase in time to 2 <sup>nd</sup> birth (Black 2006) Improvement for repeat pregnancies (Field 1982) 2 <sup>nd</sup> pregnancy and subsequent live births – improved (Kitzman 1997) Increase in timing of next births (but not when program delivered by paraprofessionals) (Olds 2002) No difference in next pregnancy and birth (Dawson 1989; Olds 1997 (at 15 years follow up)) No differences in timing of next pregnancy (Fergusson 2005) No difference in repeat pregnancy rate (Norr 2003; Stevens-Simon 2001)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Family functioning	No differences in family functioning (Fergusson 2005)
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Maltreatment and/or neglect	Significantly reduced maltreatment and neglect (Christensen 1984; Hardy 1989) Significantly reduced severe physical assault (Fergusson 2005) Significantly reduced maltreatment and neglect incidents (Lutzker 1984) Significantly reduced substantiated instances of maltreatment and neglect (Lutzker 1984) Significantly reduced substantiated instances of maltreatment and neglect at 15 years follow up (Olds 1997) Significantly fewer opened cases of child maltreatment or neglect (Wagner 1999) No differences in physical maltreatment (Bugental 2009) No differences in neglect (Duggan 2007) No differences in substantiated maltreatment and neglect (Gessner 2008; Margolis 2001) No difference in incidence of maltreatment and/or neglect reports (Dawson 1989; Muslow 1996; Olds 1997; Siegel 1980) No differences in maltreatment (physical abuse, neglect, abandonment) (Stevens-Simon 2001) No difference in child maltreatment (Wagner 1999)
Foster care	Significantly reduced out-of-home placement or foster care (Christensen 1984) Significantly reduced non-voluntary foster care placement (Quinlivan 2003) No difference in children removed from home or placed in out-of-home care (Barlow 2007; Marcenko 1994) No difference in formal or informal foster care (Norr 2003)
Child protection	No differences in child protection register or care proceedings (Barlow 2007) No difference in CPS reports (Duggan 2007) No difference in rates of agency contact for child maltreatment or neglect (Fergusson 2005) No difference in CPS referrals (Gessner 2008)

Hospitalisation/medical treatment	Significantly fewer hospital attendances for injury and/or ingestion (Fergusson 2005; Kitzman 1997) Significantly less inpatient care (Hardy 1989) Significantly fewer clinic or emergency department visits for falls or injuries (Hardy 1989) Significantly fewer emergency visits at 25-50 months (Olds 1997)
	No difference in hospitalisation (Barlow 2007 (6 months); Dawson 1989; Infante-Rivard 1989; Steel O'Connor 2003) No difference in seeking medical treatment (Bashour 2008) No difference in hospitalisation and emergency department visits (Duggan 2007; Kitzman 1997; Margolis 2001; Siegel 1980) No difference in rate of emergency department visits (Larson 1980 at 18 months; Steel O'Connor 2003)

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CPS: child protection score; HOME: Home Observation Measurement of the Environment; N: number; NR: not reported; nRCT: non-randomised controlled trial; PCCTS: Parent Child Conflict Tactics Scale; PCI: Parent-Child Interaction; PSI: Parenting Stress Index; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; UK: United Kingdom; USA: United States of America

**Table 6: Evidence table for Wade 1999<sup>5</sup>**

<b>Review ID</b>	Wade 1999
<b>Search date</b>	1966 to December 1998
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	21 methodologically 'strong' or 'moderate' studies were included; 17 relevant studies (7 RCTs, 9 CCTs, 1 'cohort analytic' study)
<b>No. participants in relevant studies</b>	N>2,758 for 16 of the 17 relevant studies, N=NR for 1 study
<b>Location/setting</b>	Australia: 1 study; Bangladesh: 1 study; Canada: 1 study; Colombia: 1 study; New Zealand: 1 study; USA: 12 studies
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 9/11 ('high' quality)
<b>Quality of relevant studies</b>	Global rating: 13 studies: 'moderate'; 4 studies: 'strong'
<b>Review objective</b>	To assess the evidence for the effectiveness of peer/paraprofessional 1:1 interventions targeted towards mothers (parents) of 0 to 6 year old children in promoting positive maternal (parental) and/or child health and developmental outcomes
<b>Review eligibility criteria</b>	<u>Designs</u> : prospective primary studies with a comparison group or an established qualitative methodology were included; <u>participants</u> : parents of 0 to 6 year old children; <u>interventions</u> : 1:1 interventions to support parents in promoting child health/development, by peers/paraprofessionals were included; <u>outcomes</u> : studies reporting on parent and/or child health/developmental outcomes or costs were included
<b>Participant population</b>	Almost all studies targeted high risk populations – i.e. low income, with additional past or current medical, behavioural or socio-environmental risk factors (e.g. violence, social isolation, substance abuse, risk of abuse, risk of developmental problems, potential or actual malnutrition/failure to thrive)
<b>Intervention</b>	Peer/paraprofessional home visiting interventions; duration of the multifaceted interventions (11 studies) ranged from 12 weeks to 5 years; durations of the interventions where the peer/paraprofessional was the only intervenor (6 studies) ranged from 3 months to 2 years
<b>Comparator</b>	Standard care (majority)

<sup>5</sup> green shading indicates results significantly in favour of the intervention

Outcome domain	
Infant social and emotional wellbeing or development up to one year of age	
Outcome measure used in the review	Result reported in the review
<b>Single study results</b>	
Carey Infant Temperament	E<C immediately post-intervention (P<0.001) (1 RCT, N=60) [peer/paraprofessional interventions only] E=C at 8 months (1 CCR, N=120) [peer/paraprofessional interventions only]
<b>Development for the infant, as a child, and up to 18 years</b>	
Outcome measure used in the review	Result reported in the review
<b>Single study results</b>	
Bayley (Behaviour)	E=C at 12 months (1 CCT, N=372) [multifaceted intervention]
Bayley (Mental)	E=C at 12 months (1 CCT, N=372) [multifaceted intervention] E=C post-intervention (1 CCT, N=55) [multifaceted intervention] E>C immediately post-intervention (P=0.02) (1 RCT, N=130) [multifaceted intervention] E>C immediately post-intervention (P<0.001) (1 RCT, N=60) [peer/paraprofessional interventions only] E=C at 8 months, E>C at 12 months, 24 months (P<0.05) (1 CCT, N=120) [peer/paraprofessional interventions only]
Bayley (Motor)	E=C immediately post-intervention (1 RCT, N=130) [multifaceted intervention] E>C at 8 months, 12 months, 24 months (P<0.05) (1 CCT, N=120) [peer/paraprofessional interventions only]
Batelle (Mental)	E=C at 4 year follow up (1 RCT, N=130) [multifaceted intervention]
Batelle (Motor)	E>C at 4 year follow up (P=0.02) (1 RCT, N=130) [multifaceted intervention]
Iowa Test of Basic Skills	E>C 5 to 8 years post-intervention (P<0.02) (1 RCT, N=>137) [multifaceted intervention]
Special education referral; retention in grades; total grades	E=C 5 to 8 years post-intervention (1 RCT, N=>137) [multifaceted intervention]
REEL	E=C immediately post-intervention (1 RCT, N=130) [multifaceted intervention] Receptive language age, expressive language quotient, receptive language quotient, combined language quotient post-intervention: E=C (1 CCT, N=55) [multifaceted intervention] Expressive language age post-intervention: E>C (P=0.03) (1 CCT, N=55) [multifaceted intervention] Combined language age post-intervention: E>C (P<0.04) (1 CCT, N=55) [multifaceted intervention]
Birthweight	E=C (1 RCT, N=428) [multifaceted intervention] E=C (1 RCT, N=145) [multifaceted intervention]
Height at 3 years	E>C (P<0.01) (1 CCT, N=NR) [multifaceted intervention]
Height at 6 years	E=C (1 CCT, N=NR) [for home visiting alone] [multifaceted intervention] E>C (P<0.01) (1 CCT, N=NR) [for home visiting plus nutrition] [multifaceted intervention]
Weight at 3 and 6 years	E=C (1 CCT, N=NR) [for home visiting alone] [multifaceted intervention] E>C (P<0.01) (1 CCT, N=NR) [for home visiting plus nutrition] [multifaceted intervention]
Height x weight at 3 years	E=C (1 CCT, N=NR) [for home visiting alone] [multifaceted intervention] E>C (P<0.01) (1 CCT, N=NR) [for home visiting plus nutrition] [multifaceted intervention]
Height x weight at 6 years	E=C (1 CCT, N=NR) [for home visiting and home visiting plus nutrition] [multifaceted intervention]
Weight for age, weight for height, height for age	E=C immediately post-intervention (1 RCT, N=130) [multifaceted intervention]
Weight for age, arm circumference, energy adequacy, protein adequacy	E>C at completion of intervention (P<0.001) (1 CCT, N=117) [peer/paraprofessional interventions only]
Weight	E>C at 8 months, 12 months, 24 months (P<0.05) (1 CCT, N=120) [peer/paraprofessional interventions only]
Length	E=C at 8 months, 12 months, 24 months (1 CCT, N=120) [peer/paraprofessional interventions only]
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
Outcome measure used in the review	Result reported in the review
<b>Single study results</b>	

Classroom Behaviour Inventory	Hostile, considerate: E<C 5 to 8 years post-intervention (P<0.02) (1 RCT, N=>137) [multifaceted intervention] Extroversion, introversion, task oriented, distractible, intelligent, dependency: E=C 5 to 8 years post-intervention (1 RCT, N=>137) [multifaceted intervention]
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
Severe monilial diaper rash	E<C post-intervention (P<0.01) (1 RCT, N=290) [multifaceted intervention]
Chronic/repeat otitis media	E<C post-intervention (P<0.001) (1 RCT, N=290) [multifaceted intervention]
Brief symptom inventory	E=C post-intervention (1 CCT, N=225) [multifaceted intervention]
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
NCAST Responsiveness to Mother	E>C at 12 months (P<0.05) (1 CCT, N=372) [multifaceted intervention]
NCAST Feeding Scale Total Score	E=C at 12 months (1 CCT, N=372) [multifaceted intervention]
HOME Inventory	E=C immediately post-intervention (1 RCT, N=130) [multifaceted intervention] Provision of appropriate play materials, avoidance of restriction and punishment, organisation of the physical and temporal environment, opportunities for variety in daily stimulation: E=C post-intervention (1 CCT, N=55) [multifaceted intervention] Emotional and verbal response of mother; maternal involvement with child; provision of appropriate play materials; avoidance of restriction and punishment; opportunities for variety in daily stimulation: E=C post-intervention (1 CCT, N=225) [multifaceted intervention] E=C at 12 months (1 CCT, N=372) [multifaceted intervention] E=C at 8 months, 12 months, 24 months (1 CCT, N=120) [peer/paraprofessional interventions only] E>C immediately post-intervention (P<0.001) (1 RCT, N=60) [peer/paraprofessional interventions only] E>C post-intervention (P=0.03) (1 CCT, N=55) [multifaceted intervention] Emotional and verbal responsiveness of the mother: E>C post-intervention (P<0.005) (1 CCT, N=55) [multifaceted intervention] Maternal involvement with the child: E>C post-intervention (P=0.009) (1 CCT, N=55) [multifaceted intervention] Organisation of the physical and temporal environment: E<C post-intervention (P<0.003) (1 CCT, N=225) [multifaceted intervention] E>C at 1 year (P<0.05) (1 CCT, N=142) [multifaceted intervention] E>C at 18 months (P<0.04) (1 CCT, N=115) [peer/paraprofessional interventions only]
Maternal attachment	Acceptance, interaction/stimulation, consoling of infant crying, infant's positive/negative behaviour: E=C at 4 months and 12 months (1 CCT, N=202) [peer/paraprofessional interventions only]
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
Maternal Social Support Index	E=C at 12 months (1 CCT, N=372) [multifaceted intervention]
Norbeck Social Support Questionnaire	E=C post-intervention (1 CCT, N=225) [multifaceted intervention]
Rosenberg's Self Esteem Scale	E=C post-intervention (1 CCT, N=225) [multifaceted intervention]
Levine Piolowsy Depression Scale	E=C 14 weeks into intervention (1 RCT, N=131) [multifaceted intervention]
Prenatal psychosocial profile	Stress: E<C 14 weeks into intervention (P<0.02) (1 RCT, N=131) [multifaceted intervention] Self-esteem: E<C 14 weeks into intervention (P<0.008) (1 RCT, N=131) [multifaceted intervention] Social support (self), and social support (partner): E=C 14 weeks into intervention (1 RCT, N=131) [multifaceted intervention]
Spielberger (State, Trait), Interview Schedule for Social Interaction	E=C immediately post-intervention (1 cohort, N=89) [peer/paraprofessional interventions only]

<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
Immunisation	E=C at 12 months (1 CCT, N=372) [multifaceted intervention] E=C at 12 months (1 CCT, N=202) [peer/paraprofessional interventions only] E=C at 6 months and 18 months (1 CCT, N=115) [peer/paraprofessional interventions only] E>C post-intervention (P<0.01) (1 RCT, N=290) [multifaceted intervention] E>C at 12 months (P<0.05) (1 CCT, N=115) [peer/paraprofessional interventions only]
Delayed preventive care	E<C post-intervention (P<0.05) (1 RCT, N=290) [multifaceted intervention]
Receipt of incomplete care	E<C post-intervention (P<0.01) (1 RCT, N=290) [multifaceted intervention]
Help accessing services	Transportation: E>C post-intervention (P<0.001) (1 CCT, N=225) [multifaceted intervention] Support groups and parenting classes: E>C post-intervention (P<0.002) (1 CCT, N=225) [multifaceted intervention] Baby furniture and toys: (P<0.008) (1 CCT, N=225) [multifaceted intervention] Satisfaction with services: E=78%; C=62% post-intervention (1 CCT, N=225) [multifaceted intervention]
Behaviours	Nutrition (< 3 meals/day): E<C 14 weeks into intervention (P<0.03) (1 RCT, N=131) [multifaceted intervention] Community resources: E>C 14 weeks into intervention (P<0.02) (1 RCT, N=131) [multifaceted intervention] Smoking, marijuana, alcohol use: E=C 14 weeks into intervention (1 RCT, N=131) [multifaceted intervention]
Prenatal care visits	E>C (P<0.05) (1 RCT, N=145) [multifaceted intervention]
Well care visits	E=C at 3 months post-intervention (1 CCT, N=115) [peer/paraprofessional interventions only]
Preventive care visits	E=C at 12 months (1 CCT, N=202) [multifaceted intervention]
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
Parent Attitude Survey	E=C post-intervention (1 CCT, N=55) [multifaceted intervention]
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Result reported in the review</b>
<b>Single study results</b>	
Child Abuse Potential Inventory	E<C at 12 months (P<0.05) (1 CCT, N=372) [multifaceted intervention]
Confirmed allegations of child abuse and neglect	E=C at 12 months (1 CCT, N=372) [multifaceted intervention]
Suspected neglect or abuse	E=C post-intervention (1 RCT, N=290) [multifaceted intervention]
Closed head trauma	E=C post-intervention (1 RCT, N=290) [multifaceted intervention]
Cumulative accident rate per child	E<C at 3 months post-intervention (P<0.01) (1 CCT, N=115) [peer/paraprofessional interventions only]
Reports of abuse and neglect	E=C at 12 months (1 CCT, N=202) [peer/paraprofessional interventions only]
Emergency room visits	E=C at 12 months (1 CCT, N=372) [multifaceted intervention] E=C post-intervention (1 RCT, N=290) [multifaceted intervention] E=C at 12 months (1 CCT, N=202) [peer/paraprofessional interventions only]
Cumulative emergency room visit rate per child	E=C at 3 months post-intervention (1 CCT, N=115) [peer/paraprofessional interventions only]
Doctor visits	E=C at 12 months (1 CCT, N=372) [multifaceted intervention]
Outpatient visits	E=C post-intervention (1 RCT, N=290) [multifaceted intervention]
Hospital admissions	E<C post-intervention (P<0.01) (1 RCT, N=290) [multifaceted intervention] E=C at 12 months (1 CCT, N=202) [multifaceted intervention]
Cost of medical care per child	Home visit = \$1,301; standard care = \$1,899 (1 RCT, N=290) [multifaceted intervention]
Out of home placement	E=C post-intervention (1 CCT, N=225) [multifaceted intervention]
Return to home (following out of home placement)	E>C post-intervention (P<0.001) (1 CCT, N=225) [multifaceted intervention]

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; C: control group; CCT: controlled clinical trial; E: experimental (home visiting) group; HOME: Home Observation for Measurement of the Environment; N: number; NCAST: Nursing Child Assessment Satellite Training; NR: not reported; P: P value; REEL: Receptive-Expressive Emergent Language Scale; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; USA: United States of America



## Antenatal and postnatal education and/or support interventions

**Table 7: Matrix indicating the studies that were included in the systematic reviews**

	Systematic review			
	Bryanton 2013	Gagnon 2007	Pinquart 2010^	Shaw 2006
Achenbach 1993			✓ (RCT, N=NR)	
Achenbach 1990			✓ (RCT, N=NR)	
Akai 2008			✓ (RCT, N=NR)	
Ammaniti 2006			✓ (RCT, N=NR)	
Anderson 1981	✓ (RCT, N=30)			
Anisfeld 1990			✓ (RCT, N=NR)	
Armstrong 1999			✓ (RCT, N=NR)	✓ (RCT, N=181)
Armstrong 2000			✓ (RCT, N=NR)	
Aronen 1993			✓ (RCT, N=NR)	
Aronen 1996			✓ (RCT, N=NR)	
Bakermans-Kranenburg 1998			✓ (RCT, N=NR)	
Barlow 2006			✓ (RCT, N=NR)	
Barlow 2007			✓ (RCT, N=NR)	
Barnes 2009			✓ (RCT, N=NR)	
Barnet 2002			✓ (RCT, N=NR)	
Barnet 2007			✓ (RCT, N=NR)	
Barr 2009			✓ (RCT, N=NR)	
Barrera 1990			✓ (RCT, N=NR)	
Barrera 1986			✓ (RCT, N=NR)	
Barth 1991			✓ (RCT, N=NR)	
Barth 1998			✓ (RCT, N=NR)	
Beckwith 1998			✓ (RCT, N=NR)	
Black 1994			✓ (RCT, N=NR)	
Booth 1989			✓ (RCT, N=NR)	
Bolam 1998	✓ (RCT, N=540)			
Bradley 1994			✓ (RCT, N=NR)	
Brayden 1993			✓ (RCT, N=NR)	
Brooks-Gunn 1992			✓ (RCT, N=NR)	
Brooks-Gunn 1994			✓ (RCT, N=NR)	
Brooten 1986			✓ (RCT, N=NR)	
Brown 2000			✓ (RCT, N=NR)	
Bugental 2002			✓ (RCT, N=NR)	
Bugental 2009			✓ (RCT, N=NR)	
Buist 1999			✓ (RCT, N=NR)	
Bustan 1984			✓ (RCT, N=NR)	
Butz 2000			✓ (RCT, N=NR)	
Caldera 2007			✓ (RCT, N=NR)	
Carter-Jessop 1981		✓ (RCT, N=10)		
Casey 1980				✓ (RCT, N=47)
Casey 1994			✓ (RCT, N=NR)	
Casiro 1993			✓ (RCT, N=NR)	
Chapman 1984			✓ (RCT, N=NR)	
Cheng 2007			✓ (RCT, N=NR)	
Christophersen 1982	✓ (RCT, N=30)			
Cooper 2009			✓ (RCT, N=NR)	
Corwin 1999		✓ (RCT, N=48)		
Cowan 1987			✓ (RCT, N=NR)	
Dennis 2003				✓ (RCT, N=42)
Daro 1999			✓ (RCT, N=NR)	
Davis 1987		✓ (RCT, N=22)		
Dawson 1991			✓ (RCT, N=NR)	
Dawson 1989			✓ (RCT, N=NR)	

Doherty 2006			✓ (RCT, N=NR)	
Duggan 2009			✓ (RCT, N=NR)	
Duggan 2007			✓ (RCT, N=NR)	
Duggan 2004			✓ (RCT, N=NR)	
Duggan 1999			✓ (RCT, N=NR)	
DuMont 2008			✓ (RCT, N=NR)	
Edwards 1997				✓ (RCT, N=972)
Eckenrode 2000			✓ (RCT, N=NR)	
Egeland 1993			✓ (RCT, N=NR)	
Elliott 2002			✓ (RCT, N=NR)	
Escobar 2001				✓ (RCT, N=1014)
Fagan 2008			✓ (RCT, N=NR)	
Feinberg 2008			✓ (RCT, N=NR)	
Feinberg 2009			✓ (RCT, N=NR)	
Fergusson 2005			✓ (RCT, N=NR)	
Fergusson 2006			✓ (RCT, N=NR)	
Field 1998			✓ (RCT, N=NR)	
Field 1980			✓ (RCT, N=NR)	
Field 1982			✓ (RCT, N=NR)	
Flagler 1988	✓ (RCT, N=74)			
Fraser 1997		✓ (RCT, N=1,301 (1,275))		
Fraser 2000			✓ (RCT, N=NR)	
Gagnon 2002				✓ (RCT, N=586)
Galano 2000			✓ (RCT, N=NR)	
Gardner 2003			✓ (RCT, N=NR)	
Gibson 1995	✓ (RCT, N=40)			
Glazebrook 2007			✓ (RCT, N=NR)	
Goetter 2005	✓ (RCT, N=61)			
Golas 1986	✓ (RCT, N=54)			
Gray 1979			✓ (RCT, N=NR)	
Gross 1990			✓ (RCT, N=NR)	
Gunn 1998				✓ (RCT, N=683)
Gurdin 2008			✓ (RCT, N=NR)	
Gutelius 1977			✓ (RCT, N=NR)	
Halford in press			✓ (RCT, N=NR)	
Hall 1980	✓ (RCT, N=30)		✓ (RCT, N=NR)	
Hamilton-Dodd 1989		✓ (RCT, N=22 (16))		
Hardy 1989			✓ (RCT, N=NR)	
Hawkins 2006			✓ (RCT, N=NR)	
Heinicke 2001			✓ (RCT, N=NR)	
Hunziker 1986			✓ (RCT, N=NR)	
Infante-Rivard 1989			✓ (RCT, N=NR)	
Issler 2009	✓ (RCT, N=228)		✓ (RCT, N=NR)	
Jacobson 1991			✓ (RCT, N=NR)	
Johnson 1993				✓ (RCT, N=262)
Johnson 2009			✓ (RCT, N=NR)	
Jones 1977	✓ (RCT, N=40)			
Kaaresen 2006			✓ (RCT, N=NR)	
Kang 1995			✓ (RCT, N=NR)	
Keefe 2005	✓ (RCT, N=180)		✓ (RCT, N=NR)	
Keefe 2006			✓ (RCT, N=NR)	
Kerr 1997			✓ (RCT, N=NR)	
Kitzman 1997			✓ (RCT, N=NR)	
Kitzman 2000			✓ (RCT, N=NR)	

Klerman 2001		✓ (RCT, N=656 (619))		
Koniak-Griffin 2002			✓ (RCT, N=NR)	
Kuo 2009			✓ (RCT, N=NR)	
Larson 1980			✓ (RCT, N=NR)	
Leitch 1999			✓ (RCT, N=NR)	
Liebenberg 1973			✓ (RCT, N=NR)	
Lieu 2000				✓ (RCT, N=1,163)
Liptak 1983	✓ (RCT, N=75)		✓ (RCT, N=NR)	
Luster 1996			✓ (RCT, N=NR)	
Mac Arthur 2002				✓ (cRCT, N=2,064)
Magill-Evans 2007			✓ (RCT, N=NR)	
Marcenko 1996			✓ (RCT, N=NR)	
Martin 2008			✓ (RCT, N=NR)	
McCarton 1997			✓ (RCT, N=NR)	
McCormick 2006			✓ (RCT, N=NR)	
McRury 2010	✓ (RCT, N=51)			
Mehdizadeh 2005		✓ (RCT, N=200)		
Melnyk 2006			✓ (RCT, N=NR)	
Metzl 1980			✓ (RCT, N=NR)	
Midmer 1995			✓ (RCT, N=NR)	
Minkovitz 2003			✓ (RCT, N=NR)	
Moore 1987	✓ (RCT, N=159)			
Morrell 2000				✓ (RCT, N=623)
Myers 1982	✓ (RCT, N=42)		✓ (RCT, N=NR)	
Newnham 2009			✓ (RCT, N=NR)	
Norr 2003			✓ (RCT, N=NR)	
Olafsen 2008			✓ (RCT, N=NR)	
Olds 1997			✓ (RCT, N=NR)	
Olds 1986			✓ (RCT, N=NR)	
Olds 1998			✓ (RCT, N=NR)	
Olds 1994			✓ (RCT, N=NR)	
Olds 1988			✓ (RCT, N=NR)	
Olds 1986			✓ (RCT, N=NR)	
Olds 2004			✓ (RCT, N=NR)	
Olds 2007			✓ (RCT, N=NR)	
Olds 2002			✓ (RCT, N=NR)	
Olds 2004			✓ (RCT, N=NR)	
O'Sullivan 1992				✓ (RCT, N=243)
Paradis 2011	✓ (RCT, N=126 mothers, 11 fathers)			
Paul 2011	✓ (RCT, N=160 (80))			
Petrowski 1981	✓ (RCT, N=56)			
Pfannenstiel 1991		✓ (RCT, N=67 (66))		
Priest 2003				✓ (RCT, N=1,745)
Quinlivan 2003				✓ (RCT, N=136)
Rahman 2009			✓ (RCT, N=NR)	
Rauh 1988			✓ (RCT, N=NR)	
Regan 1995	✓ (RCT, N=100)			✓ (RCT, N=100)
Reid 2002				✓ (RCT, N=1,004)

Riesch 1984	✓ (RCT, N=108, 32)			
Resnick 1988			✓ (RCT, N=NR)	
Resnick 1987			✓ (RCT, N=NR)	
Sajaniemi 2001			✓ (RCT, N=NR)	
Scholz 1992			✓ (RCT, N=NR)	
Schuler 2000			✓ (RCT, N=NR)	
Schulz 2006			✓ (RCT, N=NR)	
Schuster 198			✓ (RCT, N=NR)	
Serwint 1991				✓ (RCT, N=251)
Shapiro 1987	✓ (RCT, N=696)			
Siegel 1980				✓ (RCT, N=321)
Simons 2001				✓ (RCT, N=1,069)
Small 2000				✓ (RCT, N=1,041)
Stanwick 1982			✓ (RCT, N=NR)	✓ (RCT, N=156)
Steel 2003				✓ (RCT, N=733)
Stevens-Simon 2000			✓ (RCT, N=NR)	
Stone 1988			✓ (RCT, N=NR)	
Stremler 2006	✓ (RCT, N=30)			
Sullivan 1980	✓ (RCT, N=53)			
Symon 2005	✓ (RCT, N=346)			
St James-Roberts 2001	✓ (RCT, N=610)			
St. Pierre 1999			✓ (RCT, N=NR)	
Taylor 1988			✓ (RCT, N=NR)	
Thompson 1982			✓ (RCT, N=NR)	
Turan 2008			✓ (RCT, N=NR)	
Van den Boom 1994			✓ (RCT, N=NR)	
Van den Boom 1995			✓ (RCT, N=NR)	
Wagner 1999			✓ (RCT, N=NR)	
Wakeup 2009			✓ (RCT, N=NR)	
Wasik 1990			✓ (RCT, N=NR)	
Waterston 2009			✓ (RCT, N=NR)	
Wendland-Carro 1999	✓ (RCT, N=38)		✓ (RCT, N=NR)	
Westney 1988		✓ (RCT, N=28)	✓ (RCT, N=NR)	
Whitt 1982			✓ (RCT, N=NR)	
Widmayer 1981			✓ (RCT, N=NR)	
Wolfson 1988			✓ (RCT, N=NR)	
Worobey 1982	✓ (RCT, N=48)			

^Note: this table represents the 142 papers included in Piquart 2010 (documenting the results of 133 interventions); where more than 1 publication was available on an individual intervention study, the authors included the papers in the analysis but omitted duplicate results (when interim results and final results were reported, only the final results were coded)

**Abbreviations:** cRCT: cluster randomised controlled trial; N: number; NR: not reported; RCT: randomised controlled trial

**Table 8: Evidence table for Bryanton 2013<sup>6</sup>**

<b>Review ID</b>	Bryanton 2013	
<b>Search date</b>	31 March 2013	
<b>Review method</b>	Meta-analysis	
<b>Ongoing studies</b>	Cook F, Bayer J, Le HND, Mensah F, Cann W, Hiscock H. Baby Business: A randomised controlled trial of a universal parenting program that aims to prevent early infant sleep and cry problems and associated parental depression. BMC Pediatrics 2012;12:13.	
<b>No. studies of relevance to this Overview and their design(s)</b>	27 RCTs	
<b>No. participants in relevant studies</b>	3,949 mothers and 579 fathers (15 RCTs (2,922 mothers and 388 fathers) reported useable) (these Ns are taken from abstract/results text of the review) <i>*Note: sum of Ns given in above table = 4,048 (these Ns were taken from 'Characteristics of included studies' tables in the review)</i>	
<b>Location/setting</b>	Australia: 1 RCT; Brazil: 2 RCT; Canada: 1 RCT; Nepal: 1 RCT; UK: 1 RCT; USA: 21 RCT	
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 10/11 ('high' quality)	
<b>Quality of relevant studies</b>	Review authors' summary: The vast majority of the included studies were of uncertain quality, since details of the randomisation procedure, allocation concealment, blinding of outcome assessors or participant accrual/loss, or both, were often NR or were unclear; many studies had substantial attrition	
<b>Review objective</b>	To assess the effects of structured postnatal education delivered to an individual or group related to infant general health or care and parent-infant relationships; and to determine whether the effects of structured postnatal education vary by length or type of intervention and by population	
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs (individual and cRCTs) evaluating structured forms of postnatal education provided to individual parents or groups of parents were included; with violations of allocation management insufficient to materially affect outcomes; with loss to follow up insufficient to materially affect outcomes; cross-over trials and qRCTs were excluded; <u>participants</u> : 1 or both parents of a living infant were included; studies of educational interventions for parents of infants in a NICU and parents < 20 years old were excluded; <u>interventions</u> : studies of any structured educational intervention (using a variety of methods/media), offered either in hospital or elsewhere within the 1 <sup>st</sup> 2 months post birth to individuals or groups by an educator (nurse, nurse practitioner, midwife, physician, other), related to the general health or care of an infant, or to parent-infant relationship were included; studies of interventions that were primarily support-based were excluded; <u>outcomes</u> : general infant health, infant care, or parent-infant relationship factors that could be affected by postnatal education	
<b>Participant population</b>	1 or both parents and a living infant (excluding parents of infants in a NICU, and parents less than 20 years old)	
<b>Intervention</b>	Postnatal education directed towards women or couples: 5 RCTs tested education relative to sleep enhancement; 12 RCTs tested education relative to infant behaviour; 3 RCTs tested education relative to general post-birth health; 3 RCTs tested education relative to general infant care; 4 RCTs tested education relative to infant safety; intervention durations/intensities ranged from 1 postpartum session (e.g. 20 minute NBAS assessment on 3 <sup>rd</sup> day postpartum) to 4 home visits, 1 per week; and 45-minute meeting postpartum followed by weekly phone contact for 6 weeks	
<b>Comparator</b>	Predominately usual care/routine care	
<b>Outcome domain</b>	Infant social and emotional wellbeing or development up to one year of age	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

<sup>6</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Education on general post-birth infant health or care versus usual care</i>	
Infant weight (kg): at 6 months post-birth	MD (F): 0.10 (95% CI -0.19, 0.39) (1 RCT, N=203)
Length (cm): at 6 months post-birth	MD (F): 0.30 (95% CI -0.88, 1.48) (1 RCT, N=202)
Head circumference (cm): at 6 months post-birth	MD (F): -0.20 (95% CI -0.76, 0.36) (1 RCT, N=203)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
<i>Education on sleep enhancement versus usual care</i>	
Total minutes of infant sleep in 24 hours: at 6 weeks	MD (F): 62.08 (95% CI 42.88, 81.29); I <sup>2</sup> 86%; P<0.00001 (3 RCTs, N=NR)
Total minutes of infant sleep in 24 hours: at 12 weeks	MD (F): 61.41 (95% CI 28.08, 94.73); I <sup>2</sup> 62%; P=0.0003 (2 RCTs, N=NR)
Night-time minutes of infant sleep in 24 hours: at 6 weeks	MD (F): 29.13 (95% CI 18.53, 39.73); I <sup>2</sup> 0%; P<0.00001 (2 RCTs, N=NR)
Night-time minutes of infant sleep in 24 hours: at 12 weeks	MD (F): 16.18 (95% CI 4.41, 27.95); I <sup>2</sup> 84%; P=0.007 (2 RCTs, N=NR)
Longest uninterrupted night-time minutes of infant sleep in 24 hours: at 6 weeks	MD (F): 13.74 (95% CI -1.11, 28.58); I <sup>2</sup> 62%; P=0.07 (2 RCTs, N=NR)
Longest uninterrupted night-time minutes of infant sleep in 24 hours: at 12 weeks	MD (F): 11.45 (95% CI -5.40, 28.30); I <sup>2</sup> 78%; P=0.18 (2 RCTs, N=NR)
Day-time minutes of infant sleep at 24 hours: at 6 weeks	MD (F): 39.59 (95% CI 25.01, 54.17); I <sup>2</sup> 92%; P<0.00001 (2 RCTs, N=NR)
Day-time minutes of infant sleep at 24 hours: at 12 weeks	MD (F): 9.92 (95% CI -1.83, 21.66); I <sup>2</sup> 90%; P=0.098 (2 RCTs, N=NR)
Longest uninterrupted day-time minutes of infant sleep in 24 hours: at 6 weeks	MD (F): 5.57 (95% CI -2.31, 13.45); I <sup>2</sup> 66%; P=0.17 (2 RCTs, N=NR)
Longest uninterrupted day-time minutes of infant sleep in 24 hours: at 12 weeks	MD (F): 0.60 (95% CI -3.89, 5.09); I <sup>2</sup> 83%; P=0.79 (2 RCTs, N=NR)
Infant crying time in 24 hours: at 6 weeks	MD (F): 4.36 (95% CI -6.44, 15.16); I <sup>2</sup> 0; P=0.43 (2 RCTs, N=NR)
Infant crying time in 24 hours: at 12 weeks	MD (F): 0.55 (95% CI -8.38, 9.47) I <sup>2</sup> 0; P=0.90 (2 RCTs, N=NR)
<b>Single study results</b>	
<i>Education on sleep enhancement versus usual care</i>	
Total infant sleep ≥ 15 hours per 25 hours: at 6 weeks	RR (F): 1.72 (95% CI 1.56, 1.90) (1 RCT, N=1,749)
Total infant sleep ≥ 15 hours per 25 hours: at 12 weeks	RR (F): 1.73 (95% CI 1.54, 1.95) (1 RCT, N=1,497)
Total minutes of infant sleep in 24 hours: at 4 weeks	MD (F): 60.0 (95% CI -24.02, 144.02) (1 RCT, N=NR)
Total minutes of infant sleep in 24 hours: at 8 weeks	MD (F): -12.0 (95% CI -78.58, 54.58) (1 RCT, N=NR)
Infant crying time in 24 hours: at 4 weeks	MD (F): 18.0 (95% CI -25.63, 61.63) (1 RCT, N=NR)
Infant crying time in 24 hours: at 8 weeks	MD (F): 42.0 (95% CI -6.41, 90.41) (1 RCT, N=NR)
Night-time minutes of infant sleep in 24 hours: at 12 weeks	MD (F): 6.0 (95% CI -8.21, 20.21) (1 RCT, N=316)
Longest uninterrupted night-time minutes of infant sleep in 24 hours: at 12 weeks	MD (F): -5.0 (95% CI -27.66, 17.66) (1 RCT, N=316)
Number of infant night-time sleeping episodes: at 12 weeks	MD (F): 0.10 (95% CI -0.18, 0.38) (1 RCT, N=316)
Day-time minutes of infant sleep in 24 hours: at 12 weeks	MD (F): -5.0 (95% CI -19.86, 9.86) (1 RCT, N=316)
Longest uninterrupted day-time minutes of infant sleep in 24 hours: at 12 weeks	MD (F): -5.0 (95% CI -11.40, 1.40) (1 RCT, N=316)
Number of infant day-time sleeping episodes: at 12 weeks	MD (F): 0.10 (95% CI -0.12, 0.32) (1 RCT, N=316)
Night-time minutes of infant fussing/crying in 24 hours: at 12 weeks	MD (F): 2.0 (95% CI -2.24, 6.24) (1 RCT, N=316)
Longest uninterrupted night-time minutes of infant fuss/cry in 24 hours: at 12 weeks	MD (F): 0.0 (95% CI -2.24, 2.24) (1 RCT, N=316)
Number of infant night-time fussing/crying episodes: at 12 weeks	MD (F): 0.20 (95% CI -0.08, 0.48) (1 RCT, N=316)

Day-time minutes of infant fussing/crying in 24 hours: at 12 weeks	MD (F): 3.0 (95% CI -4.07, 10.07) (1 RCT, N=316)
Longest uninterrupted day-time minutes of infant fuss/cry in 24 hours: at 12 weeks	MD (F): -1.0 (95% CI -3.24, 1.24) (1 RCT, N=316)
Number of infant day-time fussing/crying episodes: at 12 weeks	MD (F): 0.40 (95% CI -0.10, 0.90) (1 RCT, N=316)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Education on general post-birth infant health or care versus usual care</i>	
Appropriate immunisation: at 6 months post-birth	RR (F): 1.04 (95% CI 0.97, 1.11) (1 RCT, N=202)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Education on infant behaviour versus usual care</i>	
Mother distance	MD (F): 0.20 (95% CI -0.11, 0.51) (1 RCT, N=61)
Mutuality	MD (F): 1.10 (95% CI -3.07, 5.27) (1 RCT, N=61)
Synchronous co-occurrences during free play: visual	MD (F): 10.10 (95% CI 5.96, 14.24) (1 RCT, N=36)
Synchronous co-occurrences during free play: vocal	MD (F): 6.73 (95% CI 3.64, 9.82) (1 RCT, N=36)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Education on sleep enhancement versus usual care</i>	
Maternal stress score: 6 weeks postpartum	MD (F): 23.80 (95% CI 2.08, 45.52) (1 RCT, N=35)
Maternal stress score: 12 weeks postpartum	MD (F): 36.40 (95% CI 15.38, 57.42) (1 RCT, N=35)
<i>Education on infant behaviour versus usual care</i>	
Child-rearing anxiety	MD (F): 3.70 (95% CI -1.33, 8.73) (1 RCT, N=61)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
<i>Education on infant behaviour versus usual care</i>	
Knowledge of infant behaviour: Maternal at 4 weeks postpartum	MD (F): 2.85 (95% CI 1.78, 3.91); $I^2$ 0%; $P < 0.00001$ (2 RCTs, N=56)
<b>Single study results</b>	
<i>Education on infant behaviour versus usual care</i>	
Knowledge of infant behaviour: Maternal at 1-4 days postpartum	MD (F): 4.60 (95% CI 2.60, 6.60) (1 RCT, N=28)
Knowledge of infant behaviour: Paternal at 1-4 days postpartum	MD (F): 6.50 (95% CI 4.88, 8.12) (1 RCT, N=28)
Knowledge of infant behaviour: Paternal at 4 weeks postpartum	MD (F): 3.70 (95% CI 1.93, 5.47) (1 RCT, N=26)
Mother's perceptions of infants at 1 month postpartum	MD (F): 0.66 (95% CI -8.44, 9.76) (1 RCT, N=30)
Maternal confidence in interpreting infant behaviour at 4 weeks post-partum	MD (F): 3.70 (95% CI -1.16, 8.56) (1 RCT, N=30)
<i>Education on general post-birth infant health or care versus usual care</i>	
Maternal general knowledge post-birth (mean)	MD (F): 0.40 (95% CI -0.27, 1.07) (1 RCT, N=100)
Maternal general knowledge post-birth (percent correct)	RR (F): 1.07 (95% CI 0.92, 1.23) (1 RCT, N=100)
Knowledge of signs of infant pneumonia: in-drawing	RR (F): 1.21 (95% CI 0.73, 2.03) (1 RCT, N=203)
Knowledge of signs of infant pneumonia: tachypnoea	RR (F): 1.19 (95% CI 0.90, 1.58) (1 RCT, N=203)
Knowledge of action to take in case of infant diarrhoea: continue breastfeeding	RR (F): 0.99 (95% CI 0.75, 1.31) (1 RCT, N=203)
Knowledge of action to take in case of infant diarrhoea: give oral rehydration solution	RR (F): 1.00 (95% CI 0.92, 1.08) (1 RCT, N=203)
<i>Education on infant safety versus usual care</i>	
Infant restraint seat fastened by lap belt: at hospital discharge	RR (F): 21.0 (95% CI 1.34, 328.86) (1 RCT, N=30)
Infant restraint seat fastened by lap belt: at 4-6 weeks	RR (F): 1.24 (95% CI 0.34, 4.51) (1 RCT, N=27)

Post-hospitalisation awareness of tap water burns	RR (F): 1.07 (95% CI 1.04, 1.11) (1 RCT, N=604)
Greater use of temperature testing	RR (F): 1.76 (95% CI 1.43, 2.17) (1 RCT, N=604)
Supine infant sleep position: at 1 week	RR (F): 1.31 (95% CI 1.00, 1.72) (1 RCT, N=61)
Supine infant sleep position: at 6 weeks	RR (F): 1.21 (95% CI 0.85, 1.71) (1 RCT, N=61)
Supine infant sleep position: at 3 months	RR (F): 1.79 (95% CI 1.17, 2.72) (1 RCT, N=191)
Supine infant sleep position: at 6 months	RR (F): 2.18 (95% CI 1.35, 3.53) (1 RCT, N=185)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who</b> could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?	
Infant sleep and crying outcomes	<ul style="list-style-type: none"> <li>NR (video) (McRury 2010)</li> <li>Research nurse (Stremler 2006)</li> <li>Nurse (Symon 2005)</li> <li>NR (pamphlet/booklet) (St James-Roberts 2001)</li> </ul>
Maternal knowledge of infant behaviour	<ul style="list-style-type: none"> <li>Nurse practitioner (Golas 1986)</li> <li>“experimenter” (Myers 1982)</li> </ul>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Infant sleep and crying outcomes	<ul style="list-style-type: none"> <li>In hospital and at home, USA, large community hospital (McRury 2010)</li> <li>Assumed in hospital and home, Canada (Stremler 2006)</li> <li>Assumed in hospital, South Australia (Symon 2005)</li> <li>Postnatal ward of large general hospital in the UK (St James-Roberts 2001)</li> </ul>
Maternal knowledge of infant behaviour	<ul style="list-style-type: none"> <li>Setting: examination room of paediatrician’s office, USA (Golas 1986)</li> <li>Sessions were held in mother’s room for the mothers and in a small room near the nursery for the fathers, USA (Myers 1982)</li> </ul>
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Infant sleep and crying outcomes	<ul style="list-style-type: none"> <li>Mother-infant dyads. Infants were singletons, 37-41 weeks’ gestation, and admitted to the normal newborn nursery. Mothers were required to have resources to view VHS tape (McRury 2010)</li> <li>Primiparous women who had a healthy singleton baby born greater than or equal to 37 weeks’ gestation, lived in greater Toronto area, planning to provide care to their infant for first 6 weeks post-discharge (Stremler 2006)</li> <li>Families within 2 weeks of giving birth at 36-42 weeks’ gestation; English speaking; mother planning to provide full-time care to infant for greater than 12 weeks post-birth (Symon 2005)</li> <li>Women who gave birth to a live singleton infant of greater than 37 weeks’ gestation (St James-Roberts 2001)</li> </ul>
Maternal knowledge of infant behaviour	<ul style="list-style-type: none"> <li>Mothers and newborns. Inclusion criteria were: primiparas, uncomplicated births, newborns received examinations by private paediatrician group practice, term infants, no congenital anomalies or medical complications in first 2 weeks of life. Mothers were well educated, adults, married, white, middle-class Americans (Golas 1986)</li> <li>Middle-class married couples who had just had their first baby (mothers and fathers included) (Myers 1982)</li> </ul>
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
Infant sleep and crying outcomes	<ul style="list-style-type: none"> <li>30-minute video (McRury 2010)</li> <li>TIPS (Tips for Infant and Parent Sleep). 45-minute meeting weekly phone contact (Stremler 2006)</li> <li>45-minute consultation at 2 to 3 weeks (Symon 2005)</li> <li>On the postnatal ward (St James-Roberts 2001)</li> </ul>
Maternal knowledge of infant	<ul style="list-style-type: none"> <li>Individual 2-hour session by nurse practitioner with each mother-infant</li> </ul>



behaviour	<p>dyad within 5 days of newborn being 2 weeks old (Golas 1986)</p> <ul style="list-style-type: none"> <li>The intervention was given after second day post-birth but before departure for home at day 4. Sessions lasted 45-60 minutes (Myers 1982)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b>	
Infant sleep and crying outcomes	<ul style="list-style-type: none"> <li>30-minute video to view in hospital and then take home to view as well. Specific instructions about 5 steps to use to soothe infant during crying (McRury 2010)</li> <li>TIPS (Tips for Infant and Parent Sleep). The sleep intervention: discussion of sleep information and strategies, provision of 11-page booklet and phone contact to reinforce information and problem solve (Stremler 2006)</li> <li>Usual care plus both parents were invited to attend a 45 minute consultation with a nurse at 2 to 3 weeks on normal sleep patterns in newborn infants and a 50 page book reinforcing the information (Symon 2005)</li> <li>1) Behavioural group received a leaflet describing a 9-point program OR 2) educational intervention consisted of a 10-page guide to baby crying and sleeping that was developed with local health professionals and a telephone number for CRYISIS (a voluntary organisation for parents with young babies). Guide included a question and answer section on common problems and how to deal with them and a step-by-step guide to preventing crying and sleeping problems. It provided written advice and suggestions that could be adapted (not prescriptions, as was the case in the behavioural intervention) (St James-Roberts 2001)</li> </ul>
Maternal knowledge of infant behaviour	<ul style="list-style-type: none"> <li>Teaching plan with specific goals but delivered in a flexible order based on infant behaviour and mother's responses and questions: (1) viewed a 25-minute film (The Amazing Newborn); (2) oral and visual presentation of different states of infant behaviour and appropriate maternal response; (3) demonstration of selected items from BNBAS and return demonstration by mothers, individually based on newborn (Golas 1986)</li> <li>The 2 intervention groups (14 fathers in 1 group and mothers in another) were taught individually how to administer most of the items of the NBAS. Throughout the session, the experimenter gave information about infant development related to the infant's performance. The experimenter aimed at being supportive. Information learned was encouraged to be given to the other partner and to be used at home (Myers 1982)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?</b>	
NR	
<b>What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?</b>	
NR	
<b>What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?</b>	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; cm: centimetre; cRCT: cluster-randomised controlled trial; (F): fixed effect; kg: kilogram; MD: mean difference; N: number; NBAS: Neonatal Behavioural Assessment Scale; NICU: neonatal intensive care unit; NR: not reported; NS: non-significant; P: P value; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; UK: United Kingdom; USA: United States of America

**Table 9: Evidence table for Gagnon 2007<sup>7</sup>**

<b>Review ID</b>	Gagnon 2007	
<b>Search date</b>	1956 to April 2006 (updated search in July 2011, with the results added to the 'Studies awaiting classification' section)	
<b>Review method</b>	Narrative synthesis (meta-analysis not possible "since each study was testing the effect of a different intervention on one or more different outcomes")	
<b>Ongoing studies</b>	NR, though 58 reports are listed under 'Studies awaiting classification'	
<b>No. studies of relevance to this Overview and their design(s)</b>	9 RCTs	
<b>No. participants in relevant studies</b>	2,284 (reported in abstract and results of review) *Note: sum of Ns given in above table = 2,354 (these Ns were taken from 'Characteristics of included studies' tables in the review)	
<b>Location/setting</b>	Canada and USA: 1 RCT; Iran: 1 RCT; not specified: 2 RCTs; USA: 5 RCTs	
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 8/11 ('high' quality)	
<b>Quality of relevant studies</b>	1 RCT was of high quality (N=1,275); 8 RCTs were of unclear quality	
<b>Review objective</b>	To assess the effects of individual or group antenatal education on knowledge acquisition, anxiety, sense of control, pain, labour and birth support, breastfeeding, infant-care abilities, and psychological and social adjustment	
<b>Review eligibility criteria</b>	<u>Designs</u> : controlled trials, with random allocation to treatment and control groups were included; including studies with violations of allocated management insufficient to materially affect outcomes, and loss to follow up insufficient to materially affect the comparison, and with data available in a suitable form for analysis; <u>participants</u> : 1 or both expectant parents; <u>interventions</u> : any structured (organised) educational program offered to individuals or groups by an educator, related to the birth of an infant, including preparation for childbirth, child care, and adjustment of the parents associated with parenthood; interventions directed exclusively to increasing breastfeeding success, knowledge of and coping skills concerning postpartum depression, improving maternal psychosocial health, including anxiety, depression, self-esteem, or reducing smoking were excluded; <u>outcomes</u> : factors that could be affected by antenatal education for either childhood or parenthood, e.g. knowledge acquisition, anxiety, maternal sense of control, labour pain, use of medication, partner involvement, breastfeeding success, infant care abilities, general social support, adjustment to parenthood, obstetrical interventions	
<b>Participant population</b>	Pregnant women: 6 RCTs; couples: 1 RCTs; men: 2 RCTs	
<b>Intervention</b>	Antenatal education; <b>RCTs directed towards women or couples</b> including 2 RCTs focused on increasing fetal attachment, 1 RCT on labour, baby care, counselling and neuromuscular exercises, 1 RCT on age-appropriate development, 1 RCT on early parenthood, 1 RCT on a combination of 16 interventions (including education about pregnancy, peer support, health behaviour), 1 RCT on the pre-disposing, enabling and reinforcing factors for attempting a vaginal birth; <b>RCTs directed towards men</b> including 1 RCT focusing on sexuality, pregnancy and prenatal care, labour and birth, and infant and child care, and 1 RCT focused on newborn care and related paternal behaviour Durations/intensities of the interventions ranged from 2 60 minute classes to 7 90 minute classes	
<b>Comparator</b>	No intervention or usual care	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to one year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

<sup>7</sup> green shading indicates results significantly in favour of the intervention

<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
<i>Paternal education classes versus routine care</i>	
Paternal sensitivity	MD (F): 0.38 (95% CI -0.04, 0.80) (1 RCT, N=66)
Paternal plus infant sensitivity	MD (F): 0.65 (95% CI 0.04, 1.26) (1 RCT, N=66)
<i>Childbirth education classes + maternal attachment preparation versus childbirth education classes alone</i>	
Frequency of maternal attachment behaviours	MD (F): 52.6 (95% CI 21.82, 83.38) (1 RCT, N=10)
<i>Promotion of intrauterine attachment versus routine care</i>	
Affectionate behaviour (maternal attachment subscale)	MD (F): 9.70 (95% CI 0.15, 19.25) (1 RCT, N=22)
Proximity maintaining (maternal attachment subscale)	MD (F): 2.87 (95% CI -1.04, 6.78) (1 RCT, N=22)
Mother's attachment (maternal attachment subscale)	MD (F): -1.90 (95% CI -8.52, 4.72) (1 RCT, N=22)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
<i>Individual maternal education versus routine care</i>	
Observed maternal competence	MD (F): 1.87 (95% CI -16.04, 19.78) (1 RCT, N=16)
Adaptation to the maternal role (Lederman tool)	MD (F): 12.0 (95% CI -4.83, 28.83) (1 RCT, N=16)
Adaptation to the maternal role (Sheehan tool)	MD (F): 2.12 (95% CI -1.82, 6.06) (1 RCT, N=16)
Satisfaction with maternal role preparation	MD (F): 21.59 (95% CI 11.23, 31.95) (1 RCT, N=16)
<i>Paternal education classes versus routine care</i>	
Paternal knowledge	MD (F): 9.55 (95% CI 1.25, 17.85) (1 RCT, N=28)
<i>Childbirth education classes + maternal attachment preparation versus childbirth education classes alone</i>	
Parenting knowledge	MD (F): 1.62 (95% CI 0.49, 2.75) (1 RCT, N=48)
<i>Augmented prenatal care versus routine care</i>	
Knowledge of risk factors: told she or her baby might be 'at risk' or 'have problems'	RR (F): 1.48 (95% CI 1.03, 2.14) (1 RCT, N=223)
Knowledge of risk factors: changed behaviour during pregnancy in response to information about risks/problems	RR (F): 2.22 (95% CI 1.27, 3.90) (1 RCT, N=223)
Knowledge of risk factors: told how much weight to gain	RR (F): 1.20 (95% CI 1.07, 1.35) (1 RCT, N=223)
Self-report of behavioural change/status: regular vitamin-mineral supplementation	RR (F): 1.01 (95% CI 0.88, 1.16) (1 RCT, N=223)
Self-report of behavioural change/status: smoking cessation (for smokers only)	RR (F): 1.40 (95% CI 0.56, 3.48) (1 RCT, N=223)
Self-report of behavioural change/status: perceived mastery paternal plus infant sensitivity	RR (F): 1.48 (95% CI 1.05, 2.09) (1 RCT, N=223)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
<i>Augmented prenatal care versus routine care</i>	
Prenatal care: very helpful	RR (F): 1.17 (95% CI 1.05, 1.30) (1 RCT, N=223)
Prenatal care: somewhat or not too helpful	RR (F): 0.27 (95% CI 0.11, 0.64) (1 RCT, N=223)
Compared with last time: prenatal care rated better	RR (F): 1.17 (95% CI 1.05, 1.30) (1 RCT, N=223)
Compared with last time: prenatal care rated same	RR (F): 0.43 (95% CI 0.25, 0.74) (1 RCT, N=223)
Compared with last time: prenatal care rated worse	RR (F): 0.10 (95% CI 0.01, 0.77) (1 RCT, N=223)
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; (F): fixed effect; MD: mean difference; N: number; NR: not reported; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; USA: United States of America

**Table 10: Evidence table for Pinquart 2010<sup>8</sup>**

<b>Review ID</b>	Pinquart 2010
<b>Search date</b>	Studies published up to the end of 2009 were included
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	142 papers relating to RCTs of 133 different interventions
<b>No. participants in relevant studies</b>	NR (average number of participants in intervention condition N~108) <i>Estimated total sample therefore: N=13,300</i>
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 2/11 ('low' quality)
<b>Quality of relevant studies</b>	Aspects of study quality (dropout rates and whether participants of the intervention and control groups were different at pre-test) were considered as a moderators, however quality NR for individual studies
<b>Review objective</b>	To estimate the average effects of interventions aimed at easing the transition to parenthood, based on a large number of randomised studies; and to identify study characteristics that may be associated with the size of the intervention effects (e.g. the onset of the intervention; characteristics of the target population; or mode of delivery)
<b>Review eligibility criteria</b>	<u>Designs</u> : intervention studies using a randomised design, with the control group receiving no intervention or minimal intervention; <u>participants/interventions</u> : studies with a parenting education component, with the onset of the intervention during pregnancy or in the 1 <sup>st</sup> 6 months after childbirth; excluding studies not targeted at improving parenting, and those focused exclusively on treatment/prevention of re-occurrence of psychological disorders like postnatal depression, or programs designed for parents of ill/disabled children; <u>outcomes</u> : ES reported or could be computed from the available information for outcomes including: parenting quality, parenting stress, health promoting behaviour, child abuse or neglect, child development, mental health of parents, couples adjustment; <u>other</u> : studies published up to the end of 2009 (no earlier time limit)
<b>Participant population</b>	Expectant or new parents; approximately 2/3 of the interventions worked with families at risk (N=82); the majority included only mothers (N=107). Participants were on average 24.3 years (SD: 4.7), and 79% were expecting or had just given birth to their 1 <sup>st</sup> child; 58% were married, 21% cohabitating; 58% were members of ethnic minorities; 56% had completed high school education
<b>Intervention</b>	Interventions with a parenting education component for expectant and new parents, starting during pregnancy or in the 1 <sup>st</sup> 6 months after birth. The main goals of the interventions included: teaching infant care (86% of interventions); promoting parental sensitivity and responsiveness (82%); promoting cognitive stimulation of the child (45%); counselling (38%); discussion of future planning/family planning (35%); health promotion (27%); prevention of child abuse (21%); promotion of couple adjustment/marital adjustment (17%). Most interventions (N=86) commenced after childbirth; N=10 were exclusively in pregnancy; N=38 were in pregnancy and after childbirth; most (N=84) were delivered exclusively in parental homes; N=16 were held in hospitals; N=6 in the community; and N=26 combined home visits with other locations Average length of intervention: 15.0 months (SD: 13.7, range 1 day to 60 months); average number of meetings: 29 meetings (SD: 50.4, range 1 meeting to 421 meetings)
<b>Comparator</b>	Control group received no intervention or minimal intervention
<b>Outcome domain*</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<sup>8</sup> green shading indicates results significantly in favour of the intervention; yellow shading indicates moderator analyses

<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Cognitive development (BSID MDI; Stanford Binet Intelligence Scales; "other validated measures") "at the end of the intervention"# (15 months)	ES (d): 0.24 (95% CI 0.14, 0.33); Q: 124.98 P<0.001; P<0.001 (38 treated subsamples, N=NR (~3,800)) Moderator effects (weighted multiple linear regression analyses): Interventions started after childbirth had stronger effects on cognitive development (P<0.05)
Motor development (BSID PDI; "related measures") "at the end of the intervention"# (15 months)	ES (d): 0.15 (95% CI 0.07, 0.23); Q: 30.49 P=NS; P<0.001 (22 treated subsamples, N=NR (~2,200))
Social development (measures of social competence and behaviour regulation, e.g. competence subscales of the BITSEA; tests for secure attachment; measures of communication and peer relation) "at the end of the intervention"# (15 months)	ES (d): 0.30 (95% CI 0.19, 0.42); Q: 142.37 P<0.001; P<0.001 (34 treated subsamples, N=NR (~3,400)) Associations between intervention goals and outcomes: Only interventions targeted at promoting parental sensitivity and responsiveness promoted social development of the child, such as secure attachment (ES (d): 0.36 (95% CI 0.22, 0.49) (28 treated subsamples) (P<0.001) vs. ES (d) 0.08 (95% CI -0.03, 0.19) (6 treated subsamples) (P=NS)) Moderator effects (weighted multiple linear regression analyses): Interventions held in a group format had weaker effects than other interventions on social development of the child (P<0.05); longer interventions had weaker effects on social development (P<0.001)
Mental health (CBCL; assessments of child mood states; "other validated scales") "at the end of the intervention"# (15 months)	ES (d): 0.13 (95% CI 0.18, 0.32); Q: 132.02 P<0.001; P<0.001 (40 treated subsamples, N=NR (~4,000)) Moderator effects (weighted multiple linear regression analyses): Interventions led by professionals had stronger effects with regard to child mental health (P<0.05)
Cognitive development (BSID MDI; Stanford Binet Intelligence Scales; "other validated measures") "follow up effect"~ (28.6 months)	ES (d): 0.12 (95% CI 0.06, 0.18); Q: 42.10 P=NS; P<0.001 (31 treated subsamples, N=NR (~3,100))
Motor development (BSID PDI; "related measures") "follow up effect"~ (28.6 months)	ES (d): 0.35 (95% CI 0.21, 0.50); Q: 13.02 P=NS; P<0.001 (13 treated subsamples, N=NR (~1,300))
Social development (measures of social competence and behaviour regulation, e.g. competence subscales of the BITSEA; tests for secure attachment; measures of communication and peer relation) "follow up effect"~ (28.6 months)	ES (d): 0.28 (95% CI 0.16, 0.40); Q: 40.05 P<0.01; P<0.001 (21 treated subsamples, N=NR (~2,100))
Mental health (CBCL; assessments of child mood states; "other validated scales") "follow up effect"~ (28.6 months)	ES (d): 0.20 (95% CI 0.11, 0.30); Q: 37.82 P<0.01; P<0.001 (21 treated subsamples, N=NR (~2,100))
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Parenting quality (Infant-Toddler HOME; NCATS; "other related validated scales") "at the end of the intervention"# (15 months)	ES (d): 0.35 (95% CI 0.29, 0.42); Q: 472.63 P<0.001; P<0.001 (103 treated subsamples, N=NR (~10,300)) Moderator effects (weighted multiple linear regression analyses): More recent studies had weaker effect sizes (P<0.05); longer interventions had weaker effect sizes (P<0.001)
Parenting quality (Infant-Toddler HOME; NCATS; "other related validated scales") "follow up effect"~ (28.6 months)	ES (d): 0.31 (95% CI 0.22, 0.40); Q: 71.95 P<0.001; P<0.001 (39 treated subsamples, N=NR (~3,900))

<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Parenting stress (Parental Distress scale of PSI; "other measures") "at the end of the intervention"# (15 months)	ES (d): 0.20 (95% CI 0.11, 0.29); Q: 45.04 P<0.01; P<0.001 (26 treated subsamples, N=NR (~2,600)) Moderator effects (weighted multiple linear regression analyses): More recent studies had weaker effect sizes (P<0.05)
Parental mental health (CES-D; STAI; EPDS; "other validated measures") "at the end of the intervention"# (15 months)	ES (d): 0.13 (95% CI 0.06, 0.20); Q: 43.69 P<0.05; P<0.001 (33 treated subsamples, N=NR (~3,300)) Moderator effects (weighted multiple linear regression analyses): Interventions focused largely/exclusively on mothers had larger effect sizes than those with couples (P<0.05)
Parenting stress (Parental Distress scale of PSI; "other measures") "follow up effect"~ (28.6 months)	ES (d): 0.31 (95% CI -0.27, 0.89); Q: 64.25 P<0.001; P=NS (6 treated subsamples, N=NR (~600))
Parental mental health (CES-D; STAI; EPDS; "other validated measures") "follow up effect"~ (28.6 months)	ES (d): 0.15 (95% CI 0.08, 0.22); Q: 16.89 P=NS; P<0.001 (12 treated subsamples, N=NR (~1,200))
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Health promoting parental behaviour (percentage of children who received full immunisation; number of paediatric well child visits) "at the end of the intervention"# (15 months)	ES (d): 0.15 (95% CI 0.07, 0.23); Q: 102.28 P<0.001; P<0.001 (30 treated subsamples, N=NR (~3,000)) Associations between intervention goals and outcomes: Interventions focused on health promotion promoted this behaviour, but not interventions focused on other goals (ES (d): 0.30 (95% CI 0.16, 0.44) (11 treated subsamples) (P<0.001) vs. ES (d) 0.04 (95% CI -0.01, 0.10) (19 treated subsamples) (P=NS)) Moderator effects (weighted multiple linear regression analyses): Interventions held in a group format had larger effects than other interventions on parental health-promoting behaviours (P<0.05); More recent studies had weaker effect sizes (P<0.001)
Health promoting parental behaviour (percentage of children who received full immunisation; number of paediatric well child visits) "follow up effect"~ (28.6 months)	ES (d): 0.15 (95% CI -0.20, 0.50) Q: 0 P=NS; P=NS (1 treated subsample, N=NR (~100))
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Couple adjustment (Dyadic Adjustment Scale; revised Conflict Tactics Scale; "related scales") "at the end of the intervention"# (15 months)	ES (d): 0.19 (95% CI 0.06, 0.33); Q: 23.86 P<0.05; P<0.01 (13 treated subsamples, N=NR (~1,300)) Associations between intervention goals and outcomes: Only interventions with a focus on improving the couple relationship had a significant effect on couple adjustment (ES (d): 0.26 (95% CI 0.04, 0.48) (7 treated subsamples) (P<0.01) vs. ES (d) 0.15 (95% CI -0.04, 0.33) (6 treated subsamples) (P<0.20))
Couple adjustment (Dyadic Adjustment Scale; revised Conflict Tactics Scale; "related scales") "follow up effect"~ (28.6 months)	ES (d): 0.22 (95% CI 0.01, 0.43); Q: 4.77 P=NS; P<0.05 (4 treated subsamples, N=NR (~400))

<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Child maltreatment (identified cases of child abuse (e.g. from protective service agencies); CAPI) "at the end of the intervention"# (15 months)	ES (d): 0.13 (95% CI 0.05, 0.21); Q: 81.46 P<0.001; P<0.01 (29 treated subsamples, N=NR (~2,900)) Moderator effects (weighted multiple linear regression analyses): More recent studies had weaker effect sizes (P<0.01)
Child maltreatment (identified cases of child abuse (e.g. from protective service agencies); CAPI) "follow up effect"~ (28.6 months)	ES (d): 0.17 (95% CI -0.01, 0.36); Q: 4.29 P=NS; P=NS (7 treated subsamples, N=NR) (~700)
<b>Who</b> could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?	
All outcomes	Test for moderating effects of study characteristics: weighted multiple linear regression analyses (wherever at least 15 studies were available per analysis) <ul style="list-style-type: none"> <li>Interventions led by professionals had stronger effects than those led by paraprofessionals/lay persons with regard to child mental health (P&lt;0.05)</li> <li>Selective prevention programs led by professionals had stronger effects on child mental health than selective prevention led by paraprofessionals (P&lt;0.02)</li> </ul>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
All outcomes	<ul style="list-style-type: none"> <li>Most interventions were delivered exclusively in parental homes; 16 in hospitals; 6 in community; 26 combined home visits with other locations (e.g. support group meetings in the community)</li> </ul>
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
All outcomes	<ul style="list-style-type: none"> <li>Approximately 2/3 of the interventions worked with families at risk (82/133)</li> <li>The majority of interventions included only mothers (107/133)</li> <li>On average, parents were 24.3 years (SD: 4.7), 78.8% were expecting or had just given birth to their first child; 58% were married; 21% cohabiting; 59% were members of ethnic minorities; 56% had completed high school</li> </ul>
	Test for moderating effects of study characteristics: weighted multiple linear regression analyses (wherever at least 15 studies were available per analysis) <ul style="list-style-type: none"> <li>Interventions focused exclusively on mothers had larger effects on parental mental health than interventions with couples (P&lt;0.05)</li> </ul>
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
All outcomes	<ul style="list-style-type: none"> <li>Most interventions commenced after childbirth (86/133); 10/133 were held in pregnancy exclusively; 38/133 were held during pregnancy and after childbirth</li> <li>The average length of intervention was 15.0 months (SD: 13.7, range 1 day to 60 months)</li> <li>Attended 20 meetings on average (SD: 50.4, range 1-421)</li> </ul>
	Test for moderating effects of study characteristics: weighted multiple linear regression analyses (wherever at least 15 studies were available per analysis) <ul style="list-style-type: none"> <li>Inclusion of before-birth component did not moderate the size of the observed effects (parenting quality, parental stress, child abuse/neglect, health promoting behaviour, cognitive development, social development, child mental health, or parental mental health) (P=NS)</li> <li>Interventions that started after childbirth had stronger effects on cognitive development of the child than other interventions (P&lt;0.05)</li> <li>Longer interventions had, on average, weaker effects of parenting quality (P&lt;0.001) and on social development (P&lt;0.001) <ul style="list-style-type: none"> <li>Interventions lasting 3-6 months had the greatest effects on parenting quality, followed by shorter and longer</li> <li>Interventions lasting 3-6 months had the greatest effects on cognitive development, followed by shorter and longer</li> </ul> </li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	

All outcomes	<ul style="list-style-type: none"> <li>• Main goals of the interventions: <ul style="list-style-type: none"> <li>○ Teaching infant care (e.g. ways to soothe the baby, 86%)</li> <li>○ Promoting parental sensitivity and responsiveness (reading baby's signals and responding adequately, 82%)</li> <li>○ Promoting cognitive stimulation of the child (45%)</li> <li>○ Counselling (38%)</li> <li>○ Discussion of future planning/family planning (25%)</li> <li>○ Health promotion (27%)</li> <li>○ Prevention of child abuse (21%)</li> <li>○ Promotion of couple adjustment/marital adjustment (17%)</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>• Only interventions targeted at promoting parental sensitivity and responsiveness promoted social development of the child, such as secure attachment (<math>P &lt; 0.001</math>, vs. <math>P = NS</math>); effect size was significantly larger in these interventions than those that did not have this goal [95% CI did not overlap]</li> <li>• Interventions that focused on health behaviour increased this behaviour, but not interventions focused on other goals (<math>P &lt; 0.001</math> vs. <math>P = NS</math>) [95% CI did not overlap]</li> <li>• Only interventions with an explicit focus on improving the couple relationship had a significant effect on couple adjustment (<math>P &lt; 0.01</math> vs. <math>P &lt; 0.20</math>) [however the 95% CI for both groups of studies overlapped; therefore not a stronger effect for interventions with a couple focus]</li> <li>• No clear differences seen when comparing interventions with an explicit focus on abuse/neglect prevention (and those that did not) on incidence of child abuse and neglect</li> <li>• No clear differences seen when comparing interventions with an explicit focus on promoting cognitive development (and those that did not) on cognitive development)</li> </ul> <p>Test for moderating effects of study characteristics: weighted multiple linear regression analyses (wherever at least 15 studies were available per analysis)</p> <ul style="list-style-type: none"> <li>• Inclusion of prevention focus (universal vs. selective) did not moderate the size of the observed effects (parenting quality, parental stress, child abuse/neglect, health promoting behaviour, cognitive development, social development, child mental health, or parental mental health) (<math>P = NS</math>)</li> <li>• Interventions held in a group format had larger effects than those delivered to an individual/couple on parental health promoting behaviours (<math>P &lt; 0.05</math>), but weaker effect on social development of the child (<math>P &lt; 0.05</math>)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?</b>	
NR	
<b>What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?</b>	
<p>“The below-average effects of longer interventions on two outcome variables might first indicate that longer interventions focus on families with more severe problems that are difficult to change... As a second explanation, longer interventions may be associated with lower retention rates, which could reduce intervention effects... the longest interventions may not be very goal directed, which could impair their results”</p> <p>“professionally led interventions would incur higher costs”</p>	
<b>What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?</b>	
<p>“Because of the fact that pregnancy itself is a very busy and challenging period, [the] results indicate that it may be advisable to offer interventions before the actual onset of pregnancy... As parenting demands and opportunities for promoting child development emerge after the birth of the child, interventions starting after birth seem to be well suited for reducing parenting stress and promoting positive parenting and child development. This suggestion is supported by the stronger effect of interventions with a postnatal component on cognitive development. In these intervention, parents can receive information about stimulation that would be appropriate for the particular age of the child”</p> <p>“As many health promoting behaviors are early to learn (e.g. child immunization schedules), a group format of parenting education courses seems to be sufficient to promote this behavior”</p>	

\*All calculations were performed using random-effects models

#Average length of intervention was 15 months (SD: 13.7)

~Follow up effects – average time interval between end of intervention and follow up was 28.6 months (SD: 42.6)



**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BITSEA: Brief Infant-Toddler Social and Emotional Assessment; BSID: Bayley Scales of Infant Development; CAPI: Child Abuse Potential Inventory; CBCL: Child Behavior Checklist; CES-D: Center for Epidemiological Studies Depression Scale; CI: confidence interval; EPDS: Edinburgh Postnatal Depression Scale; ES (d): effect size; HOME: Home Observation for Measurement of the Environment; MDI: Mental Development Index; N: number; NCATS: Nursing Child Assessment Teaching Scale; NR: not reported; NS: not-significant; P: P value; PDI: Psychomotor Development Index; PSI: Parenting Stress Index; Q: test of homogeneity of the effect size; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SD: standard deviation; STAI: State-Trait Anxiety Inventory; USA: United States of America

**Table 11: Evidence table for Shaw 2006<sup>9</sup>**

<b>Review ID</b>	Shaw 2006	
<b>Search date</b>	1966 to 2005	
<b>Review method</b>	Narrative synthesis	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	22 RCTs (including 1 cRCT)	
<b>No. participants in relevant studies</b>	14,436	
<b>Location/setting</b>	Australia: 5 RCTs; Canada: 5 RCTs; Ireland: 1 RCT; UK: 3 RCTs; USA: 8 RCTs	
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 7/11 ('moderate' quality)	
<b>Quality of relevant studies</b>	14/22 RCTs scored $\geq 3/5$ using the Jadad Scale	
<b>Review objective</b>	To examine the published RCT evidence on the effectiveness of postpartum support programs to improve maternal knowledge, attitudes, and skills related to parenting, maternal mental health, maternal quality of life and maternal physical health	
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs were included; <u>interventions</u> : interventions pertaining directly to therapy or prevention in postnatal women, and initiated within the 1 <sup>st</sup> year after birth following the 3 <sup>rd</sup> stage of labour were included; studies of lactation suppression, endometritis, hypertension disorders, postoperative analgesia, intrapartum interventions and prenatal interventions were excluded; <u>outcomes</u> : studies measuring at least 1 outcome in postnatal women were included (maternal knowledge, attitudes and skills related to parenting, maternal mental health, maternal quality of life, maternal physical health); <u>other</u> : studies fully published in the English language; conducted in Canada, USA, Europe, Australia or New Zealand were included	
<b>Participant population</b>	Postpartum mothers; low-risk (e.g. primiparas following uncomplicated pregnancies) and high risk populations (e.g. families at risk for dysfunction or child abuse; low income families; mothers at high risk for postpartum depression; teenage mothers)	
<b>Intervention</b>	Postpartum support programs (in forms such as: telephone calls, individual home or clinic visits or group visits): defined as interpersonal interactions between postpartum women and trained individuals or health care professions; interventions varied in duration, from 1 visit, 1 time instruction, or 1 interview to 18 months	
<b>Comparator</b>	Predominately standard/usual care	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to one year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

<sup>9</sup> green shading indicates results significantly in favour of the intervention

<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Trials with primiparous women only</i>	
Fully immunised babies	Education in family planning and health by social worker, nurse practitioner and paediatrician (1 RCT, N=243): increased
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Trials with general unselected post-partum population without previously identified risk</i>	
Attachment	Extended hospital and home contacts (1 RCT; N=321): no effect
<i>Trials with primiparous women only</i>	
Mother-infant relationship at 27 weeks: interaction, cooperation, appropriateness of play and sensitivity	Frequent educational visits to paediatrician for low-income women (1 RCT, N=47): better in intervention group
<i>Trials with women at high-risk for family dysfunction and child abuse</i>	
Parent-infant interaction (HOME)	6 weekly nurse home visits and case conferencing by paediatrician and social worker (1 RCT, N=181): improved
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Trials with general unselected postpartum population without previously identified risk</i>	
Maternal anxiety or postpartum depression	Early provider hospital visits combined with 24 hour telephone access after discharge (1 RCT, N=251): no effect
Depressive symptoms	Home visit by registered nurse within 48 hours (1 RCT, N=1,014): no effect
Maternal anxiety	Phone call at 48 hours plus home visit by nurse 3-4 days (1 RCT N=586): no effect
Postpartum depression and SF-36 scores	An early postnatal check-up (1 RCT, N=683): no effect
Postpartum depression	Home visit day 3 or 4 (1 RCT, N=1,163): no effect
SF-36 mental component; SF-36 physical component; postpartum depression (Edinburgh Postnatal Depression Scale)	Tailored care by midwives based on needs assessment and guidelines (1 RCT, N=2,064): improved for SF-36 mental health component (P=0.002) and Edinburgh Postnatal Depression Scale score (P=0.010)
SF-35 scores; Edinburgh Postnatal Depression Scores at 6 months	Support by trained postnatal workers plus usual care (1 RCT, N=623): no effect
Postpartum psychological disorders	1 individualised midwife-led stress de-briefing session (1 RCT, N=1,745): no effect
Personal wellbeing (feelings and capabilities) or relationships	Interview by trained health visitor (support for relationship issues) (1 RCT, N=1,069): no effect
Maternal psychosocial morbidity	1 midwife-led debriefing session (1 RCT, N=1,041): no effect
Summary	In 10 RCTs that enrolled an unselected population, only 1 reported a statistically significant benefit on depression, anxiety or quality of life
<i>Trials with primiparous women only</i>	
Postpartum depression	Public health nurse telephone call at 1-2 weeks (1 RCT, N=972): no effect
SF-36 scores, Edinburgh Postnatal Depression Scale scores, social support measures	3 groups (self-help manual vs. support group vs. both) (1 RCT, N=1,004): no difference
Maternal fatigue, "feeling miserable", desire to stay indoors	Trained community mother visits plus standard public health nurse support (1 RCT, N=262): improved
<i>Trials with women at high-risk for family dysfunction and child abuse</i>	
Scores on Parenting Stress Index and Edinburgh Postnatal Depression Scale	6 weekly nurse home visits and case conferencing by paediatrician and social worker (1 RCT, N=181): improved for primiparous women only (P=0.003)
Depressive symptoms (Edinburgh Postnatal Depression Scale)	Telephone-based peer support from trained mother (1 RCT, N=42): decreased depressive symptoms (P=0.01)

<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Trials with general unselected post-partum population without previously identified risk</i>	
Maternal knowledge of infant care	Early provider hospital visits combined with 24 hour telephone access after discharge (1 RCT, N=251): no effect
Maternal confidence in caring for her infant, knowledge and skills	Single public health visit within 21 days of delivery (1 RCT, N=156): increased confidence, no effect on maternal knowledge or skill
<i>Trials with primiparous women only</i>	
Maternal smoking and infant care behaviours	Public health nurse telephone call at 1-2 weeks (1 RCT, N=972): no effect
Mothers knowledge	Single midwifery visit (1 RCT, N=100): no effect
Maternal confidence at 2 weeks, breastfeeding rates at 6 months	Home visiting by public health nurse (1 RCT, N=733): no effect
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Trials with general unselected postpartum population without previously identified risk</i>	
Maternal satisfaction	Home visit by registered nurse within 48 hours (1 RCT, N=1,014): increased
Maternal satisfaction with service	Phone call at 48 hours plus home visit by nurse 3-4 days (1 RCT, N=586): no effect
Maternal satisfaction	Home visit day 3 or 4 (1 RCT, N=1,163): greater
<i>Trials with women at high-risk for family dysfunction and child abuse</i>	
Satisfaction with service	6 weekly nurse home visits and case conferencing by paediatrician and social worker (1 RCT, N=181): increased
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Trials with general unselected post-partum population without previously identified risk</i>	
Abuse, neglect, health care use	Extended hospital and home contacts (1 RCT; N=321): no effect

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; cRCT: cluster-randomised controlled trial; HOME: Home Observation for Measurement of the Environment; N: number; NR: not reported; NS: non-significant; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SF-36: Short Form 36 Health Survey; UK: United Kingdom; USA: United States of America

## Kangaroo care interventions

**Table 12: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review	
		Conde-Agudelo 2014	Dodd 2005
STUDY ID	Acolet 1989		✓ (quasi-experimental, N=14)
	Ali 2009	✓ (RCT, N=114)	
	Anderson 1998		✓ (RCT, N=84)
	Bauer 1996		✓ (non-experimental comparative, N=11)
	Bauer 1997		✓ (non-experimental comparative, N=22)
	Bauer 1998		✓ (non-experimental comparative, N=27)
	Blaymore Bier 1996	✓ (RCT, N=50)	✓ (RCT, N=50)
	Bohnhorst 2001		✓ (non-experimental comparative, N=22)
	Boo 2007	✓ (RCT, N=128)	
	Bosque 1995		✓ (non-experimental comparative, N=8)
	Cattaneo 1998	✓ (RCT, N=285)	✓ (RCT, N=285)
	Charpak 1994		✓ (other comparative, N=332)
	Charpak 1997	✓ (RCT, N=777)	✓ (RCT, N=746)
	Charpak 2001		✓ (RCT, N=746)
	Christensson 1996		✓ (RCT, N=44)
	Chwo 2002		✓ (RCT, N=34)
	Eka Pratiwi	✓ (RCT, N=93)	
	Feldman 2002		✓ (other comparative, N=146)
	Fischer 1998		✓ (non-experimental comparative, N=20)
	Fohe 2000		✓ (non-experimental comparative, N=53)
	Gathwala 2008	✓ (RCT, N=110)	
	Gazzolo 2000		✓ (non-experimental comparative, N=5)
	Ghavane 2012	✓ (RCT, N=140)	
	Gray 2000		✓ (RCT, N=30)
	Kadam 2005	✓ (RCT, N=89)	
	Kambarami 1998		✓ (other comparative, N=74)
	Legault 1995		✓ (quasi-experimental, N=61)
	Ludington 1990		✓ (non-experimental comparative, N=8)
	Ludington-Hoe 1991		✓ (non-experimental comparative, N=12)
	Ludington-Hoe 1994		✓ (RCT, N=25)
	Ludington-Hoe 2000		✓ (RCT, N=29)
	Messmer 1997		✓ (non-experimental comparative, N=20)
Mooney 1997		✓ (non-experimental comparative, N=15)	
Nagai 2010	✓ (RCT, N=73)		
Neu 2010	✓ (RCT, N=60)		

	Ohgi 2002		✓ (other comparative, N=53)
	Ramanathan 2001	✓ (RCT, N=28)	✓ (RCT, N=28)
	Roberts 2000	✓ (RCT, N=30)	
	Rojas 2003	✓ (RCT, N=60)	
	Sloan 1994	✓ (RCT, N=300)	
	Suman 2008	✓ (RCT, N=220)	
	Tessier 1998		✓ (RCT, N=488)
	Tornhage 1998		✓ (quasi-experimental, N=18)
	Whitelaw 1988	✓ (RCT, N=71)	✓ (RCT, N=71)
	Worku 2005	✓ (RCT, N=123)	

Abbreviations: N: number; RCT: randomised controlled trial

**Table 13: Evidence table for Conde-Agudelo 2014<sup>10</sup>**

<b>Review ID</b>	Conde-Agudelo 2014
<b>Search date</b>	Database inceptions to March 2014
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	18 RCTs
<b>No. participants in relevant studies</b>	2,751
<b>Location/setting</b>	Australia: 1 RCT; Colombia: 1 RCT; Ecuador: 1 RCT; Ethiopia: 1 RCT; India: 6 RCTs; Indonesia: 1 RCT; Madagascar: 1 RCT; Malaysia: 1 RCT; UK: 1 RCT; USA: 3 RCTs; multi-country (Ethiopia, Indonesia, Mexico): 1 RCT
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 10/11 ('high' quality)
<b>Quality of relevant studies</b>	Review authors' summary: no study adequately addressed all 7 domains; 2 addressed 6 domains; methodological quality was mixed, though sensitivity analysis suggested inclusion of high risk of bias trials did not affect general direction of findings/size of effect for main outcomes
<b>Review objective</b>	To determine whether there is evidence to support the use of KMC in LBW infants as an alternative to conventional neonatal care before or after the initial period of stabilisation with conventional care
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs and cRCTs were included; qRCTs were excluded; <u>participants</u> : LBW infants (birthweight < 2500 g), regardless of gestational age; <u>interventions</u> : comparisons of KMC (continuous or intermittent) with conventional neonatal care in LBW infants were included, as were comparisons of early versus late onset KMC in LBW infants; studies where KMC was in a package of neonatal care interventions were excluded; <u>outcomes</u> : studies reporting on physiological parameters only were excluded; primary review outcomes were most representative of clinically important measures of effectiveness and safety (mortality; severe infection; severe illness; growth; neurodevelopmental and neurosensory impairment); secondary outcomes included other clinical measures of effectiveness, mother-infant attachment or interaction, satisfaction with care, home environment and father involvement, and costs of care; <u>other</u> : study abstracts were only included if there was sufficient information on study methods to allow eligibility and risk of bias assessment
<b>Participant population</b>	LBW infants before or after stabilisation and their mothers; 5 RCTs included infants from multiple pregnancies; 6 RCTs included only infants with birthweight ≤ 1500 g; the mean/median age of LBW infants at enrolment varied from 10 hours to 32 days (with mean/median age at enrolment ≤ 10 days in 9 RCTs, 11-20 days in 6 RCTs and 20-32 days in 3 RCTs); the mean/median weight of infants at recruitment ranged from 968 g to 2076 g
<b>Intervention</b>	16 RCTs: KMC in LBW infants after stabilisation; 1 RCT: KMC in LBW infants before stabilisation; 1 RCT: early onset KMC compared with late onset KMC in relatively stable

<sup>10</sup> green shading indicates results significantly in favour of the intervention

	<p>LBW infants.</p> <p>The mean/median duration of KMC per day was &lt; 2 hours in 6 RCTs, 4-7 hours in 2 RCTs, 8-14 hours in 5 RCT, and ≥ 20 hours in 3 RCTs (2 further RCTs used continuous KMC)</p> <p>The most common scheme of follow up was weekly until 40 weeks' postmenstrual age; and monthly thereafter until 3-6 months; in 5 RCTs the last follow up was at 6 months; infants were followed up to 12 month in only 2 RCTs</p>
<b>Comparator</b>	17 RCTs: no KMC; 1 RCTs: early onset vs. late onset KMC
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
<i>KMC versus conventional neonatal care</i>	
Weight gain (g/day) (stabilised infants) at latest follow up (at discharge or 40 weeks' postmenstrual age up to six months of age or six month follow up)	MD (R): 3.74 (95% CI 1.92, 5.56); I <sup>2</sup> 87%; P=0.000056 (10 RCTs, N=1,072)
Length gain (cm/week) (stabilised infants) at latest follow up (40 weeks' postmenstrual age to three months of age)	MD (F): 0.29 (95% CI 0.27, 0.31); I <sup>2</sup> 0%; P<0.00001 (2 RCTs, N=251)
Head circumference gain (cm/week) (stabilised infants at latest follow up) (at discharge or 40 weeks' postmenstrual age to three months of age)	MD (R): 0.18 (95% CI 0.09, 0.27); I <sup>2</sup> 71%; P=0.000092 (3 RCTs, N=369)
<b>Single study results</b>	
<i>KMC versus conventional neonatal care</i>	
Psychomotor development (Griffith quotients) at 12 months' corrected age: locomotion, personal-social, hand-eye coordination, audition and language, execution, and all criteria	<p>Locomotion: MD (F): 2.25 (95% CI -0.45, 4.95) (1 RCT, N=579)</p> <p>Personal-social: MD (F): 0.97 (95% CI -1.27, 3.21) (1 RCT, N=579)</p> <p>Hand-eye coordination: MD (F): 0.57 (95% CI -1.25, 2.39) (1 RCT, N=579)</p> <p>Audition, language: MD (F): 1.29 (95% CI -0.98, 3.56) (1 RCT, N=579)</p> <p>Execution: MD (F): 0.30 (95% CI -1.50, 2.10) (1 RCT, N=579)</p> <p>All criteria: MD (F): 1.05 (95% CI -0.75, 2.85) (1 RCT, N=579)</p>
Cerebral palsy at 12 months' corrected age	RR (F): 0.65 (95% CI 0.21, 2.02) (1 RCT, N=588)
Deafness at 12 months' corrected age	RR (F): 0.30 (95% CI 0.03, 2.90) (1 RCT, N=588)
Visual impairment at 12 months' corrected age	RR (F): 0.91 (95% CI 0.53, 1.56) (1 RCT, N=588)
<i>Early versus late KMC</i>	
Weight gain (g) at 24 hours post birth	MD (F): 39.16 (95% CI 11.11, 67.21) (1 RCT, N=73)
Weight gain (g) at 48 hours post birth	MD (F): 43.30 (95% CI 5.49, 81.11) (1 RCT, N=73)
Weight gain (g) at 2 weeks of age	MD (F): 12.14 (95% CI -83.18, 107.46) (1 RCT, N=73)
Weight gain (g) at 4 weeks of age	MD (F): 58.85 (95% CI -116.93, 234.63) (1 RCT, N=73)
Stunting at 6-12 months of age	RR (F): 0.83 (95% CI 0.46, 1.48) (1 RCT, N=55)
Severe stunting at 6-12 months of age	RR (F): 0.67 (95% CI 0.17, 2.73) (1 RCT, N=55)
Wasting at 6-12 months of age	RR (F): 0.10 (95% CI 0.01, 1.77) (1 RCT, N=55)
Severe wasting at 6-12 months of age	RR (F): 0.00 (95% CI 0.00, 0.00) (1 RCT, N=55)
Underweight at 6-12 months of age	RR (F): 0.49 (95% CI 0.21, 1.14) (1 RCT, N=55)
Severe underweight at 6-12 months of age	RR (F): 0.22 (95% CI 0.03, 1.88) (1 RCT, N=55)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
<i>KMC versus conventional neonatal care</i>	
Mortality at discharge or 40-41 weeks' postmenstrual age	RR (F): 0.60 (95% CI 0.39, 0.92); I <sup>2</sup> 0%; P=0.02 (8 RCTs, N=1,736)
Mortality at 6 months of age or 6 month follow up	RR (F): 0.99 (95% CI 0.48, 2.02); I <sup>2</sup> 0%; P=0.96 (2 RCTs, N=354)
Mortality at latest follow up (discharge or 40-41 weeks' postmenstrual age up to 12 months' corrected age)	RR (F): 0.67 (95% CI 0.48, 0.95); I <sup>2</sup> 0%; P=0.03 (11 RCTs, N=2,167)
Severe infection/sepsis (stabilised infants) at latest follow up (discharge or 40-41 weeks' postmenstrual age to 6 months' corrected age)	RR (F): 0.56 (95% CI 0.40, 0.78); I <sup>2</sup> 0%; P=0.008 (7 RCTs, N=1,343)
Nosocomial infection/sepsis (stabilised infants)(at discharge or 40-41 weeks' postmenstrual age)	RR (F): 0.45 (95% CI 0.27, 0.76); I <sup>2</sup> 0%; P=0.001 (3 RCTs, N=913)
Mild/moderate infection or illness at latest follow up (stabilised infants) (40-41 weeks' postmenstrual age to 6 months of age)	RR (R): 1.28 (95% CI 0.87, 1.88); I <sup>2</sup> 82%; P=0.21 (4 RCTs, N=1,266)
<b>Single study results</b>	
<i>KMC versus conventional neonatal care</i>	
Mortality at 12 months' corrected age	RR (F): 0.57 (95% CI 0.27, 1.17) (1 RCT, N=693)
Severe illness at 6 months follow up (stabilised infants)	RR (F): 0.30 (95% CI 0.14, 0.67) (1 RCT, N=283)
Lower respiratory tract disease at 6 months follow up (stabilised infants)	RR (F): 0.37 (95% CI 0.15, 0.89) (1 RCT, N=283)
Diarrhoea at 6 months follow up (stabilised infants)	RR (F): 0.65 (95% CI 0.35, 1.20) (1 RCT, N=283)
<i>Early versus late KMC</i>	
Mortality at 4 weeks of age	RR (F): 1.95 (0.18, 20.53) (1 RCT, N=73)
Mortality at 6 months of age	RR (F): 1.00 (95% CI 0.15, 6.72) (1 RCT, N=72)
Morbidity at 4 weeks of age	RR (F): 0.49 (95% CI 0.18, 20.53) (1 RCT, N=73)
Severe infection at 4 weeks of age	RR (F): 0.42 (95% CI 0.12, 1.49) (1 RCT, N=73)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>KMC versus conventional neonatal care</i>	
Mother-infant attachment: mother's responses to the infant according to interval between birth and start of intervention, and infant admission to NICU: Mother's sensitivity	Interval of > 14 days: MD (F): 0.06 (95% CI 0.01, 0.11) (1 RCT, N=141) Interval of 1-2 days: MD (F): 0.02 (95% CI -0.02, 0.06) (1 RCT, N=170) Interval of 3-14 days: MD (F): -0.01 (95% CI -0.05, 0.03) (1 RCT, N=177) Infants admitted to NICU: MD (F): 0.02 (95% CI -0.04, 0.08) (1 RCT, N=82) Infants not admitted to NICU: MD (F): 0.02 (95% CI -0.00, 0.04) (1 RCT, N=406)
Mother-infant attachment: mother's responses to the infant according to interval between birth and start of intervention, and infant admission to NICU: Mother's response to child's distress	Interval of 1-2 days: MD (F): -0.03 (95% CI -0.08, 0.02) (1 RCT, N=170) Interval of 3-14 days: MD (F): 0.01 (95% CI -0.03, 0.05) (1 RCT, N=177) Interval of > 14 days: MD (F): 0.01 (95% CI -0.04, 0.06) (1 RCT, N=141) Infants admitted to NICU: MD (F): 0.05 (95% CI -0.01, 0.11) (1 RCT, N=82) Infants not admitted to NICU: MD (F): -0.02 (95% CI -0.05, 0.01) (1 RCT, N=406)
Mother-infant attachment: mother's responses to the infant according to interval between birth and start of intervention, and infant admission to NICU: Mother's response to child's socio-emotional growth fostering	Interval of 1-2 days: MD (F): 0.01 (95% CI -0.04, 0.06) (1 RCT, N=170) Interval of 3-14 days: MD (F): -0.02 (95% CI -0.06, 0.02) (1 RCT, N=177) Interval of > 14 days: MD (F): 0.05 (95% CI -0.00, 0.10) (1 RCT, N=141) Infants admitted to NICU: MD (F): -0.05 (95% CI -0.12, 0.02) (1 RCT, N=82)

	Infants not admitted to NICU: MD (F): 0.02 (95% CI -0.01, 0.05) (1 RCT, N=406)
Mother-infant attachment: mother's responses to the infant according to interval between birth and start of intervention, and infant admission to NICU: Mother's response to child's cognitive growth	Interval of 1-2 days: MD (F): 0.02 (95% CI -0.04, 0.08) (1 RCT, N=170) Interval of 3-14 days: MD (F): -0.04 (95% CI -0.10, 0.02) (1 RCT, N=177) Interval of > 14 days: MD (F): 0.07 (95% CI 0.00, 0.14) (1 RCT, N=141) Infants admitted to NICU: MD (F): -0.07 (95% CI -0.17, 0.03) (1 RCT, N=82) Infants not admitted to NICU: MD (F): 0.03 (95% CI -0.01, 0.07) (1 RCT, N=406)
Mother-infant attachment: infant's responses to the mother according to interval between birth and start of intervention, and infant admission to NICU: Clarity of infant cues	Interval of 1-2 days: MD (F): 0.01 (95% CI -0.04, 0.06) (1 RCT, N=170) Interval of 3-14 days: MD (F): 0.02 (95% CI -0.03, 0.07) (1 RCT, N=177) Interval of > 14 days: MD (F): 0.0 (95% CI -0.05, 0.05) (1 RCT, N=141) Infants admitted to NICU: MD (F): -0.01 (95% CI -0.07, 0.05) (1 RCT, N=82) Infants not admitted to NICU: MD (F): 0.02 (95% CI -0.01, 0.05) (1 RCT, N=406)
Mother-infant attachment: infant's responses to the mother according to interval between birth and start of intervention, and infant admission to NICU: Responsiveness	Interval of > 14 days: MD (F): 0.05 (95% CI 0.01, 0.09) (1 RCT, N=141) Interval of 1-2 days: MD (F): -0.02 (95% CI -0.06, 0.02) (1 RCT, N=170) Interval of 3-14 days: MD (F): 0.02 (95% CI -0.02, 0.06) (1 RCT, N=177) Infants admitted to NICU: MD (F): -0.01 (95% CI -0.07, 0.05) (1 RCT, N=82) Infants not admitted to NICU: MD (F): 0.02 (95% CI -0.01, 0.05) (1 RCT, N=406)
Total mother-infant attachment score at 3 month follow up	MD (F): 6.24 (95% CI 5.57, 6.91) (1 RCT, N=100)
Mother-infant attachment: Stress in NICU	Relationship with infant score: MD (F): 1.00 (95% CI 0.35, 1.65) (1 RCT, N=30) Nursery environment score: MD (F): 0.10 (95% CI -0.51, 0.71) (1 RCT, N=30) Infant appearance score: MD (F): 0.0 (95% CI -0.62, 0.62) (1 RCT, N=30) Staff behavioural communication score: MD (F): 0.10 (95% CI -0.95, 1.15) (1 RCT, N=30)
Mother-infant attachment: Interaction at 6 months follow up	Symmetrical co-regulation: MD (F): 16.38 (95% CI 13.61, 19.15) (1 RCT, N=45) Asymmetrical co-regulation: MD (F): -18.31 (95% CI -21.42, -15.20) (1 RCT, N=45) Unilateral regulation: MD (F): 2.12 (95% CI -1.24, 5.48) (1 RCT, N=45)
Social and home environment: HOME environment (total score at 12 months' corrected age)	MD (F): 0.79 (95% CI 0.74, 0.84) (1 RCT, N=238)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>KMC versus conventional neonatal care</i>	
Mother-infant attachment: mother's feelings and perceptions according to interval between birth and start of intervention, and infant admission to NICU: Worry and stress	Interval of 1-2 days: MD (F): 0.31 (95% CI 0.04, 0.58) (1 RCT, N=170) Interval of 3-14 days: MD (F): 0.09 (95% CI -0.20, 0.38) (1 RCT, N=177) Interval of > 14 days: MD (F): -0.29 (95% CI -0.70, 0.12) (1 RCT, N=141) Infants admitted to NICU: MD (F): -0.1 (95% CI -0.60, 0.40) (1 RCT, N=82) Infants not admitted to NICU: MD (F): 0.12 (95% CI -0.06,



	0.30) (1 RCT, N=406)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
<i>KMC versus conventional neonatal care</i>	
Any breastfeeding (stabilised infants) (at discharge or 40-41 weeks' postmenstrual age)	RR (R): 1.20 (95% CI 1.06, 1.36); I <sup>2</sup> 81%; P=0.0054 (9 RCTs, N=1,576)
Any breastfeeding (stabilised infants) (at 1-2 month follow up)	RR (R): 1.33 (95% CI 1.00, 1.78); I <sup>2</sup> 78%; P=0.051 (6 RCTs, N=538)
Any breastfeeding (stabilised infants) (at 3 month follow up)	RR (F): 1.14 (95% CI 1.06, 1.23); I <sup>2</sup> 41%; P=0.00028 (5 RCTs, N=924)
Any breastfeeding (stabilised infants) (at 6 month follow up)	RR (F): 1.12 (95% CI 0.98, 1.29); I <sup>2</sup> 24%; P=0.095 (5 RCTs, N=952)
<b>Single study results</b>	
<i>KMC versus conventional neonatal care</i>	
Mother-infant attachment: mother's feelings and perceptions according to interval between birth and start of intervention, and infant admission to NICU: Sense of competence	Interval 1-2 days: MD (F): 0.41 (95% CI 0.14, 0.68) (1 RCT, N=170) Infants admitted to NICU: MD (F): 0.54 (95% CI 0.07, 1.01) (1 RCT, N=82) Infants not admitted to NICU: MD (F): 0.24 (95% CI 0.05, 0.43) (1 RCT, N=406) Interval of 3-14 days: MD (F): 0.25 (95% CI -0.08, 0.58) (1 RCT, N=177) Interval > 14 days: MD (F): 0.21 (95% CI -0.17, 0.59) (1 RCT, N=141)
Mother-infant attachment: Parenting skills (total score at discharge)	MD (F): -0.40 (95% CI -0.89, 0.09) (1 RCT, N=30)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>KMC versus conventional neonatal care</i>	
Parental and familiar satisfaction	Mother satisfied with the method: RR (F): 1.17 (95% CI 1.05, 1.30) (1 RCT, N=269) Father satisfied with the method : RR (F): 1.02 (95% CI 0.91, 1.14) (1 RCT, N=269) Family satisfied with the method: RR (F): 0.97 (95% CI 0.83, 1.13) (1 RCT, N=269)
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>KMC versus conventional neonatal care</i>	
Mother-infant attachment: mother's feelings and perceptions according to interval between birth and start of intervention, and infant admission to NICU: Social support	Interval of > 14 days: MD (F): -0.47 (95% CI -0.84, -0.10) (1 RCT, N=141) Infants not admitted to NICU: MD (F): -0.2 (95% CI -0.39, -0.01) (1 RCT, N=406) Interval of 1-2 days: MD (F): -0.06 (95% CI -0.35, 0.23) (1 RCT, N=170) Interval of 3-14 days: MD (F): -0.06 (95% CI -0.34, 0.22) (1 RCT, N=177) Infants admitted to NICU: MD (F): -0.05 (95% CI -0.52, 0.42) (1 RCT, N=82)
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
All outcomes	<ul style="list-style-type: none"> <li>Infants were cared for by both doctors and nurses in all but two studies (Ghavane 2012; Neu 2010). In the Ghavane 2012 study, the infants in the KMC group were cared for solely by their mothers, supervised by a trained nurse. In the Neu 2010 study, the supportive intervention that promoted kangaroo holding of preterm infants by their mothers was performed by an experienced nurse.</li> </ul>

<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
All outcomes	<ul style="list-style-type: none"> <li>13 studies were conducted in low- or middle-income countries (India [Ali 2009; Gathwala 2008; Ghavane 2012; Kadam 2005; Ramanathan 2001; Suman 2008]; Ethiopia [Cattaneo 1998, Worku 2005]; Malaysia [Boo 2007]; Madagascar [Nagai 2010]; Indonesia [Cattaneo 1998; Eka Pratiwi 2009]; Ecuador [Sloan 1994]; Colombia [Charpak 1997]; and Mexico [Cattaneo 1998])</li> <li>5 studies were conducted in high-income countries (United States [Blaymore Bier 1996; Neu 2010; Rojas 2003]; United Kingdom [Whitelaw 1988]; and Australia [Roberts 2000])</li> <li>10 studies were performed in neonatal intensive care units of tertiary care, public, maternity, or university hospitals (Ali 2009; Boo 2007; Eka Pratiwi 2009; Kadam 2005; Ramanathan 2001; Roberts 2000; Rojas 2003; Sloan 1994; Suman 2008; Whitelaw 1988)</li> <li>4 in neonatal units of university hospitals (Cattaneo 1998; Gathwala 2008; Nagai 2010; Worku 2005)</li> <li>2 in "kangaroo wards" (KMC infants) and neonatal intensive/intermediate care units of tertiary care hospitals (controls) (Charpak 1997; Ghavane 2012)</li> <li>1 in both hospital and home (Neu 2010)</li> <li>1 in a special care nursery of a hospital (Blaymore Bier 1996)</li> </ul>
Mortality (at discharge or 40-41 weeks' postmenstrual age)	Low/middle-income countries vs. high-income countries <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=0.74</math>, <math>P=0.39</math>, <math>I^2=0\%</math></li> </ul>
Mortality ("at latest follow up") (discharge or 40-41 weeks' postmenstrual age up to 12 months' corrected age)	Low/middle-income countries vs. high-income countries <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=0.72</math>, <math>P=0.40</math>, <math>I^2=0\%</math></li> </ul>
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
All outcomes	<ul style="list-style-type: none"> <li>16 studies evaluated KMC in LBW infants after stabilisation (Ali 2009; Blaymore Bier 1996; Boo 2007; Cattaneo 1998;Charpak 1997; Eka Pratiwi 2009;Gathwala 2008; Ghavane 2012; Kadam 2005;Neu 2010; Ramanathan 2001; Roberts 2000; Rojas 2003; Sloan 1994; Suman 2008; Whitelaw 1988)</li> <li>1 study evaluated KMC in LBW infants before stabilisation (Worku 2005)</li> <li>1 study compared early onset KMC with late onset KMC (Nagai 2010) in relatively stable LBW infants</li> <li>5 studies included infants from multiple pregnancies (Ali 2009; Blaymore Bier 1996; Boo 2007; Charpak 1997; Whitelaw 1988) and six included only infants with birthweight <math>\leq 1500</math> g (Blaymore Bier 1996; Boo 2007; Ghavane 2012; Ramanathan 2001; Rojas 2003; Whitelaw 1988)</li> <li>Infant with major congenital malformations or severe perinatal complications, were excluded in the great majority of included studies</li> <li>The mean or median weight of infants at recruitment ranged from 968 g (Blaymore Bier 1996) to 2076 g (Nagai 2010) (median, 1595 g)</li> </ul>
Mortality (at discharge or 40-41 weeks' postmenstrual age)	Infants entered into the trial before vs. after stabilisation <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=0.04</math>, <math>P=0.84</math>, <math>I^2=0\%</math></li> </ul>
Mortality ("at latest follow up") (discharge or 40-41 weeks' postmenstrual age up to 12 months' corrected age)	Infants entered into the trial before vs. after stabilisation <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=0.44</math>, <math>P=0.51</math>, <math>I^2=0\%</math></li> </ul>
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
All outcomes	<ul style="list-style-type: none"> <li>The mean or median age of LBW infants at enrolment varied from 10 hours (Worku 2005) to 32 days (Roberts 2000) (median, 12 days).</li> <li>Median or mean infant age at enrolment was <math>\leq 10</math> days in 9 studies (Ali 2009; Cattaneo 1998;Charpak 1997;Gathwala 2008; Eka Pratiwi 2009; Kadam 2005; Nagai 2010; Suman 2008; Worku 2005;)</li> <li>11 to 20 days in six studies (Ghavane 2012; Ramanathan 2001; Neu 2010; Rojas 2003; Sloan 1994; Whitelaw 1988)</li> <li>20 to 32 days in 3 studies (Blaymore Bier 1996; Boo 2007; Roberts 2000)</li> <li>In the study that compared early onset KMC with late onset KMC (Nagai</li> </ul>

	<p>2010), the mean age at initiation of KMC was 19.8 hours in the early onset KMC group and 33.0 hours in the late onset KMC</p> <ul style="list-style-type: none"> <li>The mean or median duration of intermittent KMC per day was &lt; 2 hours in 6 studies (Boo 2007; Blaymore Bier 1996; Neu 2010; Roberts 2000; Rojas 2003; Whitelaw 1988), 4 to 7 hours in 2 studies (Ali 2009; Ramanathan 2001), 8 to 14 hours in five studies (Eka Pratiwi 2009; Gathwala 2008; Ghavane 2012; Kadam 2005; Suman 2008), and ≥ 20 hours in 3 studies (Cattaneo 1998; Charpak 1997; Sloan 1994)</li> <li>The studies that evaluated KMC in LBW infants before stabilisation (Worku 2005) and compared early onset KMC with late onset KMC (Nagai 2010) used continuous KMC</li> </ul> <p>Duration of intervention:</p> <ul style="list-style-type: none"> <li>10 days maximum (Blaymore Bie 1996)</li> <li>Mean 12.7 [SD 5.0] days (Boo 2007)</li> <li>Mean 15 [SD 15] days (Rojas 2003)</li> <li>Mean 25.7 [SD 6.9]; range 15-43 days (Ali 2009)</li> <li>Mean 33.8 [SD 15.1] days (Suman 2008)</li> <li>8 weeks (Neu 2010)</li> <li>3 months (Gathwala 2008)</li> <li>68% at 1 month, 47% at 1.5 months, 20% at 2 months; 7% at 3 months (Sloan 1994)</li> <li>Until discharge (Kadan 2005)</li> <li>“as long as possible” (Nagai 2010)</li> <li>NR (Cattaneo 1998; Charpak 1997; Eka Pratiwi 2009; Ghavane 2012; Ramanathan 2001; Roberts 2000; Whitelaw 1988; Worku 2005)</li> </ul>
Mortality (at discharge or 40-41 weeks' postmenstrual age)	<p>&lt; 2 hours/day vs. 8-15 hours/day vs. ≥ 20 hours/day</p> <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=1.27</math>, <math>P=0.53</math>, <math>I^2=0\%</math></li> </ul> <p>Infant age ≤ 10 days at initiation vs. &gt; 10 days at initiation</p> <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=0.83</math>, <math>P=0.36</math>, <math>I^2=0\%</math></li> </ul>
Mortality (“at latest follow up”) (discharge or 40-41 weeks' postmenstrual age up to 12 months' corrected age)	<p>&lt; 2 hours/day vs. 8-15 hours/day vs. ≥ 20 hours/day</p> <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=1.46</math>, <math>P=0.48</math>, <math>I^2=0\%</math></li> </ul> <p>Infant age ≤ 10 days at initiation vs. &gt; 10 days at initiation</p> <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=2.30</math>, <math>P=0.13</math>, <math>I^2=56.4\%</math></li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b>	
All outcomes	<ul style="list-style-type: none"> <li>The trials were conducted under a variety of hospital conditions, regulations, and routines. However, there was remarkable consistency in the descriptions of the KMC intervention across the trials.</li> <li>In all instances, the intervention included SSC and encouraged breastfeeding</li> <li>Early neonatal discharge from hospital was only considered in the Colombian study (Charpak 1997)</li> <li>Among studies evaluating KMC in stabilised LBW infants, 13 used intermittent KMC (Ali 2009; Blaymore Bier 1996; Boo 2007; Eka Pratiwi 2009; Gathwala 2008; Ghavane 2012; Kadam 2005; Neu 2010; Ramanathan 2001; Roberts 2000; Rojas 2003; Suman 2008; Whitelaw 1988) and three used continuous KMC (Cattaneo 1998; Charpak 1997; Sloan 1994)</li> <li>In studies evaluating intermittent KMC, the intervention was a combination of SSC and radiant warmer/incubator</li> </ul>
Mortality (at discharge or 40-41 weeks' postmenstrual age)	<p>Intermittent vs. continuous kangaroo care:</p> <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=0.00</math>, <math>P=0.98</math>, <math>I^2=0\%</math></li> </ul>
Mortality (at 6 months' of age or 6 month follow up)	<p>Intermittent vs. continuous kangaroo care:</p> <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=0.00</math>, <math>P=0.96</math>, <math>I^2=0.0\%</math></li> </ul>
Mortality (“at latest follow up”) (discharge or 40-41 weeks' postmenstrual age up to 12 months' corrected age)	<p>Intermittent vs. continuous kangaroo care:</p> <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=0.00</math>, <math>P=0.99</math>, <math>I^2=0\%</math></li> </ul>
Severe infection/sepsis (stabilised infants) (“at latest follow up”)	<p>Intermittent vs. continuous kangaroo care:</p> <ul style="list-style-type: none"> <li>Test for subgroup differences: <math>\text{Chi}^2=1.55</math>, <math>P=0.21</math>, <math>I^2=35\%</math></li> </ul>

Nosocomial infection/sepsis (stabilised infants) (at discharge or 40-41 weeks' postmenstrual age)	Intermittent vs. continuous kangaroo care: • Test for subgroup differences: $\text{Chi}^2=0.15$ , $P=0.70$ , $I^2=0.0\%$
Mild/moderate infection or illness (stabilised infants) ("at latest follow up") (40-41 weeks' postmenstrual age to 6 months of age)	Intermittent vs. continuous kangaroo care: • Test for subgroup differences: $\text{Chi}^2=0.01$ , $P=0.93$ , $I^2=0.0\%$
Weight gain (g/day) (stabilised infants) ("at latest follow up": at discharge or 40 weeks' postmenstrual age up to 6 months of age or 6 month follow up)	Intermittent vs. continuous kangaroo care: • Test for subgroup differences: $\text{Chi}^2=0.01$ , $P=0.93$ , $I^2=0.0\%$
Any breastfeeding (stabilised infants) (at discharge or 40-41 weeks' postmenstrual age)	Intermittent vs. continuous kangaroo care: • Test for subgroup differences: $\text{Chi}^2=0.35$ , $P=0.55$ , $I^2=0.0\%$
Any breastfeeding (stabilised infants) (at 1-2 month follow up)	Intermittent vs. continuous kangaroo care: • Test for subgroup differences: $\text{Chi}^2=9.91$ , $P=0.00$ , $I^2=90\%$
Any breastfeeding (stabilised infants) (at 3 month follow up)	Intermittent vs. continuous kangaroo care: • Test for subgroup differences: $\text{Chi}^2=5.62$ , $P=0.02$ , $I^2=82\%$
Any breastfeeding (stabilised infants) (at 6 month follow up)	Intermittent vs. continuous kangaroo care: • Test for subgroup differences: $\text{Chi}^2=3.50$ , $P=0.06$ , $I^2=71\%$
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; cm: centimetres; cRCT: cluster randomised controlled trial; (F): fixed effect; g: grams; HOME: Home Observation for Measurement of the Environment; KMC: kangaroo mother care; LBW: low birthweight; MD: mean difference; N: number; NICU: neonatal intensive care unit; NR: not reported; P: P value; (R): random effects; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; UK: United Kingdom; USA: United States of America

**Table 14: Evidence table for Dodd 2005<sup>11</sup>**

<b>Review ID</b>	Dodd 2005
<b>Search date</b>	2003
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	32 studies (13 RCTs; 3 quasi-experimental design; 12 non-experimental comparative design; 4 'other' comparative design)
<b>No. participants in relevant studies</b>	3,581
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 2/11 ('low' quality)
<b>Quality of relevant studies</b>	Not formally assessed: 'limitations' for each study reported in manuscript table
<b>Review objective</b>	To review research on KMC with implications for growth and development in preterm infants
<b>Review eligibility criteria</b>	RCTs, pre-test post-test designs, and other comparative studies were included; reports exploring parent perspectives were examined for attachment and parent-infant interaction findings; theory and research regarding growth in preterm infants was explored
<b>Participant population</b>	LBW and/or preterm newborns

<sup>11</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

<b>Intervention</b>	KMC; though durations/intensities of interventions not clearly reported, they appear to have ranged from 10 minutes of KMC to KMC 24/7 (unclear duration)
<b>Comparator</b>	No KMC (predominately standard/traditional care)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Temperament scores at 6 months	More positive scores in intervention group (1 comparative study, N=53)
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Growth indices at 40 weeks gestation	No difference (1 RCT, N=746)
Head growth	Greater head growth in intervention group (1 RCT, N=746)
Weight gain	Higher in intervention group (21.3 vs. 17.7 g/day) (1 RCT, N=285)
Weight gain	Improved intervention group (1218 vs. 1148 g) (1 RCT, N=488)
Weight gain	Greater weight gain (15.9 vs. 10.6 g/day) (1 RCT, N=28)
Psychomotor scores at 1 year	Similar (1 RCT, N=746)
Weight gain	Higher gain in intervention group (20.8 vs. 10.2 g/day) (1 comparative study, N=74)
Growth at 3 months and 1 year	Less growth (1 comparative study, N=332)
Alert at 3 months	Intervention babies more alert, and less gaze aversion (1 comparative study, N=146)
Scores on Bayley at 6 months	Better scores in intervention group (1 comparative study, N=146)
Scores on Bayley at 6 months	No difference (1 comparative study, N=53)
Scores on Bayley at 12 months	Higher scores in intervention group (1 comparative study, N=53)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
NBAS at 40 weeks	Higher scores for intervention group (1 comparative study, N=53)
Crying at 6 months	Less for intervention group (1 RCT, N=71)
Crying	82% less crying in intervention group (1 RCT, N=30)
Quiet sleep	More in intervention group (19% vs. 9.5%) (1 RCT, N=25)
Behavioural states (quiet sleep, crying, inactive awake)	More beneficial behavioural states in intervention group (quiet sleep: 62% vs. 22%; crying: 2% vs. 6%; inactive awake: 14% vs. 7%) (1 RCT, N=34)
Quiet sleep	More post-test (1 non-experimental comparative study, N=8)
Quiet sleep	No difference post-test (1 non-experimental comparative study, N=8)
Total sleep	Lower post-test (1 non-experimental comparative study, N=8)
Quiet sleep	More post-test (1 non-experimental comparative study, N=20)
Awake time	Less post-test (1 non-experimental comparative study, N=20)
Sleep	More sleep post-test (1 non-experimental comparative study, N=27)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Mortality at 40 weeks gestation	No difference (1 RCT, N=746)
Mortality	No difference (1 RCT, N=285)
Mortality	Lower (1 RCT, N=746)
Nosocomial infection at 40 weeks gestation	Less in intervention group (1 RCT, N=746)
1 year mortality	No difference (1 comparative study, N=332)

<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Father contact at day 5	No difference (1 RCT, N=44)
Sensitivity to infant	Greater in intervention group (1 RCT, N=488)
Parent/infant bonding scales	No difference post-test (1 non-experimental comparative study, N=20)
Maternal interaction and affect at 37 weeks	More positive in intervention group (1 comparative study, N=146)
Sensitivity and HOME scores at 3 months	Intervention parents more sensitive and had better HOME scores (1 comparative study, N=146)
Maternal-infant interaction at 6 months	More in intervention group (1 comparative study, N=146)
HOME scores	No differences (1 comparative study, N=53)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Psychometric scale related to maternal confidence and feelings at discharge	No difference (1 RCT, N=71)
Confidence	Greater in intervention group (1 RCT, N=488)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Maternal comfort with care	Greater in intervention group (1 RCT, N=285)
Mothers preference	Mothers preferred KMC (1 quasi-experimental study, N=61)
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Social support	Lower social support in intervention group (1 RCT, N=488)
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; g: grams; HOME: Home Observation for Measurement of the Environment; KMC: kangaroo mother care; LBW: low birthweight; N: number; NBAS: Neonatal Behavioural Assessment Scale; NR: not reported; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

## Massage interventions

**Table 15: Matrix indicating the studies that were included in the systematic reviews**

		<b>Systematic review</b>
		Bennett 2013
<b>Study ID*</b>	Argawal 2000	✓ (RCT, N=125)
	Arikan 2008	✓ (RCT, N=175)
	Cheng 2004	✓ (RCT, N=100)
	Cigales 1997	✓ (RCT, N=56)
	Duan 2001	✓ (RCT, N=160)
	Elliott 2002	✓ (RCT, N=111)
	Ferber 2002	✓ (RCT, N=21)
	Field 1996	✓ (qRCT, N=40)
	Jing 2007	✓ (RCT, N=180)
	Jump 1998	✓ (qRCT, N=57)
	Ke 2001	✓ (RCT, N=400)
	Kim 2003	✓ (qRCT, N=58)
	Koniak-Griffin 1988	✓ (RCT, N=81)
	Liu C 2001 0 to 2 months	✓ (RCT, N=232)
	Liu C 2001 3 to 6 months	✓ (RCT, N=78)
	Liu CL 2005	✓ (RCT, N=80)
	Liu DY 2005	✓ (RCT, N=200)
	Lu 2005	✓ (qRCT, N=200)
	Maimaiti 2007	✓ (RCT, N=200)
	Na 2005	✓ (RCT, N=80)
	Narenji 2008	✓ (RCT, N=100)
	O'Higgins 2008	✓ (qRCT, N=96)
	Onozawa 2001	✓ (RCT, N=34)
	Oswalt 2007	✓ (RCT, N=21)
	Shao 2005	✓ (qRCT, N=210)
	Shi 2002	✓ (RCT, N=80)
	Sun 2004	✓ (RCT, N=210)
	Wang 1999	✓ (RCT, N=60)
	Wang 2001	✓ (RCT, N=57)
	White-Traut 2009	✓ (qRCT, N=40)
	Xua 2004	✓ (RCT, N=124)
	Ye 2004	✓ (RCT, N=100)
	Zhai 2001	✓ (qRCT, N=100)
	Zhu 2010	✓ (qRCT, N=115)

\*For the majority of studies, massage was provided by parents; in a small number of studies, massage was provided by researchers; in a number of studies, the massage provider was not clear

**Abbreviations:** N: number; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial

**Table 16: Evidence table for Bennett 2013<sup>12</sup>**

<b>Review ID</b>	Bennett 2013
<b>Search date</b>	1887 to June 2011
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	34 included studies (25 RCTs; 9 qRCTs)
<b>No. participants in relevant studies</b>	3,984 reported in review <i>Note: sum of Ns given in above table = 3,981 (these Ns were taken from 'Characteristics of included studies' tables in the review)</i>

<sup>12</sup> green shading indicates results significantly in favour of the intervention

<b>Location/setting</b>	Canada: 1 RCT; China: 20 RCTs; India: 1 RCT; Iran: 1 RCT; Israel: 1 RCT; Korea: 1 RCT; Turkey: 1 RCT; UK: 2 RCTs; USA: 6 RCTs
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 10/11 ('high' quality)
<b>Quality of relevant studies</b>	Review authors' summary: The quality of many trials was compromised by the use of quasi methods of randomisation, and many trials also failed to specify the method of allocation concealment, and had high losses to follow-up; overall, 20/34 trials were rated high risk of bias
<b>Review objective</b>	To assess whether infant massage is effective in promoting infant physical and mental health in low-risk, population samples
<b>Review eligibility criteria</b>	<u>Designs</u> : studies which randomised participants (including using quasi-randomisation) to an infant massage group or control group that received no intervention; <u>participants</u> : babies under the age of 6 months were eligible for inclusion; studies focused on preterm and low birthweight babies were excluded; <u>interventions</u> : studies evaluating the effectiveness of infant massage, irrespective of the theoretical basis or cultural practice underpinning the massage (defined as systematic tactile stimulation by human hands) were included; multi-modal interventions, of which massage was a part, were only included in the benefits of massage as a separate intervention could be elicited; <u>outcomes</u> : to be eligible, studies had to include at least 1 standardised instrument measuring the effects of infant massage on infant mental health or physical health
<b>Participant population</b>	The infant participants were full-term babies of either sex, age 6 months or younger, with no underlying health conditions other than colic; the intervention commenced within 1 week of birth in 21 trials; within 14 days of birth: 1 trial; up to mean age of 6 months: 12 trials
<b>Intervention</b>	In 17 trials, the massage intervention was delivered by parents following instruction; in 5 trials the massage was offered by researchers/nurses; in 12 trials, it was unclear who delivered the massages. The massage interventions varied in terms of duration and frequency; 2 trials assessed brief interventions (single session); 10 trials assessed short-term interventions (where the intervention took place for up to 4 weeks); 19 trials assessed medium-term interventions (where the intervention took place for at least 4 weeks and up to 12 weeks); 2 trials assessed long-term interventions (where the intervention took place for at least 12 weeks and continued for up to 26 weeks); 1 trial was of an unclear duration
<b>Comparator</b>	Usual care
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Infant temperament (CCTI; IBQ; RITQ): activity: post-intervention (4 weeks to 3 months)	SMD (R): 0.39 (95% CI -0.34, 1.13); $I^2$ 75%; P=0.20 (1 RCT, 2 qRCTs, N=121)
Infant temperament (CCTI; RITQ): persistence: post-intervention (6 weeks to 3 months)	SMD (R): 0.24 (95% CI -0.20, 0.67); $I^2$ 0%; P=0.29 (1 RCT, 1 qRCT, N=81)
Infant temperament (CCTI; IBQ): soothability: post-intervention (4-6 weeks)	SMD (R): -0.30 (95% CI -0.94, 0.35); $I^2$ 52%; P=0.37 (2 qRCTs, N=80)
<b>Single study results</b>	
Infant temperament: IBQ post-intervention	Activity: MD (R): 0.56 (95% CI 0.08, 1.04) (1 qRCT, N=40)
	Soothability: MD (R): 0.03 (95% CI -0.59, 0.65) (1 qRCT, N=40)
	Duration of orienting: MD (R): 0.0 (95% CI -0.82, 0.82) (1 qRCT, N=40)
	Distress to limitations: MD (R): -0.08 (95% CI -0.49, 0.33) (1 qRCT, N=40)
	Fear: MD (R): -0.06 (95% CI -0.63, 0.51) (1 qRCT, N=40)
Infant temperament questionnaire: RITQ (Carey) post-intervention (4 months)	Amount of smiling: MD (R): 0.30 (95% CI -0.14, 0.74) (1 qRCT, N=40)
	Activity: MD (R): 0.41 (95% CI 0.11, 0.71) (1 qRCT, N=41)
	Rhythmicity: MD (R): -0.19 (95% CI -0.63, 0.25) (1 qRCT, N=41)
	Approach: MD (R): 0.17 (95% CI -0.18, 0.52) (1 qRCT, N=41)
	Adaptability: MD (R): 0.10 (95% CI -0.30, 0.50) (1 qRCT, N=41)
	Intensity: MD (R): 0.19 (95% CI -0.28, 0.66) (1 qRCT, N=41)
	Mood: MD (R): 0.31 (95% CI -0.14, 0.76) (1 qRCT, N=41)
	Persistence: MD (R): 0.33 (95% CI -0.11, 0.77) (1 qRCT, N=41)
Distractibility: MD (R): 0.28 (95% CI -0.18, 0.74) (1 qRCT, N=41)	
Threshold: MD (R): 0.11 (95% CI -0.43, 0.65) (1 qRCT, N=41)	



Infant temperament questionnaire: RITQ (Carey) post-intervention (8 months)	MD (R): 0.66 (95% CI 0.48, 0.84) (1 RCT, N=369)
Infant temperament questionnaire: RITQ (Carey) post-intervention (8 months)	Rhythmicity: MD (R): 0.80 (95% CI 0.12, 1.48) (1 RCT, N=41) Approach: MD (R): 0.88 (95% CI 0.25, 1.51) (1 RCT, N=41) Adaptability: MD (R): 0.69 (95% CI 0.01, 1.37) (1 RCT, N=41) Intensity: MD (R): 0.39 (95% CI 0.02, 0.76) (1 RCT, N=41) Mood: MD (R): 1.08 (95% CI 0.65, 1.51) (1 RCT, N=41) Distractibility (R): MD: 0.72 (95% CI 0.32, 1.12) (1 RCT, N=41)
	Activity: MD (R): 0.25 (95% CI -0.33, 0.83) (1 RCT, N=41) Persistence: MD (R): 0.65 (95% CI -0.03, 1.33) (1 RCT, N=41) Threshold: MD (R): 0.48 (95% CI -0.27, 1.23) (1 RCT, N=41)
ICQ: post-intervention	Fussy/difficult: MD (R): 1.37 (95% CI -2.53, 5.27) (1 RCT, N=59) Unadaptable: MD (R): -0.19 (95% CI -1.51, 1.13) (1 RCT, N=59) Dull: MD (R): -1.08 (95% CI -2.60, 0.44) (1 RCT, N=59) Unpredictable: MD (R): 0.61 (95% CI -1.78, 3.00) (1 RCT, N=59)
ICQ: follow up (12 months)	Fussy/difficult: MD (R): 1.05 (95% CI -2.43, 4.53) (1 RCT, N=50) Unadaptable: MD (R): -0.39 (95% CI -1.63, 0.85) (1 RCT, N=50) Dull: MD (R): 0.35 (95% CI -1.54, 2.24) (1 RCT, N=50) Unpredictable: MD (R): 1.89 (95% CI -0.55, 4.33) (1 RCT, N=50)
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Weight (g): post-intervention (4 weeks to 6 months)	MD (R): -965.25 (95% CI -1360.52, -569.98); $I^2$ 100%; $P < 0.00001$ (15 RCTs, 3 qRCTs, N=2,271)
Length (cm): post-intervention (4 weeks to 3 months)	MD (R): -1.30 (95% CI -1.60, -1.00); $I^2$ 80%; $P < 0.00001$ (9 RCTs, 2 qRCTs, N=1,683)
Head circumference (cm): post-intervention (4-6 weeks)	MD (R): -0.81 (95% CI -1.18, -0.45); $I^2$ 87%; $P < 0.0001$ (7 RCTs, 2 qRCTs, N=1,423)
Psychomotor development (BSID or Levin PDI): post-intervention (3-6 months)	SMD (R): -0.35 (95% CI -0.54, -0.15); $I^2$ 1%; $P = 0.0004$ (3 RCTs, 1 qRCT, N=466)
Mental development (BSID or Levin MDI): post-intervention (3-6 months)	SMD (R): -0.27 (95% CI -0.64, 0.11); $I^2$ 69%; $P = 0.06$ (3 RCTs, 1 qRCT, N=466)
Gessel Development Quotient / Capital Institute Mental Check-list: post-intervention (1-2 months)	Gross motor: SMD (R): -0.44 (95% CI -0.70, -0.18); $I^2$ 0%; $P = 0.0008$ (2 RCTs, N=237) Fine motor: SMD (R): -0.61 (95% CI -0.87, -0.35); $I^2$ 0%; $P < 0.00001$ (2 RCTs, N=237) Language: SMD (R): -0.82 (95% CI -1.67, 0.03); $I^2$ 86%; $P < 0.06$ (2 RCTs, N=237)
<b>Single study results</b>	
BSID PDI: follow up (8 and 24 months)	8 months: MD (R): -0.78 (95% CI -11.89, 10.33) (1 RCT, N=41) 24 months: MD (R): -7.52 (95% CI -16.53, 1.49) (1 RCT, N=41)
BSID MDI: follow up (8 and 24 months)	8 months: MD (R): 22.85 (95% CI 4.26, 41.44) (1 RCT, N=41) 24 months: MD (R): -8.59 (95% CI -18.80, 1.62) (1 RCT, N=41)
Gessell Developmental Quotient: post-intervention	Adaptive behaviour: MD (R): -7.07 (95% CI -9.75, -4.39) (1 RCT, N=180) Gross motor: MD (R): -3.97 (95% CI -6.99, -0.95) (1 RCT, N=180) Fine motor: MD (R): -6.89 (95% CI -10.18, -3.60) (1 RCT, N=180) Language: MD (R): -4.15 (95% CI -7.03, -1.27) (1 RCT, N=180)
Capital Institute Mental Check-list: post-intervention	Gross motor: MD (R): -0.24 (95% CI -0.44, -0.05) (1 RCT, N=57) Fine motor: MD (R): -0.28 (95% CI -0.51, -0.05) (1 RCT, N=57) Cognitive: MD (R): -0.54 (95% CI -0.92, -0.15) (1 RCT, N=57) Language: MD (R): -0.70 (95% CI -0.99, -0.41) (1 RCT, N=57) IQ: MD (R): -27.18 (95% CI -33.13, -21.23) (1 RCT, N=57)
Gessell Developmental Quotient: follow up (6 months)	Adaptive behaviour: MD (R): -5.79 (95% CI -9.64, -1.94) (1 RCT, N=116) Fine motor: MD (R): -8.12 (95% CI -11.67, -4.57) (1 RCT, N=116) Language MD (R): -7.90 (95% CI -11.70, -4.10) (1 RCT, N=116) Gross motor: MD (R): -2.85 (95% CI -8.18, 2.48) (1 RCT, N=116)
Habituation	Habituation: MD (R): -1.10 (95% CI -4.79, 2.59) (1 RCT, N=32) Seconds to habituation: MD (R): -10.90 (95% CI -69.41, 47.61) (1 RCT, N=32) Trials to habituation: MD(R): -0.30 (95% CI -1.36, 0.76) (1 RCT, N=32)

	N=32) Post-habituating: MD(R): 2.0 (95% CI -2.43, 6.43) (1 RCT, N=32)
	Habituating test: MD (R): -12.40 (95% CI -19.37, -5.43) (1 RCT, N=32)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Gessell Development Quotient / Capital Institute Mental Check-list: personal-social behaviour: post-intervention (1-2 months)	SMD (R): -0.90 (95% CI -1.16, -0.18); I <sup>2</sup> 80%; P=0.01 (2 RCTs, N=237)
Crying or fussing time (hours per day): post-intervention (1-16 weeks)	MD (R): -0.36 (95% CI -0.52, -0.19); I <sup>2</sup> 5%; P<0.0001 (4 RCTs, N=341)
Sleep duration over 24 hours (hours): post-intervention (4 weeks to 3 months)	MD (R): -0.91 (95% CI -1.15, -0.30); I <sup>2</sup> 94%; P<0.00001 (4 RCTs, N=634)
Mean increase in 24 hour sleep (hours): post-intervention (4 weeks)	SMD (R): -1.47 (95% CI -4.43, 1.49); I <sup>2</sup> 99%; P=0.33 (2 RCTs, N=225)
Mean increase in duration of night sleep (hours): post-intervention (4 weeks)	SMD (R): -1.28 (95% CI -3.66, 1.10); I <sup>2</sup> 98%; P=0.29 (2 RCTs, N=225)
<b>Single study results</b>	
Gessel Developmental Quotient: social behaviour: post-intervention	MD (R): -6.41 (95% CI -9.65, -3.17) (1 RCT, N=180)
Capital institute Mental Check-list: social behaviour: post-intervention	MD (R): -0.70 (95% CI -0.97, -0.42) (1 RCT, N=57)
Gessel Developmental Quotient: personal-social behaviour: follow up (6 months)	MD (R): -6.19 (95% CI -9.83, -2.55) (1 RCT, N=116)
Crying or fussing time: follow up (3 months)	MD (R): -0.21 (95% CI -0.40, -0.02) (1 RCT, N=124)
Crying or fussing time: follow up (6 months)	MD (R): -0.15 (95% CI -0.29, -0.01) (1 RCT, N=124)
Crying frequency (times): post-intervention	MD (R): -0.34 (95% CI -0.56, -0.12) (1 RCT, N=124)
Crying frequency (times): follow up (3 months)	MD (R): -0.19 (95% CI -0.36, -0.02) (1 RCT, N=126)
Crying frequency (times): follow up (6 months)	MD (R): -0.18 (95% CI -0.35, -0.01) (1 RCT, N=124)
Mean increase in duration of day sleep: post-intervention	MD (R): 0.10 (95% CI -0.21, 0.41) (1 RCT, N=125)
Mean increase in duration of 1 <sup>st</sup> morning sleep after massage: post-intervention	MD (R): -1.52 (95% CI -1.69, -1.35) (1 RCT, N=125)
Sleep (total hours per night): post-intervention	MD (R): -0.70 (95% CI -1.00, -0.40) (1 RCT, N=100)
Child behaviour (HOME): follow up (24 months)	MD (R): 0.34 (95% CI -1.92, 2.60) (1 RCT, N=25)
ECBI: follow up (24 months)	Intensity domain: MD (R): 4.95 (95% CI -9.94, 19.84) (1 RCT, N=25) Problem domain: MD (R): -0.19 (95% CI -3.26, 2.88) (1 RCT, N=25)
Distractibility: (toy) follow up (12 months)	Mean look greater than 14 sec: RR (R): 2.65 (95% CI 0.31, 22.82) (1 qRCT, N=32) Mean look less than 14 sec: RR (R): 0.88 (95% CI 0.68, 1.14) (1 qRCT, N=32) Max look greater than 14 sec: RR (R): 0.96 (95% CI 0.66, 1.38) (1 qRCT, N=32) Max look less than 14 sec: RR (R): 1.76 (95% CI 0.37, 8.31) (1 qRCT, N=32)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Combined mother-infant interactions: total NCATS and Murray: post-intervention (5-16 weeks)	SMD (R): -0.26 (95% CI -1.01, 0.48); I <sup>2</sup> 75% P=0.49 (2 RCTs, 1 qRCT, N=131)
Combined mother-infant interactions: total NCATS and Murray: follow up (12 to 24 months)	SMD (R): -0.20 (95% CI -0.69, 0.29); I <sup>2</sup> 0%; P=0.43 (1 RCT, 1 qRCT, N=65)
Maternal sensitivity: warm to cold (Murray subscale): post-intervention (5-6 weeks)	MD (R): -0.34 (95% CI -1.07, 0.40); I <sup>2</sup> 91%; P=0.37 (1 RCT, 1 qRCT, N=84)
Maternal sensitivity: non-intrusive to intrusive (Murray subscale): post-intervention (5-6 weeks)	MD (R): -0.10 (95% CI -0.85, 0.66); I <sup>2</sup> 90%; P=0.80 (1 RCT, 1 qRCT, N=84)
Infant interactions with mother: attentive to non-attentive (Murray subscale): post-intervention (5-6	MD (R): -0.47 (95% CI -1.47, 0.52); I <sup>2</sup> 84%; P=0.35 (1 RCT, 1 qRCT, N=84)

weeks)	
Infant interactions with mother: lively to inert (Murray subscale): post-intervention (5-6 weeks)	MD (R): -0.46 (95% CI -1.45, 0.53); I <sup>2</sup> 86%; P=0.36(1 RCT, 1 qRCT, N=84)
Infant interactions with mother: happy to distressed (Murray subscale): post-intervention (5-6 weeks)	MD (R): -0.35 (95% CI -1.29, 0.59); I <sup>2</sup> 84%; P=0.46 (1 RCT, 1 qRCT, N=84)
<b>Single study results</b>	
Infant attachment (Q set): follow up (12 months)	MD (R): -0.06 (95% CI -0.17, 0.05) (1 qRCT, N=39)
NCAFS: total: post-intervention (16 weeks)	MD (R): -2.10 (95% CI -6.16, 1.96) (1 RCT, N=47)
NCATS: mother: follow up (24 months)	MD (R): -0.18 (95% CI -0.96, 0.61) (1 RCT, N=25)
NCATS: child: follow up (24 months)	MD (R): 0.35 (95% CI -0.44, 1.14) (1 RCT, N=25)
Maternal sensitivity (Murray subscale): follow up (12 months)	Warm to cold: MD (R): -0.84 (95% CI -1.07, -0.61) (1 qRCT, N=40)
	Non-intrusive to intrusive: MD (R): -0.01 (95% CI -0.30, 0.28) (1 qRCT, N=40)
	Remoteness: MD (R): -0.14 (95% CI -0.40, 0.12) (1 qRCT, N=62)
Infant interactions with mother (Murray subscales): follow up (12 months)	Attentive to non-attentive: MD (R): 0.18 (95% CI -0.18, 0.54) (1 qRCT, N=40) Lively to inert: MD (R): -0.11 (95% CI -0.31, 0.09) (1 qRCT, N=40) Happy to distressed: MD (R): 0.02 (95% CI -0.26, 0.22) (1 qRCT, N=40)
Attachment patterns (strange situation procedure): follow up (12 months)	Secure: RR (R): 0.82 (95% CI 0.50, 1.34) (1 qRCT, N=39) Avoidant: RR (R): 1.39 (95% CI 0.14, 14.07) (1 qRCT, N=39) Persistent: RR (R): 3.48 (95% CI 0.45, 27.02) (1 qRCT, N=39) Disorganised: RR (R): 0.70 (95% CI 0.16, 3.02) (1 qRCT, N=39)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Parenting stress (PSI Abidin): child characteristics subscale: post-intervention (4 weeks to 2 months)	MD (R): -10.85 (95% CI -53.86, 32.16); I <sup>2</sup> 90%; P=0.62 (1 RCT, 1 qRCT, N=55)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Infant temperament	Significant <ul style="list-style-type: none"> <li>Trained mothers (Jump 1998; Koniak-Griffin 1988)</li> </ul> Non-significant <ul style="list-style-type: none"> <li>Researcher (Field 1996)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>Mothers trained by researchers (Argawal 2000; Cheng 2004; Jing 2007; Koniak-Griffin 1998; Narenji 2008)</li> <li>Researchers (Field 1996)</li> <li>Researchers/orphanage staff (Kim 2003)</li> <li>Nurses (Liu DY 2005)</li> <li>Trained professionals then mother (Wang 2001)</li> <li>Unclear (Duan 2002; Ke 2001; Liu CL 2005; Lu 2005; Na 2005; Shi 2002; Sun 2004; Wang 1999; Ye 2004)</li> </ul> <b>Subgroup interaction test (mothers, researchers/staff, researchers then mothers): Chi<sup>2</sup>: 3.49, P=0.18, I<sup>2</sup>: 42.6%</b>
Length	<ul style="list-style-type: none"> <li>Mothers trained by researchers (Argawal 2000; Cheng 2004; Jing 2007; Narenji 2008)</li> <li>Researchers/orphanage staff (Kim 2003)</li> <li>Nurses (Liu DY 2005)</li> </ul>

	<ul style="list-style-type: none"> <li>Unclear (Duan 2002; Ke 2001; Lu 2005; Na 2005; Shi 2002)</li> </ul> <b>Subgroup interaction test (mothers, researchers/staff): Chi<sup>2</sup>: 4.26, P=0.04, I<sup>2</sup>: 76.5%</b>
Head circumference	<ul style="list-style-type: none"> <li>Mothers trained by researchers (Argawal 2000; Cheng 2004; Narenji 2008)</li> <li>Researchers/orphanage staff (Kim 2003)</li> <li>Nurses (Liu DY 2005)</li> <li>Unclear (Duan 2002; Ke 2001; Lu 2005; Na 2005)</li> </ul> <b>Subgroup interaction test (mothers, researchers/staff): Chi<sup>2</sup>: 3.75, P=0.05, I<sup>2</sup>: 73.3%</b>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Infant temperament	<p>Significant</p> <ul style="list-style-type: none"> <li>Community, USA (parenting class) (Jump 1998)</li> <li>Community hospitals, USA (Koniak-Griffin 1988)</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>Community (day care/nursery school), USA (Field 1996)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>Community clinic, India (Argawal 2000)</li> <li>Primary care (postnatally in hospital then in community), China (Cheng 2004)</li> <li>Community (day care/nursery school), USA (Field 1996)</li> <li>Community, research clinic, China (Jing 2007)</li> <li>Orphanage, Korea (Kim 2003)</li> <li>Community hospitals, USA (Koniak-Griffin 1988)</li> <li>Community (clinic based), Iran (Narenji 2008)</li> <li>Maternity ward then at home (community), China (Wang 2001)</li> <li>Unclear, China (Duan 2002; Ke 2001; Liu CL 2005; Liu DY 2005; Lu 2005; Na 2005; Shi 2002; Sun 2004; Wang 1999; Ye 2004)</li> </ul>
Length	<ul style="list-style-type: none"> <li>Community clinic, India (Argawal 2000)</li> <li>Primary care (postnatally in hospital then in community), China (Cheng 2004)</li> <li>Community, research clinic, China (Jing 2007)</li> <li>Orphanage, Korea (Kim 2003)</li> <li>Community (clinic based), Iran (Narenji 2008)</li> <li>Unclear, China (Duan 2002; Ke 2001; Liu DY 2005; Lu 2005; Na 2005; Shi 2002)</li> </ul>
Head circumference	<ul style="list-style-type: none"> <li>Community clinic, India (Argawal 2000)</li> <li>Primary care (postnatally in hospital then in community), China (Cheng 2004)</li> <li>Orphanage, Korea (Kim 2003)</li> <li>Community (clinic based), Iran (Narenji 2008)</li> <li>Unclear, China (Duan 2002; Ke 2001; Liu DY 2005; Lu 2005; Na 2005)</li> </ul>
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Infant temperament	<p>Significant</p> <ul style="list-style-type: none"> <li>Babies under 9 months (Jump 1998)</li> <li>Newborn infants born to primiparous women (Koniak-Griffin 1988)</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>Full-term 1-3 month old infants with adolescent depressed mothers (Field 1996)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>Newborns (Cheng 2004; Duan 200; Jing 2007; Ke 2001; Koniak-Griffin 1988; Liu CL 2005; Liu DY 2005; Lu 2005; Na 2005; Shi 2002; Sun 2004; Wang 1999; Wang 2001; Ye 2004)</li> <li>Healthy 6 week old infants (Argawal 2000)</li> <li>Full-term 1-3 month old infants with adolescent depressed mothers: USA (Field 1996)</li> <li>Orphaned infants, within 14 days of birth (Kim 2003)</li> <li>2 month old infants (Narenji 2008)</li> </ul> <b>Subgroup interaction test (newborns, 2 weeks to 3 months): Chi<sup>2</sup>: 0.03, P=0.87, I<sup>2</sup>: 0%</b>
Length	<ul style="list-style-type: none"> <li>Newborns (Cheng 2004; Duan 2002; Jing 2007; Ke 2001; Liu DY 2005; Lu</li> </ul>

	<p>2005; Na 2005; Shi 2002)</p> <ul style="list-style-type: none"> <li>• Healthy 6 week old infants (Argawal 2000)</li> <li>• Orphaned infants, within 14 days of birth (Kim 2003)</li> <li>• 2 month old infants (Narenji 2008)</li> </ul> <p><b>Subgroup interaction test (newborns, 2 weeks to 3 months): Chi<sup>2</sup>: 2.84, P=0.09, I<sup>2</sup>: 64.8%</b></p>
Head circumference	<ul style="list-style-type: none"> <li>• Newborns (Cheng 2004; Duan 2002; Ke 2001; Liu DY 2005; Lu 2005; Na 2005)</li> <li>• Healthy 6 week old infants (Argawal 2000)</li> <li>• Orphaned infants, within 14 days of birth (Kim 2003)</li> <li>• 2 month old infants (Narenji 2008)</li> </ul> <p><b>Subgroup interaction test (newborns, 2 weeks to 3 months): Chi<sup>2</sup>: 0.59, P=0.44, I<sup>2</sup>: 0%</b></p>
<b>When could be the best time for the intervention, program, or message delivery to occur?</b>	
Infant temperament	<p>Significant</p> <ul style="list-style-type: none"> <li>• 45-60 minute sessions once a week over 4 weeks (mothers encouraged to practice between sessions) (Jump 1998) = short</li> <li>• 5-7 minutes once daily until baby reaches 3 months of age (Koniak-Griffin 1988) = medium</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>• 15 minutes a day 2 days a week over 6 weeks (Field 1996)</li> </ul>
Weight	<p>Short duration of intervention</p> <ul style="list-style-type: none"> <li>• 10 minutes daily for 4 weeks (Argawal 2000)</li> <li>• 15 minutes twice a day of auditory (female voice), tactile (massage), and visual (eye-to-eye contact) stimulation for 4 weeks (Kim 2003)</li> <li>• Twice daily for 10 minutes, for 4 weeks (morning and night before sleep) (Narenji 2008)</li> <li>• 15 minutes of massage twice daily over 28 days (Shi 2002)</li> </ul> <p>Medium duration of intervention</p> <ul style="list-style-type: none"> <li>• 5-7 minutes once daily until baby reached 3 months of age (Koniak-Griffin 1988)</li> <li>• 15 minutes once daily for 42 days (Cheng 2004)</li> <li>• 15 minutes twice daily over 42 days (Duan 2002; Liu CL 2005; Liu DY 2005; Lu 2005; Sun 2004)</li> <li>• 15 minutes of massage three times daily for 28 days (Na 2005)</li> <li>• 15 minutes of massage three times a day for 42 days (Wang 1999)</li> <li>• 15 minutes of massage three times a day for 42 days plus additional method of kneading the back (Ke 2001)</li> <li>• 15-20 minutes per day started by trained professionals continued daily by the mother after discharge for 2 months (Wang 2001)</li> <li>• 10 - 15 minutes of massage twice daily over 42 days (Ye 2004)</li> </ul> <p>Long duration of intervention</p> <ul style="list-style-type: none"> <li>• Massage and motion training was performed 1-2 times every day, lasting for 15 minutes, and motion training for 5 minutes at each time, from birth to 6 months of age. From 6 months of age massage and motion training continued (massage 8 minutes, motion training 12 minutes) (Jing 2007)</li> </ul> <p><b>Subgroup interaction test (short, medium, long duration): Chi<sup>2</sup>: 0.93, P=0.63, I<sup>2</sup>: 0%</b></p> <p>Duration of follow up: post-intervention</p> <ul style="list-style-type: none"> <li>• Argawal 2000; Cheng 2004; Duan 2002; Field 1996; Ke 2001; Liu CL 2005; Liu DY 2005; Lu 2005; Na 2005; Narenji 2008; Shi 2002; Sun 2004; Wang 1999; Wang 2001; Ye 2004</li> </ul> <p>Duration of follow up: 6-8 months</p> <ul style="list-style-type: none"> <li>• Jing 2007; Kim 2003 Koniak-Griffin 1998</li> </ul> <p><b>Subgroup interaction test (post-intervention, follow up 6-8 months): Chi<sup>2</sup>: 1.84, P=0.18, I<sup>2</sup>: 45.6%</b></p>
Length	<p>Short duration of intervention</p> <ul style="list-style-type: none"> <li>• 10 minutes daily for 4 weeks (Argawal 2000)</li> <li>• 15 minutes twice a day of auditory (female voice), tactile (massage), and visual (eye-to-eye contact) stimulation for 4 weeks</li> </ul>

	<p>(Kim 2003)</p> <ul style="list-style-type: none"> <li>Twice daily for 10 minutes, for 4 weeks (morning and night before sleep) (Narenji 2008)</li> </ul> <p>Medium duration of intervention</p> <ul style="list-style-type: none"> <li>15 minutes once daily for 42 days (Cheng 2004)</li> <li>15 minutes twice daily over 42 days (Duan 2002; Liu DY 2005; Lu 2005)</li> <li>15 minutes of massage three times daily for 28 days (Na 2005)</li> <li>15 minutes of massage three times a day for 42 days plus additional method of kneading the back (Ke 2001)</li> </ul> <p>Long duration of intervention</p> <ul style="list-style-type: none"> <li>Massage and motion training was performed 1-2 times every day, lasting for 15 minutes, and motion training for 5 minutes at each time, from birth to 6 months of age. From 6 months of age massage and motion training continued (massage 8 minutes, motion training 12 minutes) (Jing 2007)</li> </ul> <p><b>Subgroup interaction test (short, medium, long): Chi<sup>2</sup>: 3.61, P=0.16, I<sup>2</sup>: 44.6%</b></p> <p>Duration of follow up: post-intervention</p> <ul style="list-style-type: none"> <li>Argawal 2000; Cheng 2004; Duan 2002; Ke 2001; Liu DY 2005; Lu 2005; Na 2005; Narenji 2008; Shi 2002</li> </ul> <p>Duration of follow up: 6 months</p> <ul style="list-style-type: none"> <li>Jing 2007; Kim 2003</li> </ul> <p><b>Subgroup interaction test (post-intervention, follow up 6 months): Chi<sup>2</sup>: 0.25, P=0.61, I<sup>2</sup>: 0%</b></p>
Head circumference	<p>Short duration of intervention</p> <ul style="list-style-type: none"> <li>10 minutes daily for 4 weeks (Argawal 2000)</li> <li>15 minutes twice a day of auditory (female voice), tactile (massage), and visual (eye-to-eye contact) stimulation for 4 weeks (Kim 2003)</li> <li>Twice daily for 10 minutes, for 4 weeks (morning and night before sleep) (Narenji 2008)</li> </ul> <p>Medium duration of intervention</p> <ul style="list-style-type: none"> <li>15 minutes once daily for 42 days (Cheng 2004)</li> <li>15 minutes twice daily over 42 days (Duan 2002; Liu DY 2005; Lu 2005)</li> <li>15 minutes of massage three times daily for 28 days (Na 2005)</li> <li>15 minutes of massage three times a day for 42 days plus additional method of kneading the back (Ke 2001)</li> </ul> <p><b>Subgroup interaction test (short, medium): Chi<sup>2</sup>: 0.59, P=0.44, I<sup>2</sup>: 0%</b></p> <p>Duration of follow up: post-intervention</p> <ul style="list-style-type: none"> <li>Argawal 2000; Cheng 2004; Duan 2002; Ke 2001; Kim 2003; Liu DY 2005; Lu 2005; Na 2005; Narenji 2008</li> </ul> <p>Duration of follow up: 6 months</p> <ul style="list-style-type: none"> <li>Kim 2003; Zhu 2010</li> </ul> <p><b>Subgroup interaction test (post-intervention, follow up 6 months): Chi<sup>2</sup>: 39.23, P&lt;0.00001, I<sup>2</sup>: 97.5%</b></p>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b>	
Infant temperament	<p>Significant</p> <ul style="list-style-type: none"> <li>Not stated (Jump 1998)</li> <li>Massage ± multisensory stimulation during expected sleep periods (Koniak-Griffin 1988)</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>Complete face and body massage using mineral body oil (Field 1996)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>Massage infants received (i) herbal oil, (ii) sesame oil, (iii) mustard oil, or (iv) mineral oil (Argawal 2000)</li> <li>Massage ± multisensory stimulation during expected sleep periods (Koniak-Griffin 1988)</li> <li>Complete face and body massage using mineral body oil (Field 1996)</li> <li>Set of training programs adapted to the age and development of the infant (no further details given) (Jing 2007)</li> <li>Auditory (female voice) and visual (eye-to-eye) stimulation as well as</li> </ul>

	<ul style="list-style-type: none"> <li>massage (Kim 2003)</li> <li>• Massage all over the body excluding the eyes and genitals with sesame oil (Narenji 2008)</li> <li>• NR (Cheng 2004; Duan 2002; Ke 2001; Liu CL 2005; Liu DY 2005; Lu 2005; Na 2005; Shi 2002; Sun 2004; Wang 1999; Wang 2001; Ye 2004)</li> </ul>
Length	<ul style="list-style-type: none"> <li>• Massage infants received (i) herbal oil, (ii) sesame oil, (iii) mustard oil, or (iv) mineral oil (Argawal 2000)</li> <li>• Set of training programs adapted to the age and development of the infant (no further details given) (Jing 2007)</li> <li>• Auditory (female voice) and visual (eye-to-eye) stimulation as well as massage (Kim 2003)</li> <li>• Massage all over the body excluding the eyes and genitals with sesame oil (Narenji 2008)</li> <li>• NR (Cheng 2004; Duan 2002; Ke 2001; Liu DY 2005; Lu 2005; Na 2005; Shi 2002)</li> </ul>
Head circumference	<ul style="list-style-type: none"> <li>• Massage infants received (i) herbal oil, (ii) sesame oil, (iii) mustard oil, or (iv) mineral oil (Argawal 2000)</li> <li>• Auditory (female voice) and visual (eye-to-eye) stimulation as well as massage (Kim 2003)</li> <li>• Massage all over the body excluding the eyes and genitals with sesame oil (Narenji 2008)</li> <li>• NR (Cheng 2004; Duan 2002; Ke 2001; Liu DY 2005; Lu 2005; Na 2005)</li> </ul>
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID; Bayley Scales of Infant Development; CCTI: Colorado Childhood Temperament Inventory; CI: Confidence Interval; cm: centimetres; ECBI: Eyberg Child Behaviour Inventory; g: grams; HOME: Home Observation Measurement of the Environment; IBQ: Infant Behaviour Questionnaire; ICQ: Infant Characteristic Questionnaire; IQ: Intelligence Quotient; MD: mean difference; MDI: Mental Development Index; Murray: Murray Global Rating Scale; N: number; NCAFS: Nursing Child Assessment Feeding Scale; NCATS: Nursing Child Teaching Assessment Scale; NS: non-significant; P: P value; PDI: Psychomotor Development Index; PSI: Parenting Stress Index; qRCT: quasi-randomised controlled trial; (R): random effects; RCT: randomised controlled trial; RITQ: Revised Infant Temperament Questionnaire; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; SMD: standardised mean difference; UK: United Kingdom; USA: United States of America; wk: week

## Interventions for preventing postnatal depression

**Table 17: Matrix indicating the studies that were included in the systematic reviews**

		<b>Systematic review</b>
		Dennis 2013
<b>Study ID</b>	Armstrong 1999	✓ (RCT, N=181)
	Austin 2008	✓ (RCT, N=277)
	Brugha 2000	✓ (RCT, N=209)
	Cupples 2011	✓ (RCT, N=343)
	Dennis 2009	✓ (RCT, N=701)
	Feinberg 2008	✓ (RCT, N=169)
	Gamble 2005	✓ (RCT, N=103)
	Gao 2010	✓ (RCT, N=194)
	Gjerdingen 2002	✓ (RCT, N=151)
	Gorman 1997	✓ (RCT, N=45)
	Gunn 1998	✓ (RCT, N=683)
	Harris 2006	✓ (RCT, N=71)
	Heinicke 1999	✓ (RCT, N=70)
	Ickovics 2011	✓ (RCT, N=1,047)
	Lavender 1998	✓ (RCT, N=114)
	Le 2011	✓ (RCT, N=217)
	Lumley 2006	✓ (cRCT, N=19,193)
	MacArthur 2002	✓ (cRCT, N=2,064)
	Morrell 2000	✓ (RCT, N=623)
	Priest 2003	✓ (RCT, N=1,745)
	Reid 2002	✓ (RCT, N=1,004)
	Sen 2006	✓ (RCT, N=162)
	Small 2000	✓ (RCT, N=1,041)
	Stamp 1995	✓ (RCT, N=144)
	Tam 2003	✓ (RCT, N=560)
	Tripathy 2010	✓ (cRCT, N=19,030)
	Waldenstrom 2000	✓ (RCT, N=1,000)
	Weidner 2010	✓ (RCT, N=92)
Zlotnick 2001	✓ (RCT, N=37)	
Zlotnick 2006	✓ (RCT, N=99)	

**Abbreviations:** cRCT: cluster-randomised controlled trial; N: number; RCT: randomised controlled trial

**Table 18: Evidence table for Dennis 2013<sup>13</sup>**

<b>Review ID</b>	Dennis 2013
<b>Search date</b>	November 2011 (in December 2012, an updated search was performed, and results added to 'Studies awaiting classification')
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	Griffiths K, Christensen H, Ellwood D, Jones B. Online cognitive behaviours therapy for the prevention of postnatal depression in at-risk mothers: a randomised controlled trial. Australian New Zealand Clinical Trials Registry 2009. Mann A. A randomised control trial of a psychological intervention given in pregnancy to reduce the risk of postnatal depression in a sample of high risk women in India. National Research Register ( <a href="http://www.updatesoftware.com/NRR">www.updatesoftware.com/NRR</a> ) 2001 (accessed April 2004).
<b>No. studies of relevance to this Overview and their design(s)</b>	30 RCTs (including 3 cRCTs)
<b>No. participants in relevant studies</b>	51,369; 16,912 women from 28 RCTs included in meta-analyses (2 RCTs did not report outcome data for inclusion in review)

<sup>13</sup> green shading indicates results significantly in favour of the intervention



<b>Location/setting</b>	Australia: 9 RCTs; Canada: 1 RCT; China: 2 RCTs; Germany: 1 RCT; India: 1 RCT; UK: 7 RCTs; unclear: 1 RCT; USA: 8 RCTs
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 10/11 ('high' quality)
<b>Quality of relevant studies</b>	Review authors' summary: methodological quality of the included trials was good to excellent, with the most frequently identified weakness being follow up attrition (6 RCTs had > 20% losses to follow up; the removal of trials at risk of bias resulted in minimal/no chances to conclusions)
<b>Review objective</b>	To assess the effects, on mothers and their families, of preventive psychosocial and psychological interventions compared with usual antepartum, intrapartum, or postpartum care to reduce the risk of postpartum depression
<b>Review eligibility criteria</b>	<u>Designs</u> : published, unpublished and ongoing RCTs of preventive psychosocial or psychological interventions in which the primary or secondary aim was reduction in the risk of developing postpartum depression; <u>participants</u> : pregnant women and new (less than 6 weeks postpartum) mothers, including those at no known risk and those identified as at risk of developing postpartum depression; <u>interventions</u> : any form of standard or usual care compared with a variety of non-pharmaceutical interventions, including psycho educational strategies, cognitive behavioural therapy, interpersonal psychotherapy, non-directive counselling, psychological debriefing, various supportive interactions, and tangible assistance; delivered via telephone, home or clinic visits, or individual or group sessions antenatally and/or within the 1 <sup>st</sup> month postpartum by a professional or lay person; <u>outcomes</u> : maternal: postpartum depression; maternal mortality and serious morbidity including self-harm/suicide attempts; maternal-infant attachment; anxiety; stress; parental stress; perceived social support; dissatisfaction with care; infant: health parameters; developmental assessments; abuse and neglect; family: marital discord
<b>Participant population</b>	14/30 RCTs targeted 'at risk' women based on various factors putting them at increased likelihood of developing postpartum depression; 16/30 RCTs enrolled women from the general population
<b>Intervention</b>	Psychosocial interventions (17 RCTs), including: antenatal and postnatal classes/groups (7 RCTs), professional home visits (2 RCTs), lay-based home visits (3 RCTs), lay-based telephone support (1 RCT), early postpartum follow up (1 RCT), and continuity/models of care (3 RCTs). Psychological interventions (11 RCTs), including: debriefing (5 RCTs), cognitive behavioural therapy (1 RCT), interpersonal psychotherapy (5 RCTs). Interventions were provided by a variety of professionals (nurses, physicians, midwives, mental health specialists, lay individuals). 11 RCTs provided interventions delivered to groups of women. Majority of RCTs (24/28) provided multiple contacts. 4 RCTs provided an intervention in antenatal period only; 12 in the antenatal and postnatal period, and 12 in postnatal period only
<b>Comparator</b>	Predominately routine antenatal and/or postnatal care
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Infant development > 24 weeks (BSID-II)	MD (R): -0.90 (95% CI -2.90, 1.10) (1 RCT, N=280)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Infant health parameters – not fully immunized at 1 year postpartum	RR (R): 1.16 (95% CI 0.39, 3.43) (1 RCT, N=844)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results/single study results</b>	
Maternal-infant attachment at 0-8, 9-16, and 17-24 weeks	RR (R): 1.01 (95% CI 0.64, 1.59) (1 RCT, N=133) RR (R): 1.29 (95% CI 0.78, 2.13) (1 RCT, N=126) RR (R): 0.89 (95% CI 0.59, 1.34) (1 RCT, N=127)
Mean maternal-infant attachment scores at 0-8, 9-16, 17-24, > 24 weeks, and at final study assessment (Dysfunction Interaction Scale of PSI in 1 RCT; 1 RCT: NR)	SMD (R): -0.11 (95% CI -0.40, 0.19) (1 RCT, N=176) SMD (R): -0.20 (95% CI -0.51, 0.11) (1 RCT N=160) SMD (R): -0.22 (95% CI -0.54, 0.10) (1 RCT, N=152) SMD (R): -0.12 (95% CI -0.49, 0.24) (1 RCT, N=116) SMD (R): -0.18 (95% CI -0.42, 0.06); I <sup>2</sup> 0%; P=0.15 (2 RCTs, N=268)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results/single study results</b>	
Maternal depressive symptomatology at final assessment (3-52 weeks postpartum)	RR (R): 0.78 (95% CI 0.66, 0.93); I <sup>2</sup> 64%; P=0.005 (20 RCTs, N=14,727) Psychosocial interventions: RR (R): 0.83 (95% CI 0.70, 0.99); I <sup>2</sup> 57%; P=0.040 (12 RCTs, N=11,322) Psychological interventions RR (R): 0.61 (95% CI 0.39, 0.96); I <sup>2</sup> 75%; P=0.032 (8 RCTs, N=3,405)
Mean depression scores at final study assessment (6-52 weeks postpartum)	SMD (R): -0.13 (95% CI -0.28, 0.01); I <sup>2</sup> 91%; P=0.077 (19 RCTs, N=12,376)
Clinical diagnosis of depression at final study assessment (12-24 weeks postpartum)	RR (R): 0.50 (95% CI 0.32, 0.78); I <sup>2</sup> 0%; P=0.002 (5 RCTs, N=939)
<i>Subgroup analyses (where applicable for maternal depressive symptomatology, mean depression scores and clinical diagnosis of depression)</i>	Psychosocial interventions: subgroup differences for sub-type of intervention (X <sup>2</sup> =16.37; P=0.006): no significant benefit for antenatal and postnatal classes, postpartum lay-based home visits, early postpartum follow up, continuity/model of care; significant benefits for: postpartum professional-based home visits, lay-based telephone support Psychological intervention: no clear subgroup differences for sub-type of intervention Overall: no clear subgroup differences for: intervention provider (professional vs. lay-based), intervention mode (individual vs. group), intervention onset (antenatal vs. postnatal vs. both), sample selection criteria (at risk vs. general population); trend for subgroup difference based on number of contacts (P=0.06): i.e. benefit for multiple contact vs. single contact
Depressive symptomatology at 0-8, 9-16, 17-24, > 24 weeks	0-8: RR (R): 0.73 (95% CI 0.56, 0.95); I <sup>2</sup> 61%; P=0.017 (13 RCTs, N=4,907) 9-16: RR (R): 0.73 (95% CI 0.56, 0.97); I <sup>2</sup> 65%; P=0.028 (10 RCTs, N=3,982) >24: RR (R): 0.66 (95% CI 0.54, 0.82); I <sup>2</sup> 1%; P=0.0001 (5 RCTs, N=2,936) 17-14: RR (R): 0.93 (0.82, 1.05); I <sup>2</sup> 15%; P=0.22 (9 RCTs, N=10,636)
Mean depression scores at 0-8, 9-16, 17-24, > 24 weeks	0-8: SMD (R): -0.16 (95% CI -0.41, 0.09); I <sup>2</sup> 75%; P=0.22 (6 RCTs, N=1,234) 9-16: SMD (R): -0.26 (95% CI -0.72, 0.20); I <sup>2</sup> 98%; P=0.26 (9 RCTs, N=3,628) 17-24: SMD (R): 0.01 (95% CI -0.03, 0.05); I <sup>2</sup> 0%; P=0.78 (10 RCTs, N=9,944) >24: SMD (R): -0.17 (95% CI -0.58, 0.25); I <sup>2</sup> 95%; P=0.43 (7 RCTs, N=2,447)
Diagnosis of depression at 0-8, 9-16, 17-24 weeks	9-16: RR (R): 0.49 (95% CI 0.31, 0.77); I <sup>2</sup> 0%; P=0.0023 (4 RCTs, N=902) 0-8: RR (R): 0.09 (95% CI 0.01, 1.47) (1 RCT, N=39) 17-24: RR (R): 0.64 (95% CI 0.17, 2.46) (1 RCT, N=37)
Anxiety at 0-8, 9-16, 17-24 weeks, and final study assessment	0-8: RR (R): 0.35 (95% CI 0.05, 2.34); I <sup>2</sup> 85%; P=0.28 (2 RCTs, N=245) 9-16: RR (R): 0.41 (95% CI 0.12, 1.41); I <sup>2</sup> 44%; P=0.16 (3 RCTs, N=843) 17-24: RR (R): 0.94 (95% CI 0.25, 3.60) (1 RCT, N=130) Final: RR (R): 0.40 (95% CI 0.14, 1.14); I <sup>2</sup> 77%; P=0.086 (4 RCTs, N=959)

Mean anxiety scores at 0-8, 9-16, 17-24, > 24 weeks, final study assessment (24-52 weeks postpartum)	9-16: SMD (R): -0.15 (95% CI -0.30, -0.01); I <sup>2</sup> 0%; P=0.038 (2 RCTs, N=740)
	Final: SMD (R): -0.16 (95% CI -0.30, -0.03); I <sup>2</sup> 0%; P=0.02 (4 RCTs, N=815)
	0-8: SMD (R): -0.09 (95% CI -0.39, 0.22); I <sup>2</sup> 0%; P=0.58 (2 RCTs, N=163)
	17-24: SMD (R): -0.24 (95% CI -0.55, 0.07); I <sup>2</sup> 0%; P=0.13 (2 RCTs, N=160)
>24: SMD (R): -0.17 (95% CI -0.77, 0.43) (1 RCT, N=43)	
Maternal stress at 9-16 weeks	RR (R): 0.44 (95% CI 0.20, 0.96) (1 RCT, N=103)
Mean maternal stress scores at 17-24, > 24 weeks	MD (R): 0.0 (95% CI -1.02, 1.02) (1 RCT, N=787)
	MD (R): 0.5 (95% CI -0.51, 1.51) (1 RCT, N=840)
Mean parental stress scores (PSI) at 0-8, 17-24, > 24 weeks, final study assessment (52 weeks postpartum)	>24: SMD (R): 0.27 (95% CI 0.05, 0.48); I <sup>2</sup> 0%; P=0.014 (2 RCTs, N=341)
	0-8: SMD (R): -0.08 (95% CI -0.37, 0.22) (1 RCT, N=176)
	17-24: SMD (R): -0.27 (95% CI -0.62, 0.09) (1 RCT, N=124)
	Final: SMD (R): 0.11 (95% CI -0.25, 0.48); I <sup>2</sup> 71%; P=0.54 (3 RCTs, N=465)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results/single study results</b>	
Maternal dissatisfaction with care provided at 0-8, 9-16, 17-24 weeks, final study assessment	Final: RR (R): 0.67 (95% CI 0.44, 1.00); I <sup>2</sup> 83%; P=0.051 (4 RCTs, N=3,014)
	0-8: RR (R): 0.56 (95% CI 0.29, 1.09); I <sup>2</sup> 90%; P=0.90 (2 RCTs, N=825)
	9-16: RR (R): 0.88 (95% CI 0.65, 1.19) (1 RCT, N=1,278)
	17-24: RR (R): 0.75 (95% CI 0.44, 1.25) (1 RCT, N=911)
Mean maternal dissatisfaction scores at 0-8, 9-16 weeks, final study assessment	9-16: SMD (R): 0.90 (95% CI 0.58, 1.23) (1 RCT, N=160)
	0-8: SMD (R): 0.0 (95% CI -0.17, 0.17) (1 RCT, N=516)
	Final: SMD (R): 0.44 (95% CI -0.44, 1.32); I <sup>2</sup> 96%; P=0.33 (2 RCTs, N=676)
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results/single study results</b>	
Mean marital discord scores at 0-8, 9-16, 17-24 weeks, final study assessment (24-52 weeks postpartum)	0-8: SMD (R): -0.03 (95% CI -0.34, 0.28); I <sup>2</sup> 0%; P=0.85 (2 RCTs, N=163)
	9-16: SMD (R): -0.28 (95% CI -0.63, 0.07) (1 RCT, N=127)
	17-24: SMD (R): -0.14 (95% CI -0.37, 0.09); I <sup>2</sup> 0%; P=0.23 (3 RCTs, N=291)
	Final: SMD (R): -0.14 (95% CI -0.37, 0.09); I <sup>2</sup> 0%; P=0.23 (3 RCTs, N=291)
Perceived social support at 0-8, 9-16 weeks, final study assessment (12-24 weeks postpartum)	0-8: RR (R): 0.68 (95% CI 0.45, 1.05) (1 RCT, N=528)
	9-16: RR (R): 1.02 (95% CI 0.34, 3.05) (1 RCT, N=190)
	Final: RR (R): 0.72 (95% CI 0.48, 1.08); I <sup>2</sup> 0%; P=0.11 (2 RCTs, N=718)
Mean perceived social support scores at 0-8, 9-16, 17-24, > 24 weeks, final study assessment (24-52 weeks postpartum)	0-8: SMD (R): 0.02 (95% CI -0.13, 0.17); I <sup>2</sup> 10%; P=0.78 (3 RCTs, N=822)
	9-16: SMD (R): 0.16 (95% CI -0.21, 0.53); I <sup>2</sup> 75%; P=0.40 (2 RCTs, N=863)
	17-24: SMD (R): 0.03 (95% CI -0.06, 0.12); I <sup>2</sup> 47%; P=0.51 (6 RCTs, N=8122)
	>24: SMD (R): -0.07 (95% CI -0.20, 0.06); I <sup>2</sup> 0%; P=0.28 (2 RCTs, N=955)
Final: SMD (R): 0.01 (95% CI -0.08, 0.10); I <sup>2</sup> 45%; P=0.82 (7 RCTs, N=8,290)	
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results/single study results</b>	
Child abuse potential scores at 0-8 weeks, and 1 year postpartum	0-8: MD (R): -35.66 (95% CI -62.65, -8.67) (1 RCT, N=176)
	1 year: MD (R): -41.90 (95% CI -87.48, 3.68) (1 RCT, N=66)
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Depression (symptomatology) (at final study assessment: 3-52 weeks postpartum)	<p><b>Test for subgroup differences based on variations in intervention provider:</b> Chi<sup>2</sup>: 0.30, P: 0.59, I<sup>2</sup>: 0.0%</p> <p>Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Lay-based interventions (aRR: 0.70, 95% CI 0.54-0.90, 4 trials, N=1,723)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Professionally-based interventions (aRR: 0.78, 95% CI 0.60-1.00, 15 trials, N=6,790)</li> </ul>

	<p><b>Test for subgroup differences based on variations in professionally-based intervention provider:</b> Chi<sup>2</sup>: 0.59, P: 0.90, I<sup>2</sup>: 0.0%</p> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Nurses (aRR: 0.73, 95% CI 0.51-1.04, 3 trials, N=837)</li> <li>Physicians (aRR: 0.90, 95% CI 0.55-1.49, 1 trials, N=446)</li> <li>Midwives (aRR: 0.76, 95% CI 0.54-1.07, 10 trials, N=5,477)</li> <li>Mental health specialists (aRR: 1.0, 95% CI 0.24, 4.18, 1 trial N=30)</li> </ul>
Mean depression scores (at final study assessment: 6-52 weeks postpartum)	<p><b>Test for subgroup differences based on variations in intervention provider:</b> Chi<sup>2</sup>: 0.16, P: 0.69, I<sup>2</sup>: 0.0%</p> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Professionally-based interventions (SMD: -0.10, 95% CI -0.20-0.01, 5 trials, N=1,682)</li> <li>Lay-based interventions (SMD: -0.15, 95% CI -0.40, 0.10, 12 trials, N=4,509)</li> </ul>
	<p><b>Test for subgroup differences based on variations in professionally-based intervention provider:</b> Chi<sup>2</sup>: 0.34, P: 0.84, I<sup>2</sup>: 0.0%</p> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Nurses (SMD: -0.08, 95% CI -0.51-0.34, 1 trial, N=86)</li> <li>Midwives (SMD: 0.05, 95% CI -0.09-0.19, 1 trial, N=840)</li> <li>Mental health specialists (SMD: 0.04, 95% CI -0.26-0.34, 2 trials, N=175)</li> </ul>
Clinical diagnosis of depression (at final study assessment: 12-24 weeks postpartum)	<p><b>Test for subgroup differences based on variations in intervention provider:</b> Chi<sup>2</sup>: 0.02, P: 0.89, I<sup>2</sup>: 0.0%</p> <p>Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Professionally-based interventions (RR: 0.52, 95% CI 0.32-0.86, 2 trials, N=677)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Lay-based interventions (RR: 0.56, 95% CI 0.22-1.47, 2 trials, N=227)</li> </ul>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
NR	
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Depression (symptomatology) (at final study assessment: 3-52 weeks postpartum)	<p><b>Test for subgroup differences based on variations in sample selection criteria:</b> Chi<sup>2</sup>: 1.77, P: 0.18, I<sup>2</sup>: 43%</p> <p>Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>At-risk women (aRR: 0.66, 95% CI 0.50-0.88, 8 trials, N=1,853)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>General population (aRR: 0.83, 95% CI 0.68-1.02, 12 trials, N=12,874)</li> </ul>
Mean depression scores (at final study assessment: 6-52 weeks postpartum)	<p><b>Test for subgroup differences based on variations in sample selection criteria:</b> Chi<sup>2</sup>: 0.02, P: 0.88, I<sup>2</sup>: 0.0%</p> <p>Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>At-risk women (SMD: -0.13, 95% CI -0.25-, -0.01, 7 trials, N=1,087)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>General population (SMD: -0.15, 95% CI -0.33-0.04, 12 trials, N=11,289)</li> </ul>
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
Depression (symptomatology) (at final study assessment: 3-52 weeks postpartum)	<p><b>Test for subgroup differences based on variations in intervention duration:</b> Chi<sup>2</sup>: 0.12, P: 0.73, I<sup>2</sup>: 0.0%</p> <p>Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Multiple contact intervention (aRR: 0.78, 95% CI 0.66-0.93, 16 trials, N=11,850)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Single contact intervention (aRR: 0.70, 95% CI 0.38-1.28, 4 trials, N=2,877)</li> </ul>
	<p><b>Test for subgroup differences based on variations in intervention onset:</b> Chi<sup>2</sup>: 2.72, P: 0.10, I<sup>2</sup>: 63%</p> <p>Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Postnatal intervention only (aRR: 0.73, 95% CI 0.59-0.90, 12 trials, N=12,786)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>Antenatal and postnatal intervention (aRR: 0.96, 95% CI 0.75-1.22, 8 trials, N=1,941)</li> </ul>
Mean depression scores (at final	<b>Test for subgroup differences based on variations in intervention duration:</b> Chi <sup>2</sup> :

<p>study assessment: 6-52 weeks postpartum)</p>	<p>3.50, P: 0.06, I<sup>2</sup>: 71%  No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Single contact intervention (SMD: 0.04, 95% CI -0.07-0.15, 2 trials, N=1,362)</li> <li>• Multiple contact intervention (SMD: -0.15, 95% CI -0.32-0.02, 17 trials, N=11,014)</li> </ul> <p><b>Test for subgroup differences based on variations in <u>intervention onset</u>:</b> Chi<sup>2</sup>: 3.71, P: 0.16, I<sup>2</sup>: 46%  No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Antenatal intervention only (SMD: 0.03, 95% CI -0.09-0.16, 4 trials, N=1050)</li> <li>• Antenatal and postnatal intervention (SMD: -0.14, 95% CI -0.31-0.02, 7 trials, N=1,000)</li> <li>• Postnatal intervention only (SMD: -0.16, 95% CI -0.40-0.08, 8 trials, N=10,326)</li> </ul>
<p>Clinical diagnosis of depression (at final study assessment: 12-24 weeks postpartum)</p>	<p><b>Test for subgroup differences based on variations in <u>intervention onset</u>:</b> Chi<sup>2</sup>: 2.39, P: 0.30, I<sup>2</sup>: 16%  Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Antenatal and postnatal intervention (RR: 0.44, 95% CI 0.24-0.80, 3 trials, N=292)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Antenatal intervention only (RR: 0.08, 95% CI 0.00-1.34, 1 trials, N=35)</li> <li>• Postnatal intervention only (RR: 0.65, 95% CI 0.34-1.23, 1 trials, N=612)</li> </ul>
<p><b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b></p>	
<p>Depression (symptomatology) (at final study assessment: 3-52 weeks postpartum)</p>	<p>Psychosocial interventions (aRR: 0.83, 95% CI 0.70, 0.99, 12 trials, N=11,322)  Psychological interventions (aRR: 0.61, 95% CI 0.39, 0.96, 8 trials, N=3,405)</p> <p><b>Test for subgroup differences based on variations in <u>psychosocial interventions</u>:</b>  Chi<sup>2</sup>: 16.37, P: 0.01, I<sup>2</sup>: 69%  Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Postpartum professional-based home visits (aRR: 0.56, 95% CI 0.43-0.73, 2 trials, N=1,262)</li> <li>• Postpartum lay-based telephone support (aRR: 0.54, 95% CI 0.38-0.77, 1 trial, N=612)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Antenatal and postnatal classes (aRR: 1.01, 95% CI 0.77-1.32, 4 trials, N=14,88)</li> <li>• Postpartum lay-based home visits (aRR: 0.88, 95% CI 0.62-1.25, 1 trial, N=493)</li> <li>• Early postpartum follow-up (aRR: 0.90, 95% CI 0.55-1.49, 1 trial, N=466)</li> <li>• Continuity/model of care (aRR: 0.99, 95% CI 0.71-1.36, 3 trials, N=7,021)</li> </ul> <p><b>Test for subgroup differences based on variations in <u>psychological interventions</u>:</b>  Chi<sup>2</sup>: 0.21, P: 0.64, I<sup>2</sup>: 0.0%  No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Psychological debriefing (aRR: 0.57, 95% CI 0.31-1.03, 5 trials, N=3,050)</li> <li>• Cognitive behavioural therapy (aRR: 0.74, 95% CI 0.29-1.88, 1 trial, N=150)</li> </ul> <p><b>Test for subgroup differences based on variations in <u>intervention mode</u>:</b>  Chi<sup>2</sup>: 1.41, P: 0.24, I<sup>2</sup>: 29%  Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Individually-based interventions (aRR: 0.75, 95% CI 0.61-0.92, 14 trials, N=12,914)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Group-based interventions (aRR: 0.92, 95% CI 0.71-1.19, 6 trials, N=1,813)</li> </ul>
<p>Mean depression scores (at final study assessment: 6-52 weeks postpartum)</p>	<p><b>Test for subgroup differences based on variations in <u>psychosocial interventions</u>:</b>  Chi<sup>2</sup>: 0.65, P: 0.42, I<sup>2</sup>: 0.0%  No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Antenatal and postnatal classes (SMD: 0.01, 95% CI -0.11-0.13, 3 trials, N=1,124)</li> <li>• Antenatal and postnatal lay-based home visits and telephone support (SMD: -0.10, 95% CI -0.33-0.14, 1 trial, N=287)</li> </ul>

	<p><b>Test for subgroup differences based on variations in <u>psychological interventions</u>:</b>  Chi<sup>2</sup>: 3.50, P: 0.06, I<sup>2</sup>: 71%  Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Interpersonal psychotherapy (SMD: -0.27, 95% CI -0.52, -0.01, 5 trials, N=366)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Cognitive behavioural therapy (SMD: 0.13, 95% CI -0.20-0.45, 1 trial, N=150)</li> </ul>
	<p><b>Test for subgroup differences based on variations in <u>intervention mode</u>:</b>  Chi<sup>2</sup>: 0.23, P: 0.63, I<sup>2</sup>: 0.0%  No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Individually-based interventions (SMD: -0.15, 95% CI -0.37-0.07, 11 trials, N=10,092)</li> <li>• Group-based interventions (SMD: -0.08, 95% CI -0.23-0.06, 8 trials, N=2,284)</li> </ul>
Clinical diagnosis of depression (at final study assessment: 12-24 weeks postpartum)	<p><b>Test for subgroup differences based on variations in <u>intervention mode</u>:</b>  Chi<sup>2</sup>: 0.39, P: 0.53, I<sup>2</sup>: 0.0%  Significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Individually-based interventions (aRR: 0.53, 95% CI 0.33-0.84, 3 trials, N=714)</li> </ul> <p>No significant preventive effect for:</p> <ul style="list-style-type: none"> <li>• Group-based interventions (aRR: 0.30, 95% CI 0.05-1.66, 2 trials, N=225)</li> </ul>
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID: Bayley Scales of Infant Development; CI: confidence intervals; cRCT: cluster- randomised controlled trial; MD: mean difference; N: number; NR: not reported; P: P value; PSI: Parenting Stress Index; (R): random effects; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; SMD: standardised mean difference; UK: United Kingdom; USA: United States of America

## Interventions for treating maternal depression in the perinatal period

**Table 19: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review	
		Bee 2014	Poobalan 2007
Study ID	Appleby 1997	✓ (RCT, N=87)	
	Chabrol 2002	✓ (qRCT, N=258)	
	Clark 2003	✓ (qRCT, N=39)	✓ (CCT, N=39)
	Clark 2008	✓ (qRCT, N=32)	
	Cooper 2003 (Murray 2003)	✓ (RCT, N=193)	✓ (RCT, N=193)
	Gelfand 1996	✓ (qRCT, N=73)	
	Grote 2009	✓ (RCT, N=53)	
	Hart 1998		✓ (RCT, N=27)
	Holden 1989	✓ (RCT, N=55)	
	Horowitz 2001		✓ (RCT, N=122)
	Meager 1996	✓ (RCT, N=20)	✓ (RCT, N=20)
	Milgrom 2011	✓ (RCT, N=68)	
	Misri 2000	✓ (RCT, N=29)	
	Misri 2004 (Misri 2006)	✓ (RCT, N=35)	
	Mulcahy 2010	✓ (RCT, N=57)	
	O'Hara 2000 (Forman 2007; Nylen 2010)	✓ (RCT, N=120)	✓ (RCT, N=120)
	Onozawa 2001 (Glover 2002)		✓ (RCT, N=34)
	Rahman 2008	✓ (cRCT, N=903)	
Rojas 2007	✓ (RCT, N=230)		
Wickberg 1996	✓ (RCT, N=41)		

**Abbreviations:** CCT: controlled clinical trial; cRCT: cluster randomised controlled trial; N: number; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial

**Table 20: Evidence table for Bee 2014<sup>14</sup>**

<b>Review ID</b>	Bee 2014
<b>Search date</b>	Database inceptions to May 2012
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	59 studies in the review; 17 relevant studies (12 RCTs, 1 cRCT, 4 qRCTs)
<b>No. participants in relevant studies</b>	2,293
<b>Location/setting</b>	Australia: 3 trials; Canada: 2 trials; Chile: 1 trial; France: 1 trial; Pakistan: 1 trial; Sweden: 1 trial; UK: 3 trials; USA: 5 trials
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 10/11 ('high' quality)
<b>Quality of relevant studies</b>	1 trial: low risk of bias overall; 12 trials: unclear risk of bias overall; 4 trials: high risk of bias overall. Review authors' summary: all but 1 of the trials pertaining to severe parental depression were judged to be at a high or unclear risk of bias, indicating a relatively poor level of trial quality overall; trials were of poor or unclear quality with inadequate randomisation or allocation concealment, possible attrition bias, and incomplete outcome reporting
<b>Review objective</b>	To conduct an evidence synthesis of the clinical effectiveness, cost-effectiveness and acceptability of community-based interventions for maintaining or improving quality of life in children of parents with serious mental illness

<sup>14</sup> green shading indicates results significantly in favour of the intervention

<b>Review eligibility criteria</b>	<u>Designs</u> : priority given to designs in which a comparator/control group was present (RCTs, quasi-experimental controlled studies, and controlled observational studies) (with other designs included only where there was no other evidence to address the review objectives); <u>participants</u> : children or adolescents aged 0-17 years with a parent with a serious mental health condition were included (studies where ≥ 50% of parents had a serious mental illness or severe depression confirmed by clinical diagnosis or baseline symptoms were included); <u>interventions</u> : any community-based, health, social care or educational intervention aimed at the young person, their parent or family unit; <u>comparators</u> : all controlled studies, irrespective of their control condition; <u>outcomes</u> : primary: generic or population specific quality of life measures, and/or child-centred mental health symptoms; secondary: additional quality of life indicators, early quality of life mediators, and parental mental health symptoms; <u>other</u> : published in English	
<b>Participant population</b>	15 trials reported > 50% of parents having confirmed clinical diagnosis of DSM-III/IV MDD with overall proportions ranging from 59-100% (2 trials did not specify precise proportions); all 17 trials targeted 100% females/mothers. Ethnic status of participants heavily focused on parents of European, Caucasian descent. 15 trials targeted mothers of children in 1 <sup>st</sup> year of life; 2 trials recruited women with MDD diagnosed in antenatal period	
<b>Intervention</b>	Intervention models: psychotherapeutic (15 trials), psychoeducational (1 trial), extended care (1 trial). Psychotherapeutic interventions aimed at reducing severity of depressive symptoms, most frequently: planned cognitive-behavioural (8 trials) and interpersonal therapies/approaches (4 trials), psychodynamic (2 trials), and non-directive supportive therapies (3 trials). 15/17 trials were aimed predominately/solely at depressed parents (only 2 delivered an active/structured intervention to the infant). Delivery modes most frequently: individual and face to face; delivered with a broad range of health and social care professionals; in the home (5 trials), community/clinic (9 trials), mixed setting (1 trial), unclear (2 trials). Interventions ranged in session number and length (with total intervention contact ranging from 4 hours to 24 hours where reported, and total duration of interventions ranging from 5-8 weeks to 11 months where reported)	
<b>Comparator</b>	Majority (15/17 trials): treatment as usual/waiting list control	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to one year of age</b>		
<b>Outcome measure used in the review</b>		<b>Results reported in the review</b>
<b>Pooled results</b>		
Children's emotional well-being: short-term outcomes (0-6 months post-randomisation) (including: observer ratings of infant affect)		SMD (R): 0.06 (95% CI -0.20 to 0.33); I <sup>2</sup> 0%; P=NR (5 trials, N=212) <i>(1 RCT, 2qRCTs, N=152 in relevant age group: ES for relevant studies ranging from 0.08 to 0.36)</i> (all variants of community based interventions vs. treatment as usual/waiting-list control)
Children's behaviour and social function: short-term outcomes (0-6 months post-randomisation) (including: observer ratings of infant behaviour)		SMD (R): 0.23 (95% CI 0.00, 0.46); I <sup>2</sup> 0%; P=NR (8 trials, N=397) <i>(1 RCT, 2 qRCTs, N=151 in relevant age group: ES for relevant studies ranging from -0.53 to 0.60)</i>
<b>Single study results</b>		
Children's emotional wellbeing: long-term outcome (observer ratings of infant emotion 16 months post randomisation)		SMD: -0.35 (95% CI -0.75, 0.05) (1 qRCT, N=98)
Children's behaviour and social function: long-term outcome (ratings of infant behaviour at 16 months post-randomisation)		SMD: 0.17 (95% CI -0.22, 0.56) (1 qRCT, N=98)
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>		<b>Results reported in the review</b>
<b>Single study results</b>		
Cognitive function: short-term outcome (infant cognitive development at 12 weeks post-randomisation)		SMD: 0.08 (95% CI -0.45, 0.60) (1 qRCT, N=24)
Cognitive function: long-term outcome (ratings of infant cognitive development at 16 months post-randomisation)		SMD: 0.05 (95% CI -0.58, 0.67) (1 qRCT, N=98)
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>		<b>Results reported in the review</b>
NR		NR



<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Children's physical health: 6 and 12 months height and weight	SMD: 0.02 (95% CI -0.31, 0.34) (1 cRCT, N=745) SMD: 0.02 (95% CI -0.27, 0.30) (1 cRCT, N=745) SMD: 0.017 (95% CI -0.06, 0.40) (1 cRCT, N=745) SMD: 0.11 (95% CI -0.08; 0.31) (1 cRCT, N=745)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Quality of parent-child interactions: parenting behaviours: short-term outcome (0-6 months post-randomisation)	SMD (R): 0.67 (95% CI 0.32, 1.02); $I^2$ 50.8; P=NR (6 trials, N=378) <i>(3 RCTs, 2 qRCTs, N=359 in relevant age group; ES for relevant studies ranging from: 0.08 to 1.83)</i>
<b>Single study results</b>	
Quality of parent-child interactions: parenting behaviours: medium-term outcome (play frequency with child)	SMD: 0.58 (95% CI 0.38, 0.77) (1 cRCT, N=705)
Quality of parent-child interactions: parenting behaviours: long-term outcome (maternal responsiveness at 16 months post-randomisation)	SMD: 0.27 (95% CI -0.13, 0.67) (1 qRCT, N=98)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Parental mental health: short-term outcomes (0-6 months post-randomisation)	SMD (R): 0.73 (95% CI 0.51, 0.94); $I^2$ 67.8%; P=NR (17 trials, N=1,855) <i>(11 RCTs, 3 qRCTs, N=1,698 in relevant age group; ES for relevant studies ranging from: 0.08 to 2.56)</i>
Parental mental health: medium-term outcomes (6-12 months post-randomisation)	SMD (R): 0.34 (95% CI 0.00, 0.68); $I^2$ 64.9%; P=NR (4 trials, N=1,098) <i>(2 RCTs, N=975 in relevant age group; ES for relevant studies ranging from 0.07 to 0.72)</i>
Parental mental health: long-term outcomes (>12 months post-randomisation)	SMD (R): 0.17 (95% CI -0.04, 0.39); $I^2$ 0; P=NR (3 trials, N=373) <i>(1 RCT, 1qRCT, N=273 in relevant age group; ES for relevant studies: 0.00 and 0.49)</i>
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Children's emotional well-being and children's behaviour and social function (0-6 months post-randomisation)	Overall comments: "The limited number of comparisons contributing to this analysis, in conjunction with the heterogeneous mix of interventions, populations and outcomes included within it, means that these results should be interpreted with caution" [emotional wellbeing] "The limited number of comparisons contributing to this analysis, in conjunction with the heterogeneous mix of interventions, populations and outcomes included, means that these results should be interpreted with caution. The small number of trials providing data for this outcome prevented any examination of clinical heterogeneity" [behaviour and social function] 3 relevant studies in meta-analysis all had standardised effects that were not statistically significant for emotional wellbeing, and 1 (Forman 2007) was significant for behaviour and social function <ul style="list-style-type: none"> <li>• Personnel: <ul style="list-style-type: none"> <li>○ Psychologists/psychiatry residents, psychology interns, child development trainees (Clark 2003 (1 &amp; 2); Clark 2008)</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Psychotherapists with clinical/counselling psychology degrees (Forman 2007)</li> </ul>																																										
Quality of parent-child interactions: parenting behaviours (0-6 months post-randomisation)	<p>5 relevant studies in meta-analysis; 3 of the 5 studies suggested efficacy in favour of the intervention (Clark 2003 (1&amp;2), Clark 2008; Cooper 2003 (1))</p> <ul style="list-style-type: none"> <li>• Personnel: <ul style="list-style-type: none"> <li>○ Psychologists/psychiatry residents, psychology interns, child development trainees (Clark 2003; Clark 2008)</li> <li>○ Psychotherapists with clinical/counselling psychology degrees (Forman 2007)</li> <li>○ Unclear (Mulcahy 2010)</li> <li>○ Cognitive behavioural therapy specialists and non-specialists (Cooper 2003 (1-3))</li> </ul> </li> </ul>																																										
Parental mental health (0-6 months post-randomisation)	<p>“Examinations of heterogeneity were undertaken for this outcome... However, it should be acknowledged that the meaningful interpretation of these data is limited by the small number of comparisons contributing data to some groups and by confounding variation in trial quality and the characteristics of the populations and interventions being compared. The results of these analyses are presented... should be treated with the utmost caution. “</p> <p>14 relevant studies in meta-analysis; 8 of the 14 relevant studies suggested efficacy in favour of the intervention (Chabrol 2002; Clark 2008; Grote 2009; Holden 1989; Meager 1996; Mulcahy 2010; O’Hara 2000; Rahman 2008)</p> <table border="1"> <thead> <tr> <th>Study</th> <th>Personnel</th> </tr> </thead> <tbody> <tr> <td colspan="2"><b>Interventions showing significant benefit</b></td> </tr> <tr> <td>Chabrol 2002</td> <td>Psychology masters students</td> </tr> <tr> <td>Clark 2008</td> <td>Psychologists/ psychiatry residents, psychology interns, child development trainees</td> </tr> <tr> <td>Grote 2009</td> <td>Doctoral/ masters-level clinicians</td> </tr> <tr> <td>Holden 1989</td> <td>Health visitor</td> </tr> <tr> <td>Meager 1996</td> <td>Clinical psychologist</td> </tr> <tr> <td>Mulcahy 2010</td> <td>Unclear</td> </tr> <tr> <td>O’Hara 2000</td> <td>Psychotherapists with clinical/counselling psychology degrees</td> </tr> <tr> <td>Rahman 2008</td> <td>Community health workers</td> </tr> <tr> <td colspan="2"><b>Interventions not showing clear benefits</b></td> </tr> <tr> <td>Clark 2003 (1)</td> <td>Psychologists, social workers, psychology interns, post doc fellows with 2 years’ clinical experience</td> </tr> <tr> <td>Clark 2003 (2)</td> <td>Psychologists, social workers, psychology interns, post doc fellows with 2 years’ clinical experience</td> </tr> <tr> <td>Cooper 2003 (1)</td> <td>CBT specialists and non-specialists</td> </tr> <tr> <td>Cooper 2003 (2)</td> <td>CBT specialists and non-specialists</td> </tr> <tr> <td>Cooper 2003 (3)</td> <td>CBT specialists and non-specialists</td> </tr> <tr> <td>Milgrom 2011 (1)</td> <td>Nurses</td> </tr> <tr> <td>Milgrom 2011 (2)</td> <td>Psychologist</td> </tr> <tr> <td>Misri 2004</td> <td>Psychologist</td> </tr> <tr> <td>Rojas 2007</td> <td>Midwives or nurses</td> </tr> <tr> <td>Wickberg 1996</td> <td>Nurses</td> </tr> </tbody> </table>	Study	Personnel	<b>Interventions showing significant benefit</b>		Chabrol 2002	Psychology masters students	Clark 2008	Psychologists/ psychiatry residents, psychology interns, child development trainees	Grote 2009	Doctoral/ masters-level clinicians	Holden 1989	Health visitor	Meager 1996	Clinical psychologist	Mulcahy 2010	Unclear	O’Hara 2000	Psychotherapists with clinical/counselling psychology degrees	Rahman 2008	Community health workers	<b>Interventions not showing clear benefits</b>		Clark 2003 (1)	Psychologists, social workers, psychology interns, post doc fellows with 2 years’ clinical experience	Clark 2003 (2)	Psychologists, social workers, psychology interns, post doc fellows with 2 years’ clinical experience	Cooper 2003 (1)	CBT specialists and non-specialists	Cooper 2003 (2)	CBT specialists and non-specialists	Cooper 2003 (3)	CBT specialists and non-specialists	Milgrom 2011 (1)	Nurses	Milgrom 2011 (2)	Psychologist	Misri 2004	Psychologist	Rojas 2007	Midwives or nurses	Wickberg 1996	Nurses
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	<ul style="list-style-type: none"> <li>○ ≥ 18 years, 10-32 weeks gestation, &gt; 12 EDPS, English speaking, telephone access, local area (Grote 2009)</li> <li>○ Research diagnostic criteria depression (Holden 1989)</li> <li>○ Depression within 6 months postpartum ≥ 12 EPDS, ≥ 15 BDI (Meager 1996)</li> <li>○ &gt; 13 EPDS, infant aged 6 weeks to 4 months (Milgrom 2011)</li> <li>○ ≥ 18 HRSD, ≥ 20 HAM-A, ≥ 12 EPDS; 18–40 years old, able to understand English, healthy delivery 37–42 weeks, minimum birth weight of child 2.5 kg, non-smokers, willing to use contraception</li> <li>○ DSM-IV MDD with infant 0-12 months (Mulcahy 2010)</li> <li>○ ≥ 18 years old, married/cohabiting for 6 months, DSM-IV MDE, ≥ 12 on 17-item HRSD (O’Hara 2000)</li> <li>○ Women aged 16–45 years, married, third trimester of pregnancy (Rahman 2008)</li> <li>○ Child &lt; 1 year, 10 + EPDS (Rojas 2007)</li> <li>○ DSM-III-R MDD, MADRS &gt; 10 (Wickberg 1996)</li> </ul>	
<b>When could be the best time for the intervention, program, or message delivery to occur?</b>		
Children’s emotional well-being and children’s behaviour and social function (0-6 months post-randomisation)	<ul style="list-style-type: none"> <li>• 12 weekly sessions, 2 hours (total contact: 24 hours; total duration: 12 weeks) (Clark 2003 (1 &amp; 2); Clark 2008)</li> <li>• 12 weekly sessions, 1 hour (total contact: 12 hours; total duration: 12 weeks) (Forman 2007)</li> </ul>	
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Parental mental health (0-6 months post-randomisation)	<b>Study</b>	<b>Session number, session length (total contact, total duration)</b>
	<b>Interventions showing significant benefit</b>	
	Chabrol 2002	5-8 weekly sessions, 1 hour (6.5 hours) 5-8 weeks
	Clark 2008	12 weekly sessions, 2 hours (24 hours, 12 weeks)
	Grote 2009	8 weekly then bi-weekly/monthly, unclear (unclear, 8 weeks)
	Holden 1989	8 weekly, 30 minutes (4 hours, 8 weeks)
	Meager 1996	10 weekly sessions, 1.5 hours (15 hours, 10 weeks)
	Mulcahy 2010	Unclear, 2 hours (22 hours, 8 weeks)
	O’Hara 2000	12 weekly, 1 hour (12 hours, 12 weeks)
	Rahman 2008	7 weekly and then monthly, unclear (unclear, 11 months)
	<b>Interventions not showing clear benefits</b>	
	Clark 2003 (1)	12 weekly sessions, 1.5-2 hours (18 hours, 12 weeks)
	Clark 2003 (2)	12 weekly sessions, 2 hours (24 hours, 12 weeks)
	Cooper 2003 (1)	10 weekly sessions, unclear (unclear, 10 weeks)
	Cooper 2003 (2)	10 weekly sessions, unclear (unclear, 10 weeks)
	Cooper 2003 (3)	10 weekly sessions, unclear (unclear, 10 weeks)
	Milgrom 2011 (1)	6 weekly, unclear (unclear, 6 weeks)
	Milgrom 2011 (2)	6 weekly, unclear (unclear, 6 weeks)
	Misri 2004	12 weekly, 1 hour (12 hours, 12 weeks)
	Rojas 2007	8 weekly, 50 minutes (6 hours 40 minutes, 8 weeks)
Wickberg 1996	6 weekly, 1 hour (6 hours, 6 weeks)	
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b>		
Children’s emotional well-being and children’s behaviour and social function (0-6 months post-	<ul style="list-style-type: none"> <li>• Intervention mode: psychotherapy (Clark 2003 (1); Clark 2008; Forman 2007)</li> <li>• Intervention objective: parenting and parent wellbeing (Clark 2003 (1); Clark 2008); parent well-being (Clark 2003 (2); Forman 2007)</li> <li>• Intervention content: mother-infant therapy (Clark 2003 (1); Clark 2008); interpersonal social therapy (Clark 2003 (2); Forman 2007)</li> <li>• Target: parent and child (Clark 2003 (1); Clark 2008); parent (Clark 2003 (2); Forman 2007)</li> </ul>	

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Parental mental health (0-6 months post-randomisation)	<p>“Grouping the trials by intervention target resulted in a medium to large effect for parent-based interventions (standardised ES 0.72, 95% CI 0.49 to 0.94) and a large effect for dyadic interventions (standardised ES 0.92, 95% CI 0.24 to 1.59). This latter effect was derived from two quasi-randomised studies and was less precise in its estimate. A lack of data for child-based interventions prevented any direct comparisons with this group.”</p> <p>“Pooling trials by intervention objectives revealed a medium to large effect for interventions targeting parental well-being (standardised ES 0.76, 95% CI 0.51 to 1.01) and a small to medium, non-significant effect for a small number of comparisons (n = 3) targeting the parent-child relationship (standardised ES 0.45, 95% CI -0.02 to 0.92). A pooled effect for dual focus interventions was obtained from two quasi-randomised comparisons. This effect was large and significant but ultimately less precise in its estimate (standardised ES 0.92, 95% CI 0.24 to 1.59).”</p> <table border="1"> <thead> <tr> <th>Study</th> <th>Intervention mode</th> <th>Intervention objective</th> <th>Intervention content</th> <th>Target</th> <th>Delivery</th> <th>Format</th> </tr> </thead> <tbody> <tr> <td colspan="7"><b>Interventions showing significant benefit</b></td> </tr> <tr> <td>Chabrol 2002</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>Mixed CBT PD</td> <td>Parent</td> <td>Face to face</td> <td>Individual</td> </tr> <tr> <td>Clark 2008</td> <td>Psychotherapy</td> <td>Parenting and parent wellbeing</td> <td>Mother-infant therapy</td> <td>Parent and child</td> <td>Face to face</td> <td>Group</td> </tr> <tr> <td>Grote 2009</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>Brief IPT</td> <td>Parent</td> <td>Face to face or telephone</td> <td>Individual</td> </tr> <tr> <td>Holden 1989</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>Home counselling</td> <td>Parent</td> <td>Face to face</td> <td>Individual</td> </tr> <tr> <td>Meager 1996</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>CBT</td> <td>Parent</td> <td>Face to face</td> <td>Group</td> </tr> <tr> <td>Mulcahy 2010</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>IPT</td> <td>Parent</td> <td>Face to face</td> <td>Individual</td> </tr> <tr> <td>O’Hara 2000</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>IPT</td> <td>Parent</td> <td>Face to face</td> <td>Individual</td> </tr> <tr> <td>Rahman 2008</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>CBT techniques</td> <td>Parent</td> <td>Face to face</td> <td>Individual</td> </tr> <tr> <td colspan="7"><b>Interventions not showing clear benefits</b></td> </tr> <tr> <td>Clark 2003 (1)</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>IPT</td> <td>Parent</td> <td>Face to face</td> <td>Group</td> </tr> <tr> <td>Clark 2003 (2)</td> <td>Psychotherapy</td> <td>Parenting and parent wellbeing</td> <td>Mother-infant therapy</td> <td>Parent and child</td> <td>Face to face</td> <td>Group</td> </tr> <tr> <td>Cooper 2003 (1)</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>CBT</td> <td>Parent</td> <td>Face to face</td> <td>Individual</td> </tr> <tr> <td>Cooper 2003 (2)</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>Psychodynamic therapy</td> <td>Parent</td> <td>Face to face</td> <td>Individual</td> </tr> <tr> <td>Cooper 2003 (3)</td> <td>Psychotherapy</td> <td>Parent wellbeing</td> <td>Non-directive counselling</td> <td>Parent</td> <td>Face to face</td> <td>Individual</td> </tr> <tr> <td>Milgrom</td> <td>Psychotherapy</td> <td>Parent</td> <td>CBT (nurse)</td> <td>Parent</td> <td>Face to</td> <td>Individual</td> </tr> </tbody> </table>	Study	Intervention mode	Intervention objective	Intervention content	Target	Delivery	Format	<b>Interventions showing significant benefit</b>							Chabrol 2002	Psychotherapy	Parent wellbeing	Mixed CBT PD	Parent	Face to face	Individual	Clark 2008	Psychotherapy	Parenting and parent wellbeing	Mother-infant therapy	Parent and child	Face to face	Group	Grote 2009	Psychotherapy	Parent wellbeing	Brief IPT	Parent	Face to face or telephone	Individual	Holden 1989	Psychotherapy	Parent wellbeing	Home counselling	Parent	Face to face	Individual	Meager 1996	Psychotherapy	Parent wellbeing	CBT	Parent	Face to face	Group	Mulcahy 2010	Psychotherapy	Parent wellbeing	IPT	Parent	Face to face	Individual	O’Hara 2000	Psychotherapy	Parent wellbeing	IPT	Parent	Face to face	Individual	Rahman 2008	Psychotherapy	Parent wellbeing	CBT techniques	Parent	Face to face	Individual	<b>Interventions not showing clear benefits</b>							Clark 2003 (1)	Psychotherapy	Parent wellbeing	IPT	Parent	Face to face	Group	Clark 2003 (2)	Psychotherapy	Parenting and parent wellbeing	Mother-infant therapy	Parent and child	Face to face	Group	Cooper 2003 (1)	Psychotherapy	Parent wellbeing	CBT	Parent	Face to face	Individual	Cooper 2003 (2)	Psychotherapy	Parent wellbeing	Psychodynamic therapy	Parent	Face to face	Individual	Cooper 2003 (3)	Psychotherapy	Parent wellbeing	Non-directive counselling	Parent	Face to face	Individual	Milgrom	Psychotherapy	Parent	CBT (nurse)	Parent	Face to	Individual
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<b>Interventions not showing clear benefits</b>																																																																																																																								
Clark 2003 (1)	Psychotherapy	Parent wellbeing	IPT	Parent	Face to face	Group																																																																																																																		
Clark 2003 (2)	Psychotherapy	Parenting and parent wellbeing	Mother-infant therapy	Parent and child	Face to face	Group																																																																																																																		
Cooper 2003 (1)	Psychotherapy	Parent wellbeing	CBT	Parent	Face to face	Individual																																																																																																																		
Cooper 2003 (2)	Psychotherapy	Parent wellbeing	Psychodynamic therapy	Parent	Face to face	Individual																																																																																																																		
Cooper 2003 (3)	Psychotherapy	Parent wellbeing	Non-directive counselling	Parent	Face to face	Individual																																																																																																																		
Milgrom	Psychotherapy	Parent	CBT (nurse)	Parent	Face to	Individual																																																																																																																		

	2011 (1)		wellbeing			face	
	Milgrom 2011 (2)	Psychotherapy	Parent wellbeing	CBT (psychologist)	Parent	Face to face	Individual
	Misri 2004	Psychotherapy	Parent wellbeing	CBT and paroxetine	Parent	Face to face	Individual
	Rojas 2007	Psychotherapy	Parent wellbeing	Brief CBT, education	Parent	Face to face	Group
	Wickberg 1996	Psychotherapy	Parent wellbeing	ST counselling	Parent	Face to face	Individual

How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?

NR

What could **impede** or interfere with engagement with interventions or programs or caregivers enacting upon messages?

QUALITATIVE DATA

- 2 relevant studies focusing on short-term psychotherapeutic interventions highlighted a perceived sense of culpability among mothers and a fear of how others may react to their experiences
- In 1 study although women in a 12 week CBT program found the small group work helpful, 1 woman who dropped out of treatment early expressed some discomfort in talking openly in a group forum
- In 1 study in a 8 week CBT program, the partners evening which was included in the intervention was regarded as invaluable for the majority, however some couples expressed dissatisfaction with the open format

What could **facilitate** or drive with engagement with interventions or programs or caregivers enacting upon messages?

QUALITATIVE DATA

“Overall, a notable number of studies provided data for the synthesis of parents’ views, although very few high-quality in-depth studies were found. Key topics emerging from the available qualitative data highlighted the significance of establishing high-quality relationships between staff and parents, and the importance of delivering interventions in such a way that stigma and social isolation could be reduced”

- 4 relevant studies emphasised the importance of establishing an emotionally supportive alliance between parents and staff, such that parents were afforded the freedom to discuss their concerns
- 3 relevant studies focusing on short-term psychotherapeutic interventions highlighted the need for staff to facilitate the provision of a safe and non-judgemental environment for mothers to share their feelings
- In 1 study on an extended care intervention, women identified the importance of approachable and communicative staff; unbiased and affirming professionals who practically and routinely enquired about the mothers’ feelings were considered particularly valuable in overcoming the stigma experiences
- In 4 relevant studies addressing issues relating to group therapy, all were largely supportive of this delivery format – parents were relatively consistent in perceiving group interventions to provide a route for much needed peer support and positive interpersonal relationships; in addition, studies discussed the benefits of sharing parenting or illness concerns, and the role the group membership had played in overcoming stigma and normalising parents’ experiences
- 1 relevant study evaluated a short-term parent intervention and highlighted a preference for greater couple or family focused participation
- In 1 study following a 12 week CBT all women found at least 1 session helpful, with sessions on ‘crooked thinking’ and self-esteem most highly valued

QUANTITATIVE DATA

“The vast majority of qualitative studies remained focused on overall satisfaction or on satisfaction with particular aspects of an intervention program. No large-scale satisfaction surveys were found. The available quantitative data, like the qualitative data, thus remain limited in both number and quality.”

- 1 study assessing CBT delivered by a nurse or psychologist: the majority of women indicated that treatment was sufficient, with a trend towards higher satisfaction in the intervention groups
- 1 study assessing a multicomponent intervention, almost all women felt satisfied with their care, and reported that they would like the treatment again
- 3 studies (uncontrolled) reported: high satisfaction, that they intervention was an acceptable way to address their problems, that they would recommend the intervention to a friend, with: 8 week IPT program, 10 sessions of IPT, 6 week supportive therapy program
- 1 study of 17 week home-based CBT program, mothers reported that there was an excellent collaboration between therapists and routine home visitors and an appropriate level of confidentiality had been maintained

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CBT: cognitive behaviour therapy; CI: confidence interval; cRCT: cluster randomised controlled trial; DSM-III/IV: Diagnostic and Statistical Manual of Mental Disorders; ES: effect size; IPT: interpersonal therapy; MDD: maternal depressive disorder; N: number; NR: not reported; P: P value; qRCT: quasi-randomised controlled trial; (R): random effects; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; SMD: standardised mean difference; UK: United Kingdom; USA: United States of America

**Table 21: Evidence table for Poobalan 2007<sup>15</sup>**

<b>Review ID</b>	Poobalan 2007
<b>Search date</b>	1966 to 2005
<b>Review method</b>	Narrative synthesis ( <i>“Combination of results using meta-analysis was inappropriate owing to the heterogeneity of the included studies”</i> )
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	7 studies (6 RCTs; 1 CCT)
<b>No. participants in relevant studies</b>	555
<b>Location/setting</b>	Australia: 1 trial; UK: 2 trials; USA: 4 trials
<b>Quality of review</b>	ROBIS: unclear risk of bias AMSTAR: 6/11 ( <i>‘moderate’</i> quality)
<b>Quality of relevant studies</b>	1 trial <i>‘strong’</i> quality; 6 trials <i>‘moderate’</i> quality
<b>Review objective</b>	To assess the benefits of treating postnatal depression for mother-infant interaction and child development
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs and CCTs; <u>participants</u> : mothers diagnosed with postpartum depression; <u>interventions</u> : all types of treatment interventions (pharmacological and non-pharmacological); <u>outcomes</u> : outcomes measured in children up to 14 years of age
<b>Participant population</b>	Mothers diagnosed with postpartum depression; mothers only (3 trials); mothers and infants (4 trials)
<b>Intervention</b>	Interventions varied widely, e.g. 1) infant massage and support group vs. support group; 2) home visits and interaction coaching vs. home visits; 3) NBAS and MABI-based intervention vs. written report of infants’ behaviour only; 4) interpersonal psychotherapy vs. waiting-list control; 5) postpartum support program vs. waiting-list control; 6) mother-infant therapy vs. interpersonal psychotherapy vs. waiting-list control; 7) non-directive supportive counselling vs. cognitive behavioural therapy vs. psychodynamic therapy vs. usual primary care; all interventions involved therapies aimed at the mother-infant relationship Where reported, intervention durations ranged, e.g. 30 minute weekly session for 5 weeks; 60 minute weekly session for 12 weeks; 3 home visits with interaction coaching (15 minute) over 18 weeks
<b>Comparator</b>	See above under ‘Intervention’
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Examiner ratings on NBAS after 1 month: social interaction, state organisation	Favoured intervention (P<0.05) (1 RCT, N=27) ( <i>NBAS and MABI-based intervention</i> )
Mothers’ perceptions on NBAS after 1 month: social interaction, motor and state organisation	No significant difference (1 RCT, N=27) ( <i>NBAS and MABI-based intervention</i> )
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Child cognitive development scores at 18 months follow up	No group differences (P=0.85) (1 RCT, N=193) ( <i>counselling; cognitive behavioural therapy; psychodynamic therapy</i> )
Cognitive development (McCarthy Scales) at 5 year follow up	No group differences (P=0.91) (1 RCT, N=193) ( <i>counselling; cognitive behavioural therapy; psychodynamic therapy</i> )
Child cognitive development: BSID – Mental Scales	No significant group differences (1 CCT, N=39) ( <i>mother-infant therapy; interpersonal psychotherapy</i> )

<sup>15</sup> green shading indicates results significantly in favour of the intervention

<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Level of behavioural management problems at end of treatment (4 months)	No effect for 3 interventions (1 RCT, N=193) ( <i>counselling; cognitive behavioural therapy; psychodynamic therapy</i> )
BSQ at 18 months follow up	Greater effects of active interventions vs. control (P=0.03); significant differences for all 3 interventions vs. control (1 RCT, N=193) ( <i>counselling; cognitive behavioural therapy; psychodynamic therapy</i> )
Child emotional and behavioural difficulties (maternal reports on Rutter A2 Parent Scale for Pre-school Children) at 5 year follow up	No group differences (P=0.07) (1 RCT, N=193) ( <i>counselling; cognitive behavioural therapy; psychodynamic therapy</i> )
Child emotional and behavioural difficulties (teacher reports on Pre-school Behaviour Checklist) at 5 year follow up	No group differences (P=0.99) (1 RCT, N=193) ( <i>counselling; cognitive behavioural therapy; psychodynamic therapy</i> )
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Quality of mother-infant relationship at end of treatment (4 months)	All 3 interventions significantly improved quality of relationship (1 RCT, N=193) ( <i>counselling; cognitive behavioural therapy; psychodynamic therapy</i> )
Infant attachment scores at 18 months follow up	No group differences (P=0.85) (1 RCT, N=193) ( <i>counselling; cognitive behavioural therapy; psychodynamic therapy</i> )
PCERA ratings (factor 1: maternal positive affective involvement and verbalisation; factor 2: maternal negative effects and behaviour)	Improvement for intervention groups (2) vs. control for factor 1; improvement for mother-infant therapy group vs. control for factor 2 (1 CCT, N=39) ( <i>mother-infant therapy; interpersonal psychotherapy</i> )
Quality of parent-child relationship: Social Adjustment Scale: sub-scale: 'relationship with older children more than 2 years'	Favoured intervention (P<0.05) (1 RCT, N=99) ( <i>interpersonal psychotherapy</i> )
Quality of parent-child relationship: PPAQ sub-scale: 'mother's relationship with children other than baby'	Favoured intervention (P=0.005) (1 RCT, N=99) ( <i>interpersonal psychotherapy</i> )
Quality of parent-child relationship: PPAQ sub-scale: 'relationship with the new baby'	No significant difference (P=0.13) (1 RCT, N=99) ( <i>interpersonal psychotherapy</i> )
Mother-infant responsiveness: Dyadic Mutuality Code post-intervention and over time (at least to 18 weeks)	Favours intervention (P=0.006; P=0.025) (1 RCT, N=117) ( <i>home visits and interaction coaching</i> )
Mother-infant interaction (video recording, and rated according to global rating for mother-infant interactions at 2 months)	Marked improvement; favours intervention P=0.0004 (1 RCT, N=22) ( <i>infant massage and support group</i> )
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
PSI: child domains ('child adaptability' and 'reinforces parent')	Improvement for active intervention groups (2) compared with control group (1 CCT, N=39) ( <i>mother-infant therapy; interpersonal psychotherapy</i> )
Parental adjustment to parenting: PSI	No significant difference (1 RCT, N=12) ( <i>postpartum support group</i> )
PSI: child domain subscale	Statistically marginal deterioration in control group (P=0.05) (not in intervention group) (1 RCT, N=12) ( <i>postpartum support group</i> )
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR



<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID: Bayley Scales of Infant Development; BSQ: Behavioural Screening Questionnaire; CCT: controlled clinical trial; MABI: Mother's Assessment of the Behaviour of her Infant; N: number; NBAS: Neonatal Behavioural Assessment Scale; NR: not reported; P: P value; PCERA: Parent-Child Early Relational Assessment; PPAQ: Post-partum Adjustment Questionnaire; PSI: Parenting Stress Index; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; UK: United Kingdom; USA: United States of America

## NBAS-based interventions

**Table 22: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review
		Das Eiden 1996
Study ID	Anderson 1983	✓ (RCT, N=20)
	Beal 1989	✓ (qRCT, N=44)
	Beeghly 1995	✓ (RCT, N=125)
	Belsky 1985	✓ (RCT, N=64)
	Britt 1994	✓ (RCT, N=54)
	Furr 1982	✓ (RCT, N=40)
	Liptak 1983	✓ (RCT, N=75)
	Myers 1982	✓ (RCT, N=42)
	Pannabecker 1982	✓ (RCT, N=48)
	Parker 1992	✓ (qRCT, N=48)
	Szajnberg 1987	✓ (RCT, N=20)
	Widmayer 1980, 1981	✓ (RCT, N=40)
	Worobey 1982	✓ (RCT, N=48)

**Abbreviations:** N: number; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial

**Table 23: Evidence table for Das Eiden 1996<sup>16</sup>**

<b>Review ID</b>	Das Eiden 1996
<b>Search date</b>	NR
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	13 studies (11 RCTs; 2 studies with 'alternate' assignment: qRCTs)
<b>No. participants in relevant studies</b>	668
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 3/11 ('low' quality)
<b>Quality of relevant studies</b>	Not assessed/reported
<b>Review objective</b>	To examine whether NBAS-based interventions (training parents to administer the NBAS or having them observe an examiner administer the NBAS) promotes better parenting in the future than control conditions (i.e. giving parents only a verbal report on the NBAS administration)
<b>Review eligibility criteria</b>	Published articles on NBAS-based interventions, with outcomes revolving around the theme of parenting quality (e.g. observations of parent-child interactions and self-report measures of parenting)
<b>Participant population</b>	Parents and their infants (predominately middle-class mothers and their healthy/term infants, though 3 studies included preterm/low birthweight infants; 2 studies specifically included fathers; 2 included mothers and fathers; 9 included mothers only)
<b>Intervention</b>	NBAS-based interventions (training parents to administer the NBAS or having them observe an examiner administer the NBAS); length of intervention not clearly stated (though only 4 studies used repeated intervention episodes); follow up ranged from 8-10 days to 9 months postpartum
<b>Comparator</b>	Giving parents a verbal report/explanation of NBAS administration only
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<sup>16</sup> green shading indicates results significantly in favour of the intervention

Development for the infant, as a child, and up to 18 years	
Outcome measure used in the review	Results reported in the review
NR	NR
Behaviour for the infant, as a child, and up to 18 years	
Outcome measure used in the review	Results reported in the review
NR	NR
Physical wellbeing and safety for the infant, as a child, and up to 18 years	
Outcome measure used in the review	Results reported in the review
NR	NR
Parent-infant relationship	
Outcome measure used in the review	Results reported in the review
<i>Pooled results</i>	
Parenting quality* (at 8-10 days post-intervention to 9 months postpartum)	Correlation coefficient (r): 0.203 (unit weighting); P=0.00001 (13 studies: 11 RCTs, 2 qRCTs, N=668) Correlation coefficient (r): 0.017 (weighted by sample); P=0.00005 (13 studies: 11 RCTs, 2 qRCTs, N=668) Cohen's d: 0.415 (unit weighting) Cohen's d: 0.324 (weighted by sample)
Parent/caregiver psychosocial wellbeing	
Outcome measure used in the review	Results reported in the review
NR	NR
Parent/caregiver knowledge, practices and behaviours	
Outcome measure used in the review	Results reported in the review
NR	NR
Parent/caregiver views of intervention	
Outcome measure used in the review	Results reported in the review
NR	NR
Family relationships	
Outcome measure used in the review	Results reported in the review
NR	NR
Systems outcomes	
Outcome measure used in the review	Results reported in the review
NR	NR
Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?	
Parenting quality* (at 8-10 days post-intervention to 9 months postpartum)	<p>“Thus, even though one could plausibly come up with variables that might moderate the effect of the intervention on parenting quality (e.g. length of follow-up, risk status of the sample, <b>parental involvement in the intervention</b>), the present results provide no statistical basis for pursuing moderator analyses”</p> <p>“A second potential moderating factor may be the form or intensity of the NBAS intervention. Several researchers have discussed the possibility that <b>parental administration of the NBAS</b> may be more effective than <b>passive observation and explanation</b>... However this is a difficult variable to test in meta-analysis because few studies have contrasted these two treatment conditions. In fact only one of the studies in the current meta-analysis contrasted each of these treatment conditions to a control group (Worobey &amp; Belsky, 1982).”</p> <p><b>Demonstration and explanation</b></p> <ul style="list-style-type: none"> <li>• Positive effect: Anderson 1983; Beal 1989; Beeghly 1995; Britt 1994b; Furr 1982; Parker 1992; Szajnberg 1987; Widmayer 1980, 1981</li> <li>• No effect: Liptak 1983</li> </ul> <p><b>Parental administration and explanation</b></p> <ul style="list-style-type: none"> <li>• Positive effect: parental administration: Belsky 1985; Myers 1982</li> <li>• No effect: parental administration: Pannabecker 1982</li> </ul> <p><b>Parental administration vs. demonstration</b></p> <ul style="list-style-type: none"> <li>• Positive effect: Worobey 1982</li> </ul>

<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Parenting quality* (at 8-10 days post-intervention to 9 months postpartum)	Outcome measurements in the home were mentioned in 4 studies (parental administration (Belsky 1985); demonstration by trained professionals (Britt 1994b; Parker 1992); and maternal administration compared with demonstration (Worobey 1982))
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Parenting quality* (at 8-10 days post-intervention to 9 months postpartum)	<p>“Thus, even though one could plausibly come up with variables that might moderate the effect of the intervention on parenting quality (e.g. length of follow-up, <b>risk status of the sample</b>, parental involvement in the intervention), the present results provide no statistical basis for pursuing moderator analyses”</p> <p><b>“both high-risk and low-risk groups have yielded a similar pattern of mixed results</b> with respect to the impact of NBAS-based interventions on parenting.”</p> <p>Positive effect:</p> <ul style="list-style-type: none"> <li>• Caucasian, middle-class mothers with full-term healthy female infants (Anderson 1983)</li> <li>• Mostly Caucasian working class, first time fathers and their infants (Beal 1989)</li> <li>• Heterogeneous sample of mothers and their full-term infants who were small for gestational age and a group of average for gestational age infants (Beeghly 1995)</li> <li>• Caucasian middle-class parents and their infants (Belsky 1985)</li> <li>• Mostly African American substance-using mothers from lower SES and their infants (Britt 1994b)</li> <li>• Middle-class, primiparous breastfeeding mothers between the ages of 18 to 30 years and their healthy full-term infants: (Furr 1982)</li> <li>• Mostly Caucasian, primiparous middle-class parents with full-term healthy infants (Myers 1982)</li> <li>• Mostly African American or Hispanic low SES mothers and their preterm infants admitted to the neonatal intensive care unit (Parker 1992)</li> <li>• Preterm (28-32 weeks gestation), low birthweight infants and their mothers (Szajnberg 1987)</li> <li>• Teenage, lower SES African American mothers and their preterm (&lt; 37 weeks gestation) infants: Widmayer (1980, 1981)</li> <li>• Caucasian middle-class mothers and their healthy, full-term infants: (Worobey 1982)</li> </ul> <p>No effect:</p> <ul style="list-style-type: none"> <li>• Caucasian, primiparous middle-class mothers with full-term healthy infants (Liptak 1983)</li> <li>• Middle-class first-time fathers and their healthy full-term infants (Pannabecker 1982)</li> </ul>
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
Parenting quality* (at 8-10 days post-intervention to 9 months postpartum)	<p>“some interventions have consisted of <b>repeated demonstrations</b> or parental involvement in the intervention at several points in time. Only four studies included in this meta-analysis used repeated intervention episodes with <b>variable results</b> (Beeghly et al., 1995; Britt &amp; Myers, 1994b; Parker, Zahr, Cole, &amp; Brecht, 2003; Widmayer &amp; Field, 1980, 1981).”</p> <p><b>Durations of observations at follow up</b></p> <p>Positive effect</p> <ul style="list-style-type: none"> <li>• 2-minute observations coded every 15 seconds and summed (Beal 1989)</li> <li>• 6 minutes (Beeghly 1995)</li> <li>• 45 minute observations coded every 15 seconds and summed (Belsky 1985)</li> <li>• 45 minute observations (Liptak 1983)</li> <li>• 2 minutes (Widmayer 1980, 1981)</li> <li>• 60 minutes of observations (Worobey 1982)</li> </ul>

	<p>“A review of the effect sizes of these studies indicate that in general, those with <b>shorter follow-up lengths had higher effect sizes</b>”</p> <p><b>Length of follow up</b></p> <p>Positive effect</p> <ul style="list-style-type: none"> <li>• 8-10 days post-intervention (Anderson 1983); ES: 0.26</li> <li>• 2 weeks post-intervention (Furr 1982); ES: 0.48</li> <li>• 29-30 days post-intervention follow up (Beal 1989); ES: 0.45</li> <li>• 4 weeks age of infants (Britt 1994b); ES: 0.19</li> <li>• 4 weeks post-intervention (Myers 1982); ES: 0.39</li> <li>• 4-6 weeks age of infants (Worobey 1982); ES: 0.13</li> <li>• 1 month and 4 months post-intervention (Widmayer 1980, 1981); ES: 0.14</li> <li>• 4 months of infant age (Beeghly 1995); ES: 0.04</li> <li>• 6 months corrected infant age (Szajnberg 1987 ); ES: 0.28</li> <li>• 4 months and 8 months age of infants (Parker 1992); ES: 0.03</li> <li>• 1, 3 and 9 months postpartum (Belsky 1995); ES: 0.17</li> </ul> <p>No effect</p> <ul style="list-style-type: none"> <li>• 1 month age of infants (Pannabaker 1982); ES: 0.00</li> <li>• 1 and 3 months postpartum (Liptak 1983); ES: 0.00</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	
See <b>‘who’</b> above.	
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be <b>framed</b> ?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

\*Individual effect sizes for studies combined in the meta-analysis are available in the manuscript; individual outcome measures included: maternal/parental responsiveness, father-infant reciprocity or mutuality, maternal sensitivity, ratings of mother-infant feeding interactions, father involvement with infant, maternal affective behaviour, etc.

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; N: number; NBAS: Neonatal Behavioural Assessment Scale; NR: not reported; P: P value; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

## Interventions for enhancing sensitivity and/or attachment security

**Table 24: Matrix indicating the studies that were included in the systematic reviews**

	Systematic review		
	Bakermans-Kranenburg 2003	Bakermans-Kranenburg 2005	Doughty 2007
Ammaniti 2006			✓ (RCT, N=91)
*Anisfeld 1990	✓ (RCT, N=NR)		
*Armstrong 2000	✓ (RCT, N=NR)		✓ (RCT, N=181)
*Bakermans-Kranenburg 1988 Study 1&2	✓ (RCT, N=NR)	✓ (RCT, N=15; N=15)	
*Barnard 1988	✓ (RCT, N=NR)		
*Barnett 1987 Study 1&2	✓ (RCT, N=NR)		
*Barrera 1986	✓ (RCT, N=NR)		
*Beckwith 1988	✓ (RCT, N=NR)		
Benoit 2001	✓ (non-randomised, N=NR)		
*Black 1997	✓ (RCT, N=NR)		
Brinker 1994	✓ (non-randomised, N=NR)		
*Brophy 1997	✓ (RCT, N=NR)		
Bustan 1984	✓ (non-randomised, N=NR)		
Caughy 2004			✓ (RCT, N=658)
*Cicchetti 1999	✓ (RCT, N=NR)		
Cohen 1999 Study 1&2	✓ (non-randomised, N=NR)	✓ (RCT, N=34; N=32)	
*Constantino 2001	✓ (RCT, N=NR)		✓ (RCT, N=95, N=63)
*Cooper 1997 Studies 1-3 (Murray 2003, Cooper 2003)	✓ (RCT, N=NR)	✓ (RCT, N=58; N=57; N=57)	✓ (RCT, N=193)
Dickie 1980	✓ (non-randomised, N=NR)		
*Egeland 1993 (2000)	✓ (RCT, N=NR)	✓ (RCT, N=135)	
Field 1998	✓ (non-randomised, N=NR)		
*Field 1980	✓ (RCT, N=NR)		
Fleming 1992	✓ (non-randomised, N=NR)		
Fraser 2000			✓ (RCT, N=181)
Gelfand 1996	✓ (non-randomised, N=NR)	✓ (design NR, N=61)	
Goodson 2000			✓ (RCT, N=2,799)
Gowen 1997	✓ (non-randomised, N=NR)		
Hamilton 1972	✓ (non-randomised, N=NR)		
*Heinicke 1999 (2000, 2001)	✓ (RCT, N=NR)	✓ (RCT, N=64)	✓ (RCT, N=64)
Huxley 1993	✓ (non-randomised, N=NR)		
*Jacobson 1991	✓ (RCT, N=NR)		
Juffer 1997 Study 1&2 (2005)	✓ (non-randomised, N=NR)	✓ (RCT, N=48; N=80)	
*Kang 1995 Studies 1-3	✓ (RCT, N=NR)		
*Kitzman 1997	✓ (RCT, N=NR)		
*Koniak-Griffin 1995	✓ (RCT, N=NR)		
Koniak-Griffin 2003			✓ (RCT, N=101)
Krupka 1995	✓ (non-randomised,		

	N=NR)		
*Lafreniere 1997	✓ (RCT, N=NR)		
Lambermon 1991 (1989) Study 1&2	✓ (non-randomised, N=NR)		
*Larson 1980 Study 1&2	✓ (RCT, N=NR)		
*Leitch 1999	✓ (RCT, N=NR)		
*Letourneau 2000 (2001)	✓ (RCT, N=NR)		✓ (RCT, N=31)
*Lieberman 1991	✓ (RCT, N=NR)		
*Luster 1996	✓ (RCT, N=NR)		
Lyons-Ruth 1990	✓ (non-randomised, N=NR)	✓ (design NR, N=38)	
*Madden 1984	✓ (RCT, N=NR)		
Mahoney 1988	✓ (non-randomised, N=NR)		
*Meij 1992 Study 1&2	✓ (RCT, N=NR)		
*Metzl 1980 Study 1 & 2	✓ (RCT, N=NR)		
*Meyer 1994	✓ (RCT, N=NR)		
Moran 2005			✓ (RCT, N=99)
*Olds 1986	✓ (RCT, N=NR)		
Olds 2002 (2004)			✓ (RCT, N=735)
*Onozawa 2001	✓ (RCT, N=NR)		
Palti 1984	✓ (non-randomised, N=NR)		
Parks 1983/1984	✓ (non-randomised, N=NR)		
*Riksen-Walraven 1978	✓ (RCT, N=NR)		
Riksen-Walraven 1996	✓ (non-randomised, N=NR)		
Robert-Tissot 1996 Study 1&2	✓ (non-randomised, N=NR)		
*Rosenboom 1994	✓ (RCT, N=NR)		
Ross 1984	✓ (non-randomised, N=NR)		
*Sajaniemi 2001	✓ (RCT, N=NR)	✓ (design NR, N=48)	
*Scholz 1992	✓ (RCT, N=NR)		
*Schuler 2000	✓ (RCT, N=NR)		
Seifer 1992	✓ (non-randomised, N=NR)		
*Spiker 1993	✓ (RCT, N=NR)		
*St. Pierre 1999	✓ (RCT, N=NR)		
*Tessier 1998	✓ (RCT, N=NR)		
*Van den Boom 1988 (1994)	✓ (RCT, N=NR)	✓ (RCT, N=100)	
Velderman 2006			✓ (RCT, N=81)
*Wagner 1999 Studies 1-4	✓ (RCT, N=NR)		
*Wasik 1990	✓ (RCT, N=NR)		
Weiner 1994	✓ (non-randomised, N=NR)		
*Whitt 1982	✓ (RCT, N=NR)		
Wijnroks 1994	✓ (non-randomised, N=NR)		
*Zahr 2000 Study 1&2	✓ (RCT, N=NR)		
*Zaslow 1998	✓ (RCT, N=NR)		
Ziegenhain 1999 Study 1&2	✓ (non-randomised, N=NR)		

\*Indicates study was in "core set of random studies" in Bakermans-Kranenburg 2003

**Abbreviations:** N: number; NR: not reported; RCT: randomised controlled trial

**Table 25: Evidence table for Bakermans-Kranenburg 2003<sup>17</sup>**

<b>Review ID</b>	Bakermans-Kranenburg 2003
<b>Search date</b>	NR
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	70 studies (45 indicated to be RCTs; 25 non-randomised studies) (with 88 interventions directed at sensitivity, attachment or both); a 'core set' of RCTs was established (which reported on 51 interventions directed at sensitivity, and 23 interventions directed at attachment)
<b>No. participants in relevant studies</b>	Data on 9,957 infants and parents were reported; in the core RCTs there were data on 6,282 mothers and their infants
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 4/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Not assessed/reported
<b>Review objective</b>	To assess whether early preventative intervention are effective in enhancing parental sensitivity and infant attachment security, and if so, what types of interventions are most successful
<b>Review eligibility criteria</b>	<u>Designs</u> : case series were excluded; <u>populations</u> : populations were not restricted (i.e. middle-class families with healthy infants, and clinical and at-risk population were included); <u>interventions</u> : interventions starting before children's mean age of 54 months were included, excluding brief postnatal interventions (such as with the Brazelton Neonatal Behavioural Assessment Scale); <u>outcomes</u> : studies using the Ainsworth sensitivity rating scales, the HOME scale, the NCATS, Erickson rating scales for sensitivity and supportiveness, or other observational measures of parental behaviour related to sensitivity were included; studies concentrating on child cognitive development only or using parent-reported evaluations/attitudes only were excluded; <u>other</u> : unpublished studies, or studies only reported at meetings/conferences were excluded
<b>Participant population</b>	Population was not restricted (i.e. studies were in low and middle/high SES population; in adolescent and adult parents; preterm and non-preterm born infants; 'multi' risk and non-multi risk populations; and clinically referred and non-clinically referred populations). Regarding age, from the 81 interventions reporting on maternal sensitivity, 10 started prenatally, 42 started < 6 months of age for the infant, 29 started > 6 months of age); no further detail provided
<b>Intervention</b>	Studies of preventative interventions, starting before child's mean age of 54 months, using the Ainsworth sensitivity rating scales, the HOME scale, the NCATS, Erickson rating scales for sensitivity and supportiveness, or other observational measures of parental behaviour related to sensitivity. Considering the randomised interventions (N=51): <u>focus</u> : sensitivity alone, N=20; other, N=31 (support; representation; sensitivity and support; sensitivity and representation; sensitivity, support and representation); <u>intervenor</u> : non-professional, N=5; professional, N=42; no intervenor, N=4; <u>at home delivery</u> : yes, N=40; no, N=11; <u>use of video</u> : yes, N=8; no, N=43; <u>sessions</u> : < 5, N=14; 5-16, N=18; > 16, N=19; <u>age at start</u> : prenatal, N=8; < 6 months, N=28; > 6 months, N=15
<b>Comparator</b>	NR
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<sup>17</sup> green shading indicates results significantly in favour of the intervention



<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Maternal sensitivity (measured using Ainsworth/Erickson rating scales, HOME inventory, NCATS, other observational tool) (time of outcome measures NR)	ES: 0.33 (90% CI 0.25, 0.41); Q: 127.82 (P<0.001); P<0.001 (51 interventions from core set of RCTs, N=6,282) ES: 0.44 (90% CI 0.35, 0.52) (81 interventions including non-random and random studies, N=7,636) <i>Random studies were shown to be less effective than other studies (P&lt;0.001)</i>
Attachment (measured using SSP or other observational tool) (time of outcome measures NR)	ES: 0.20 (90% CI 0.04, 0.35); Q: 55.21 (P<0.001); P<0.05 (23 interventions from core set of RCTs, N=1,255) ES: 0.19 (90% CI 0.05, 0.33) (29 interventions including non-random and random studies, N=1,503) <i>Random studies not less effective than other studies</i>
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Maternal sensitivity	<b>Intervenor, P=0.08</b> <ul style="list-style-type: none"> <li>Nonprofessional: ES: 0.33 (90% CI 0.08, 0.58) (5 interventions from RCTs, N=545)</li> <li>Professional: ES: 0.29 (90% CI 0.21, 0.36) (42 interventions from RCTs, N=5,041)</li> <li>No intervenor: ES: 0.62 (90% CI 0.08, 1.17) (4 interventions from RCTs, N=696)</li> </ul>
<b>Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Maternal sensitivity	<b>At home, P=0.12</b> <ul style="list-style-type: none"> <li>No: ES: 0.48 (90% CI 0.25, 0.70) (11 interventions from RCTs, N=1,298)</li> <li>Yes ES: 0.29 (90% CI 0.21, 0.37) (40 interventions from RCTs, N=4,984)</li> </ul>
<b>To whom could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Maternal sensitivity	<b>Sample SES, P=0.58</b> <ul style="list-style-type: none"> <li>Middle/high: ES: 0.25 (90% CI 0.14, 0.36) (16 interventions from RCTs, N=1,842)</li> <li>Low: ES: 0.35 (90% CI 0.25, 0.46) (35 interventions from RCTs, N=4,440)</li> </ul>
	<b>Adolescent motherhood, P=0.88</b> <ul style="list-style-type: none"> <li>Yes: ES: 0.30 (90% CI 0.15, 0.46) (12 interventions from RCTs, N=1,127)</li> <li>No: ES: 0.36 (90% CI 0.26, 0.45) (38 interventions from RCTs, N=4,335)</li> </ul>
	<b>Preterm, P=0.68</b> <ul style="list-style-type: none"> <li>Yes: ES: 0.35 (90% CI 0.21, 0.49) (9 interventions from RCTs,</li> </ul>

	<p>N=1,682)</p> <ul style="list-style-type: none"> <li>No: ES: 0.32 (90% CI 0.23, 0.42) (42 interventions from RCTs, N=4,600)</li> </ul>
	<p><b>Multiple risk factors, P=0.73</b></p> <ul style="list-style-type: none"> <li>Yes: ES: 0.31 (90% CI 0.21, 0.42) (24 interventions from RCTs, N=3,533)</li> <li>No: ES: 0.36 (90% CI 0.24, 0.48) (27 interventions from RCTs, N=2,749)</li> </ul>
	<p><b>Clinical risk (clinically referred), P=0.002</b></p> <ul style="list-style-type: none"> <li>Yes: ES: 0.46 (90% CI 0.23, 0.67) (8 interventions from RCTs, N=541)</li> <li>No: ES: 0.31 (90% CI 0.24, 0.48) (43 interventions from RCTs, N=5,741)</li> </ul>
	<p><b>Fathers included, P=0.003</b></p> <ul style="list-style-type: none"> <li>Yes: ES: 10.05 (90% CI 0.53, 1.58) (3 interventions from RCTs, N=81)</li> <li>No: ES: 0.42 (90% CI 0.33, 0.50) (78 interventions from RCTs, N=7,555)</li> </ul>
Attachment	<p><b>Sample SES, P=0.50</b></p> <ul style="list-style-type: none"> <li>Middle/high: ES: 0.11 (90% CI -0.12, 0.33) (10 interventions from RCTs, N=492)</li> <li>Low: ES: 0.27 (90% CI 0.04, 0.49) (13 interventions from RCTs, N=763)</li> </ul>
	<p><b>Multiple risk factors, P=0.83</b></p> <ul style="list-style-type: none"> <li>Yes: ES: 0.22 (90% CI -0.04, 0.47) (11 interventions from RCTs, N=736)</li> <li>No: ES: 0.19 (90% CI 0.02, 0.36) (12 interventions from RCTs, N=519)</li> </ul>
	<p><b>Clinical risk (clinically referred), P=0.82</b></p> <ul style="list-style-type: none"> <li>Yes: ES: 0.15 (90% CI -0.04, 0.34) (6 interventions from RCTs, N=369)</li> <li>No: ES: 0.22 (90% CI 0.01, 0.43) (17 interventions from RCTs, N=886)</li> </ul>
	<p><b>Insecure, P&lt;0.001</b></p> <ul style="list-style-type: none"> <li>≤ 33%: ES: -0.09 (90% CI -0.26, 0.07) (11 interventions from RCTs, N=593)</li> <li>34-50%: ES: 0.28 (90% CI 0.06, 0.50) (5 interventions from RCTs, N=227)</li> <li>≥ 51%: ES: 0.45 (90% CI 0.17, 0.74) (6 interventions from RCTs, N=389)</li> </ul>
<b>When could be the best time for the intervention, program, or message delivery to occur?</b>	
Maternal sensitivity	<p><b>Number of sessions, P&lt;0.001</b></p> <ul style="list-style-type: none"> <li>&lt; 5 sessions: ES: 0.42 (90% CI 0.21, 0.63) (14 interventions from RCTs, N=1,146)</li> <li>5-16 sessions: ES: 0.38 (90% CI 0.22, 0.53) (18 interventions from RCTs, N=1,274)</li> <li>&gt; 16 sessions: ES: 0.21 (90% CI 0.13, 0.29) (19 interventions from RCTs, N=3,862)</li> </ul>
	<p><b>Age at start, P=0.04</b></p> <ul style="list-style-type: none"> <li>Prenatal: ES: 0.32 (90% CI 0.17, 0.48) (8 interventions from RCTs, N=1,224)</li> <li>&lt; 6 months: ES: 0.28 (90% CI 0.18, 0.38) (28 interventions from RCTs, N=4,077)</li> <li>&gt; 6 month: ES: 0.44 (90% CI 0.23, 0.64) (15 interventions from RCTs, N=981)</li> </ul> <p>Multiple regression selected 2 significant predictors: focus of the intervention (b=0.26, P=0.03) and <b>child's age at start of the intervention</b> (b=0.23, P=0.04). Sensitivity-focused interventions and a <b>later start of the intervention</b> predicted higher effect sizes.</p>
Attachment	<p><b>Number of sessions, P=0.22</b></p> <ul style="list-style-type: none"> <li>&lt; 5 sessions: ES: 0.27 (90% CI 0.01, 0.52) (9 interventions from RCTs, N=385)</li> <li>5-16 sessions: ES: 0.13 (90% CI -0.19, 0.45) (4 interventions from</li> </ul>

	<p>RCTs, N=217)</p> <ul style="list-style-type: none"> <li>&gt; 16 sessions: ES: 0.18 (90% CI -0.07, 0.43) (10 interventions from RCTs, N=653)</li> </ul>
	<p><b>Age at start, P=0.04</b></p> <ul style="list-style-type: none"> <li>Prenatal: ES: 0.23 (90% CI -0.26, 0.72) (4 interventions from RCTs, N=340)</li> <li>&lt; 6 months: ES: -0.03 (90% CI -0.15, 0.22) (7 interventions from RCTs, N=371)</li> <li>&gt; 6 month: ES: 0.31 (90% CI 0.09, 0.52) (12 interventions from RCTs, N=544)</li> </ul>
<p><b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b></p>	
Maternal sensitivity	<p><b>Focus of the intervention, P=0.03</b></p> <ul style="list-style-type: none"> <li>Sensitivity only: ES: 0.45 (90% CI 0.28, 0.63) (20 interventions from RCTs, N=1,456)</li> <li>Other focuses (including support only; representation only; and combinations of sensitivity, support and representation): ES: 0.27 (90% CI 0.18, 0.35) (31 interventions from RCTs, N=4,826)</li> </ul> <p>Multiple regression selected 2 significant predictors: <b>focus of the intervention</b> (b=0.26, P=0.03) and <b>child's age at start of the intervention</b> (b=0.23, P=0.04). <b>Sensitivity-focused interventions</b> and a later start of the intervention predicted higher effect sizes.</p> <p><b>Interventions with video feedback, P=0.04</b></p> <ul style="list-style-type: none"> <li>No: ES: 0.31 (90% CI 0.23, 0.40) (43 interventions from RCTs, N=5,907)</li> <li>Yes: ES: 0.44 (90% CI 0.27, 0.62) (8 interventions from RCTs, N=375)</li> </ul> <p><b>Focus x sessions, P&lt;0.001</b></p> <ul style="list-style-type: none"> <li>Sensitivity x &lt; 16 sessions: ES: 0.47 (90% CI 0.29, 0.66) (18 interventions from RCTs, N=1,327)</li> <li>Other x &lt; 16 sessions: ES: 0.31 (90% CI 0.14, 0.47) (14 interventions from RCTs, N=1,093)</li> <li>Sensitivity x &gt; 16 sessions: ES: 0.30 (90% CI -0.35, 0.96) (2 interventions from RCTs, N=129)</li> <li>Other x &gt; 16 sessions: ES: 0.21 (90% CI 0.13, 0.30) (17 interventions from RCTs, N=3,733)</li> </ul>
Attachment	<p><b>Focus of the intervention, P&lt;0.001</b></p> <ul style="list-style-type: none"> <li>Sensitivity only: ES: 0.39 (90% 0.16, 0.62) (10 interventions from RCTs. N=463)</li> <li>Other focuses (including support only; representation only; and combinations of sensitivity, support and representation): ES: 0.06 (90% CI -0.12, 0.24) (13 interventions from RCTs, N=792)</li> </ul> <p><b>Interventions with video feedback, P=0.02</b></p> <ul style="list-style-type: none"> <li>No: ES: 0.25 (90% CI 0.09, 0.41) (16 interventions from RCTs, N=923)</li> <li>Yes: ES: 0.07 (90% CI -0.29, 0.43) (7 interventions from RCTs, N=332)</li> </ul> <p><b>Focus x sessions, P=0.01</b></p> <ul style="list-style-type: none"> <li>Sensitivity x &lt; 16 sessions: ES: 0.33 (90% CI 0.09, 0.58) (9 interventions from RCTs, N=415)</li> <li>Other x &lt; 16 sessions: ES: -0.06 (90% CI -0.33, 0.21) (4 interventions from RCTs, N=187)</li> <li>Sensitivity X &gt; 16 sessions: ES: 0.86 (90% CI 0.37, 1.34) (1 intervention from RCT, N=48)</li> <li>Other x &gt; 16 sessions: ES: 0.11 (90% -0.14, 0.35) (9 interventions from RCTs, N=605)</li> </ul> <p><b>Sensitivity effect size, P=0.001</b></p> <ul style="list-style-type: none"> <li>≤ 0.15: ES: 0.17 (90% CI -0.11, 0.45) (6 interventions from RCTs, N=302)</li> <li>0.16-0.40: ES: -0.12 (90% CI -0.40, 0.16) (5 interventions from RCTs, N=384)</li> <li>≥ 0.41: ES: 0.45 (90% CI 0.26, 0.65) (8 interventions from RCTs, N=378)</li> </ul>

How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?
NR
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?
NR
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?
NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; ES: effect size; HOME: Home Observation for Measurement of the Environment scale; N: number; NCATS: Nursing Child Assessment Teaching Scale; NR: not reported; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SES: socio-economic status; SSP: Strange Situation Procedure

**Table 26: Evidence table for Bakermans-Kranenburg 2005**

<b>Review ID</b>	Bakermans-Kranenburg 2005
<b>Search date</b>	NR
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	10 studies (15 interventions) included; >7 studies described in narrative text as having "random" assignment (the authors indicate that 11 of the 15 interventions had random assignment)
<b>No. participants in relevant studies</b>	842
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 2/11 ('low' quality)
<b>Quality of relevant studies</b>	Not assessed/reported
<b>Review objective</b>	To assess whether interventions are able to prevent infant attachment disorganisation, and whether the effectiveness of interventions is associated with intervention features or design and sample characteristics
<b>Review eligibility criteria</b>	<u>Design</u> : intervention studies were included, excluding case studies; <u>populations</u> : studies in middle-class families with healthy infants as well as clinical and at-risk populations were included; <u>interventions</u> : interventions starting before children's mean age of 54 months were included; <u>outcomes</u> : studies had to assess disorganised attachment with the Main and Solomon coding system, or atypical attachment with Crittenden's Preschool Assessment of Attachment system; <u>other</u> : unpublished studies or those reported at meetings or conferences only were excluded
<b>Participant population</b>	The interventions were implemented in a range of samples: clinically depressed mothers (2 studies); families with infants at risk due to international adoption (1 study); irritable infants (1 study); extremely low birthweight infants (1 study); clinically referred infants (1 study); low SES mothers with multiple problems (3 studies); insecure mothers (1 study). Characteristics of the 15 interventions: <u>age at start of intervention</u> : < 6 months, N=6; > 6 months, N=9; <u>sample SES</u> : middle/high, N=9; low, N=6; <u>multi-risk</u> : yes, N=6; no, N=9; <u>clinical risk</u> : yes, N=6; no, N=9
<b>Intervention</b>	Characteristics of the 15 interventions: <u>intervenor</u> : not in person, N=1; lay person, N=2; professional, N=12; <u>focus</u> : sensitivity, N=5; other, N=10 (including: support; representation; sensitivity and support; sensitivity and representation; sensitivity, support and representation); <u>involved video</u> : no, N=12; yes, N=3; <u>number of sessions</u> : < 5, N=5; 5-16, N=5; > 16, N=5; <u>home based</u> : yes, N=13; no, N=2
<b>Comparator</b>	Not clearly reported for all studies
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Disorganised infant attachment (Main and Solomon coding system; Crittenden's Preschool Assessment of Attachment system) (time of outcome measures NR)	ES: 0.05 (90% CI -0.07; 0.17); Q: 21.41 (P=NS); P=NS (10 studies, 15 comparisons (11/15 interventions from RCTs), N=842) <i>*Note: this included 1 study in infants &gt; 1 year</i>
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Disorganised infant attachment	<b>Intervenor, P=NR</b> <ul style="list-style-type: none"> <li>• Not in person: ES: 0.05 (90% CI -0.45, 0.55) (1 intervention, N=48)</li> <li>• Lay person: ES: -0.35 (90% CI -0.61, 0.09) (2 interventions, N=173)</li> <li>• Professional: ES:0.17 (90% CI 0.03, 0.37) (12 interventions, N=671)</li> </ul>
<b>Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Disorganised infant attachment	<b>Home-based, P=NR</b> <ul style="list-style-type: none"> <li>• Yes: ES: 0.07 (90% CI -0.10, 0.24) (13 interventions, N=776)</li> <li>• No: ES: 0.19 (90% CI -0.16, 1.05) (2 interventions, N=66)</li> </ul>
<b>To whom could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Disorganised infant attachment	<b>SES, P=0.08</b> <ul style="list-style-type: none"> <li>• Middle/high: ES: 0.17 (90% CI 0.00, 0.34) (9 interventions, N=475)</li> <li>• Low: ES: -0.03 (90% CI -0.33, 0.27) (6 interventions, N=367)</li> </ul>
	<b>Multi-risk, P=0.91</b> <ul style="list-style-type: none"> <li>• Yes: ES: 0.12 (90% CI -0.17, 0.41) (6 interventions, N=465)</li> <li>• No: ES: 0.06 (90% CI -0.13, 0.25) (9 interventions, N=377)</li> </ul>
	<b>Clinical, P=0.67</b> <ul style="list-style-type: none"> <li>• Yes: ES: 0.00 (90% CI -0.22, 0.23) (6 interventions, N=299)</li> <li>• No: ES: 0.12 (90% CI -0.13, 0.36) (9 interventions, N=543)</li> </ul>
	<b>Risk, P=0.01</b> <ul style="list-style-type: none"> <li>• Parent: ES: -0.10 (90% CI -0.25, 0.06) (9 interventions, N=500)</li> <li>• Child: ES: 0.29 (90% CI 0.09, 0.50) (4 interventions, N=276)</li> </ul>
	<b>Percentage of disorganisation in control group, P&lt;0.001</b> <ul style="list-style-type: none"> <li>• &lt; 21%: ES: -0.18 (90% CI -0.35, -0.02) (6 interventions, N=422)</li> <li>• ≥ 21%: ES: 0.31 (90% CI 0.13, 0.49) (7 interventions, N=354)</li> </ul>
<b>When could be the best time for the intervention, program, or message delivery to occur?</b>	
Disorganised infant attachment	<b>Age start, P=0.02</b> <ul style="list-style-type: none"> <li>• &lt; 6 months: -0.13 ES: (90% CI -0.30, 0.05) (6 interventions, N=409)</li> </ul>

	<ul style="list-style-type: none"> <li>&gt; 6 months: ES: 0.23 (90% CI 0.05, 0.40) (9 interventions, N=433)</li> </ul>
	<b>Sessions, P=0.41</b> <ul style="list-style-type: none"> <li>&lt; 5: ES: 0.18 (90% CI -0.03, 0.39) (5 interventions, N=258)</li> <li>5-16: ES: -0.06 (90% CI -0.33, 0.20) (5 interventions, N=238)</li> <li>&gt; 16: ES: 0.14 (90% CI -0.22, 0.50) (5 interventions, N=346)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b>	
Disorganised infant attachment	<b>Focus, P=0.03</b> <ul style="list-style-type: none"> <li>Sensitivity: ES: 0.26 (90% CI 0.07, 0.46) (5 interventions, N=291)</li> <li>Other: ES: -0.08 (90% CI -0.24, 0.07) (10 interventions, N=551)</li> </ul> <b>Video, P=NR</b> <ul style="list-style-type: none"> <li>No: ES: 0.13 (90% CI 0.01, 0.28) (12 interventions, N=612)</li> <li>Yes: ES: -0.06 (90% CI -0.69, 0.58) (3 interventions, N=230)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?</b>	
NR	
<b>What could impede or interfere with engagement with interventions or programs or caregivers enacting upon messages?</b>	
NR	
<b>What could facilitate or drive with engagement with interventions or programs or caregivers enacting upon messages?</b>	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; ES: effect size; N: number; NR: not reported; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SES: socio-economic status

**Table 27: Evidence table for Doughty 2007<sup>18</sup>**

<b>Review ID</b>	Doughty 2007
<b>Search date</b>	January 1999 to February 2007
<b>Review method</b>	Narrative synthesis
<b>No. studies of relevance to this Overview and their design(s)</b>	2 systematic reviews (Bakermans-Kranenburg 2003, 2005) and 18 RCTs were included; 13 relevant RCTs
<b>No. participants in relevant studies</b>	5,372
<b>Location/setting</b>	Australia: 2 RCTs; Canada: 1 RCT; Italy: 1 RCT; Netherlands: 1 RCT; UK: 1 RCT; USA: 7 RCTs
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 5/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Quality not formally assessed using specific instrument; some 'limitations' presented by individual study
<b>Review objective</b>	To systematically identify and appraise international evidence on the effectiveness of specific interventions for promoting attachment between young children and their parents
<b>Review eligibility criteria</b>	<u>Designs</u> : systematic reviews and RCTs were included; <u>participants</u> : infants and young children aged 0 to 4 years, and parents or primary caregivers of sample children were included; <u>interventions</u> : studies investigating the effectiveness of an early intervention or strategy aiming to promote the development of positive, trusting parent-child relationships were included; only community (clinical or home based) interventions were included, which could be universal or selective, and include: group-based parent training or educations programs, home visiting programs with a clear parent training component, and relationship-based interventions; <u>outcomes</u> : studies reporting on effective strategies for promoting attachment between young children and their parents, reporting on key socio-emotional outcomes in any of the following categories: parental sensitivity or responsiveness to infant needs; infant-parent attachment security (e.g. Ainsworth sensitivity rating scales, HOME, Erickson rating scales for sensitivity and supportiveness, NCAFS and NCATS scales) were included; <u>other</u> : studies had to be published between January 1999 and December 2006 in English, and have a samples of at least 10 participants

<sup>18</sup> green shading indicates results significantly in favour of the intervention

<b>Participant population</b>	Mothers with or at risk for depression: 2 RCTs; adolescent mothers: 3 RCTs; mixed/multi-risk populations: 6 RCTs; low risk population: 1 RCT; 'other' (mothers with insecure attachment ): 1 RCT
<b>Intervention</b>	All studies had a focus on promoting attachment, sensitivity or responsiveness as a primary/secondary outcome. All used home visiting as the/a mode of delivery (intervention itself or as vehicle for delivery another specific psychosocial intervention); durations/intensities of interventions NR
<b>Comparator</b>	Majority usual care/no intervention
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Sensitivity and attachment	See above: this review summarises findings from Bakermans-Kranenburg 2003 and 2005
<b>Single study results</b>	
<i>Mothers with or at risk for depression</i>	
Maternal sensitivity, cooperation, interference, affective state of mother, self-regulation at 6 and 12 months	Significant at 6 months in favour of intervention for all outcomes except self-regulation (P=0.002; 0.04; 0.03; 0.0003; NS) (1 RCT, N=91 in trial; N=69 for outcomes); significant at 12 months for sensitivity only (P=0.03) (1 RCT, N=91 in trial; N=82)
Infant-mother attachment security at 2 and 4.5 months; maternal sensitivity at 18 months; infant attachment (secure and insecure)	Infant-mother attachment: no significant impact at 2 and 4.5 months; no effect for infant attachment (1 RCT, N=193) Maternal sensitivity: favoured non-directive counselling at 18 months (P=0.001) (1 RCT, N=193)
<i>Adolescent mothers</i>	
NCAFS, NCATS total score, NCATS parent subscale at follow up (maternal responsiveness) (11-13 weeks)	In favour of intervention (P=0.028; P=0.027; P=0.036) (1 RCT, N=31)
NCATS mother, child or total scores (6 weeks to 24 months); HOME scores (6 weeks to 24 months)	No group differences (no effect reported) (1 RCT, N=101)
Secure attachment at 24 months; maternal-infant interaction at 24 months	In favour of intervention (P<0.05; P<0.05) (1 RCT, N=99)
<i>Mixed or multi-risk populations</i>	
Emotional/verbal responsibility at 4 month follow up (HOME environment quality)	In favour of the intervention (P<0.05) (1 RCT, N=181 in trial; N=160 for outcome) (significant difference shown between group on all subscales as well as the total HOME score)
Parent's ability to interpret infant's emotional cues	Trend in favour of intervention (P=0.08) (1 RCT, N=95)
Maternal-infant attachment at 12 and 18 month follow up	(Short-term improvement; no effect reported); no intervention effect at 12/18 months (N=181)
Parent-child interaction: parent behaviour total score (maternal behaviour: sensitivity to cues, response to distress, fostering of cognitive growth, total score) and child behaviour total score (NCATS) at 3 years	NS difference between groups (1 RCT, N=2,779)
Secure attachment; responsivity to need; affectionate response to reunion; mother positive affect at 24 months	In favour of intervention (P<0.0001; P<0.0001; P<0.0003; P=0.02) (1 RCT, N=64)
Responsive interaction at 24 months	In favour of intervention (P<0.05) (1 RCT, N=735)
<i>Low-risk populations</i>	
Secure attachment at 34-37 months; maternal sensitive interaction (NCATS total score) at 34-37 months	In favour of intervention (P<0.01; P<0.05) (1 RCT, N=658)

<i>'Other' (mothers with insecure attachment)</i>	
Sensitivity at 6 months	In favour of interventions (P<0.05) (1 RCT, N=81)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; HOME: Home Observation for Measurement of the Environment scale; N: number; NCAFS: Nursing Child Assessment Feeding Scale; NCATS: Nursing Child Assessment Teaching Scale; NR: not reported; NS: non-significant; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; UK: United Kingdom; USA: United States of America



## Interventions for preventing later antisocial behaviour and delinquency

**Table 28: Matrix indicating the studies that were included in the systematic reviews**

	Systematic reviews			
	Bernazzani 2001	Piquero 2008	Yoshikawa 1995	
Study ID	Achenbach 1990		✓ (design and N=NR)	
	Andrews 1983a		✓ (design and N=NR)	
	Andrews 1983b		✓ (design and N=NR)	
	Badger 1981		✓ (design and N=NR)	
	Barrera 1986		✓ (design and N=NR)	
	Barth 1988		✓ (design and N=NR)	
	Butz 2001		✓ (RCT) (N=117)	
	Campbell 1994		✓ (design and N=NR)	
	Cullen 1979, 1996	✓ (RCT, N=246)	✓ (RCT) (N=246)	
	Fergusson 2005		✓ (RCT) (N=443)	
	Field 1982			✓ (design and N=NR)
	Hardy 1989			✓ (design and N=NR)
	Garber 1988			✓ (design and N=NR)
	Gray 1979			✓ (design and N=NR)
	Gutelius 1977			✓ (design and N=NR)
	Heinicke 2001		✓ (RCT, N=64)	
	Hiscock 2008		✓ (RCT, N=733)	
	Jacobson 1990			✓ (design and N=NR)
	Jester 1983			✓ (design and N=NR)
	Johnson 1982, 1987, 2006	✓ (RCT, N=139)	✓ (RCT, N=458)	✓ (design and N=NR)
	Kitzman 1997 (Olds 2004, 2007)	✓ (RCT, N=743)	✓ (RCT, N=1,139)	
	Lally 1988			✓ (design and N=NR)
	Lamble 1973			✓ (design and N=NR)
	Larson 1980			✓ (design and N=NR)
	Lieberman 1991			✓ (design and N=NR)
	Lyons-Ruth 1990			✓ (design and N=NR)
	McCarton 1997 (Brooks-Gunn 1994, McCormick 2006)	✓ (RCT, N=874)	✓ (RCT, N=985)	✓ (design and N=NR)
	Olds 1986, 1988, 1998	✓ (RCT, N=323)		✓ (design and N=NR)
	Olds 2002, 2004		✓ (RCT, N=735)	
	Osofsky 1988			✓ (design and N=NR)
	Ross 1984			✓ (design and N=NR)
	Seitz 1991			✓ (design and N=NR)
Seitz 1994			✓ (design and N=NR)	
Siegel 1980			✓ (design and N=NR))	
Stone 1988		✓ (RCT, N=150)		
St-Pierre 1999	✓ (RCT, N=>2,000)			
Wasik 1990			✓ (design and N=NR)	

**Abbreviations:** N: number; NR: not reported; RCT: randomised controlled trial

**Table 29: Evidence table for Bernazzani 2001<sup>19</sup>**

<b>Review ID</b>	Bernazzani 2001
<b>Search date</b>	1967 to 2001
<b>Review method</b>	Narrative synthesis using ES (meta-analysis was not performed “due to the small number of studies and the presence of substantial heterogeneity”)
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	6 studies (RCTs)
<b>No. participants in relevant studies</b>	7,917 families were randomised to 7 included RCTs; ‘final N’ reported for 6 relevant RCTs (which had attrition rates from 20-67%) was > 4,325 (for 1 trial, final N was reported as “more than 2000”)
<b>Location/setting</b>	Australia: 1 RCT; USA: 5 RCTs
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 4/11 (‘moderate’ quality)
<b>Quality of relevant studies</b>	NR; the authors used the ‘Threats to Trial Integrity Score’ to determine which studies to include (only included studies rated 4-star and 5-star: the highest scoring trials and those among the top quarter)
<b>Review objective</b>	To assess the impact of early parenting and home visitation programs on preventing behaviour problems and delinquency in children
<b>Review eligibility criteria</b>	<u>Designs</u> : studies employing random assignment or quasi-experimental designs (pre-intervention and post-intervention assessments and adequate control group) were included; <u>participants</u> : families with a child under age 3 at the start of the intervention (selected interventions could target the general population or a high-risk group); <u>interventions</u> : parent training or support had to be a major component of the intervention (though not necessarily the only 1); <u>outcomes</u> : original aim was to assess impact on children’s delinquent behaviour, however a broader scope was used to include studies with outcome measures of disruptive behaviour; <u>other</u> : only trials rated as having 5-star or 4-star designs according to the ‘Treats to Trial Integrity Score’ were included
<b>Participant population</b>	1 RCT targeted the general population (universal prevention); 4 RCTs targeted socially disadvantaged families (2 RCTs targeted minority groups: African-Americans and Mexican Americans); 1 RCT targeted families with premature babies (selective prevention); most studies intervened mainly with mothers
<b>Intervention</b>	2 RCTs commenced in prenatal period (and continued to 2 years); 4 RCTs began when the child was 12 months or younger (all continued beyond age 2, up to 3-6 years); 5 RCTs involved home visiting, most had additional intervention components (parent groups/child development centre); 1 RCT involved a clinic-based intervention with mothers by GP
<b>Comparator</b>	In all but 1 RCT, control groups were offered non-intensive follow up
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to one year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<b>Disruptive behaviour: mother’s reports at 6 years</b>	(1 RCT, N=246)
Talked loudly (total sample)	ES<-0.25, P<0.05 (favoured intervention)
Hit or struck others (total sample; girls)	ES<-0.25, P<0.05, ES<-0.35, P<0.05 (favoured intervention)
Exaggerated/told lies (girls)	ES<-0.35, P<0.05 (favoured intervention)
Late for school (total sample, boys)	ES>0.42, P<0.001, ES>0.48, P<0.01 (favoured control)
<b>Disruptive behaviour: mother’s report at age 5.3 years</b>	(1 RCT, N=139)
Behavioural assessment: destructive (boys)	ES: -1.05, P<0.01 (favoured intervention)
Behavioural assessment: high activity (boys)	ES: -0.55, P<0.05 (favoured intervention)
<b>Disruptive behaviour: teacher’s report at age 5.5 years</b>	

<sup>19</sup> green shading indicates results significantly in favour of the intervention

Classroom behaviour: hostility scale (total sample, boys)	ES: -0.46, P=0.01, ES: -0.66, P=0.01 (favoured intervention)
Behaviour problems: disrupts (total sample, boys)	ES: -0.42, P=0.019, ES: -0.53, P=0.038 (favoured intervention)
Behaviour problems: obstinate (total sample, boys)	ES: -0.48, P=0.007, ES: -0.61, P=0.018 (favoured intervention)
Behaviour problems: restless (total sample, boys)	ES: -0.47, P=0.008, ES: -0.70, P=0.007 (favoured intervention)
Behaviour problems: fights (total sample, boys)	ES: -0.46, P=0.01, ES: -0.68, P=0.008 (favoured intervention)
Behaviour problems: impulsive (boys, girls)	ES: -0.58, P=0.025, ES: -0.54, P=0.03 (favoured intervention)
<b>Disruptive behaviour: mother's report at age 2 years</b> CBCL	(1 RCT, N=743) NS
<b>Disruptive behaviour: mother's report at age 8 years</b> CBCL Behaviour profile	(1 RCT, N=874) NS NS
<b>Disruptive behaviour: mother's report at age 3, 4, 5 years</b> CBCL Total score Externalising score Internalising score	(1 RCT, N=>2,000) NS NS NS NS
<b>Delinquent behaviour: child's report at age 15 years</b> Running away Arrests Conviction, probation violations Number of sex partners Days having consumed alcohol	(1 RCT, N=323) P=0.003 P=0.03 P<0.001 P=0.003 P=0.03
<b>Delinquent behaviour: child's report at age 15 years</b> Minor social acts Major delinquent acts Externalising problems Acting out problems Incidence of times stopped by police Alcohol impairment Days using drugs <b>Delinquent behaviour: parent's report</b> "Similar scales" <b>Delinquent behaviour: school's report</b> Incidence of short or long-term suspensions	(1 RCT, N=323) NS NS NS NS NS NS NS NS NS NS
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CBCL: Child Behaviour Checklist; ES: effect size; GP: General Practitioner; N: number; NR: not reported; NS: no significant difference; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; USA: United States of America

**Table 30: Evidence table for Piquero 2008<sup>20</sup>**

<b>Review ID</b>	Piquero 2008	
<b>Search date</b>	Searches were conducted December 2007 to February 2008 (assumed databases searched from inception)	
<b>Review method</b>	Meta-analysis	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	55 included studies; 10 relevant studies (RCTs)	
<b>No. participants in relevant studies</b>	5,070	
<b>Location/setting</b>	Australia: 2 RCTs; New Zealand: 1 RCT; USA: 7 RCTs	
<b>Quality of review</b>	ROBIS: unclear risk of bias AMSTAR: 7/11 ('moderate' quality)	
<b>Quality of relevant studies</b>	Not formally assessed; authors state that all of the studies can be considered high quality "insofar as they all used a randomized controlled experiment"; however noted possible limitations relating to randomisation procedures, attrition, and comparability of how groups were treated throughout the intervention	
<b>Review objective</b>	To synthesise the empirical evidence (published and unpublished) on the effects of early family/parent training programs implemented in early childhood in preventing child behaviour problems including antisocial behaviour and delinquency	
<b>Review eligibility criteria</b>	Designs: RCTs; participants: families with a child under 5 years, either in the general or high-risk population; interventions: parent training or support as a major component of the intervention; excluding studies comparing 2 versions of parent training programs; outcomes: originally aimed to assess delinquency, however expanded scope to include studies with outcome measures of childhood behaviour problems; other: studies had to provide adequate data for calculating an ES (if not provided); no geographical restrictions, though had to be published in English	
<b>Participant population</b>	Parents of infants ≤ 1 year of age at commencement of intervention (7 RCTs targeted infants from birth; 1 RCT targeted 6 to 7 month olds; 2 RCTs targeted infants 1 year old)	
<b>Intervention</b>	Home visiting programs: 8 RCTs; parent training: 2 RCTs (however 1 RCT also had home visiting component); program durations/intensities NR	
<b>Comparator</b>	NR (but studies comparing 2 versions of parent training programs were excluded)	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to one year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Pooled results</b>		
Child disruptive behaviour outcomes (e.g. CBCL, hitting others, ECBI) (time of outcome measure not reported)	ES (weighted): 0.30 (95% CI 0.04, 0.56); Q: 11.73, P=NS; P<0.05 (8 home visiting RCTs, N=NR)	
<b>Single study results (home visiting)</b>		
CBCL	ES: 0.30 (95% CI -0.29, 0.69) (1 RCT, N=117)	
Hitting others	ES: 0.35 (95% CI 0.00, 0.70) (1 RCT, N=246)	
CBCL	ES: 0.23 (95% CI 0.03, 0.43) (1 RCT, N=443)	
CBCL	ES: 0.91 (95% CI 0.40, 1.42) (1 RCT, N=64)	
CBCL	ES: 0.14 (95% CI -0.02, 0.30) (1 RCT, N=1,139)	
CBCL	ES: 0.18 (95% CI 0.04, 0.32) (1 RCT, N=985)	
CBCL	ES: 0.04 (95% CI -0.12, 0.20) (1 RCT, N=735)	
ECBI	ES: -0.12 (95% CI -0.63, 0.39) (1 RCT, N=150)	
Smoking at 25-27 years	Intervention children were less likely to be smokers at age 25-27 (1 RCT, N=246)	

<sup>20</sup> green shading indicates results significantly in favour of the intervention

Mother-reported behaviour problems at 3 years	Intervention children had fewer behaviour problems (1 RCT, N=443)
Mother-reported problems in children (in borderline/clinical range) at 6 years	Fewer in intervention group (1 RCT, N=1,139)
Conduct problems in grades 1-3	Lower incidence for intervention children (1 RCT, N=1,139)
Parent and teacher reported antisocial behaviour at 9 years	Lower incidence for intervention children (1 RCT, N=1,139)
Mother-reported behavioural problems at 3 years	Fewer in intervention group (1 RCT, N=985)
Self-reported scores on general and risky behaviour problems at 18 years	Lower scores for intervention children (> 2,000 g at birth) (1 RCT, N=985)
Parent reports of behaviour problem scores at 2 years	Lower in intervention group (1 RCT, N=735)
<b>Single study results (parent training)</b>	
CBCL	ES: -0.05 (95% CI -0.19, 0.09) (1 RCT, N=733)
BAI	ES: 0.56 (95% CI 0.20, 0.91) (1 RCT, N=458)
Teachers reports of behaviour problems at 8-11 years	Reduction for intervention group (1 RCT, N=458)
Parent and teacher reports of behaviour problems and trouble with the law in late childhood/early adolescence: 9-16 years	Few significant differences (1 RCT, N=458)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who</b> could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?	
Child disruptive behaviour outcomes	<p>“Comparatively, the home visitation studies (as described previously) <b>typically involved health professionals such as nurses, doctors, or paraprofessionals</b>”</p> <p>Eight of the studies were considered home visitation studies where the intervention children received home visits <b>typically by doctors, nurses, or paraprofessionals</b>”</p>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Child disruptive behaviour outcomes	<p>Home visits</p> <ul style="list-style-type: none"> <li>• Australia (Cullen 1976)</li> <li>• Christchurch, New Zealand (Fergusson 2005)</li> <li>• Los Angeles, California, United States (Heinecke 2001)</li> <li>• Memphis, Tennessee, United States (Kitzman 1997)</li> <li>• United States (McCarton 1997)</li> <li>• Denver, Colorado, United States (Olds 2004)</li> <li>• United States (Stone 1988)</li> <li>• Two urban hospitals, United States (Butz 2001)</li> </ul>

<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Child disruptive behaviour outcomes	“that visited the <b>mothers</b> and gave them advice about how to effectively manage their child’s behavior. All of the early family/parent training interventions (as defined) in these studies began prior to childbirth or early on during infancy”
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
Child disruptive behaviour outcomes	“relatively early on in life (i.e., pre-birth and/or during infancy).” Targeted age <ul style="list-style-type: none"> <li>• Birth (Butz 2001; Fergusson 2005; Heinecke 2001; Kitzman 1997; McCarton 1997; Olds 2004; Stone 1988)</li> <li>• 1 year olds (Cullen 1976)</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	
Child disruptive behaviour outcomes	Home visits “visited the mothers <b>and gave them advice about how to effectively manage their child’s behavior</b> ”
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
<b>What</b> could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
<b>What</b> could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BAI: Behaviour Assessment Interview; CBCL: Child Behaviour Checklist; CI: confidence interval; ECBI: Eyberg Child Behaviour Inventory; ES: effect size; g: grams; N: number; NR: not reported; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; USA: United States of America

**Table 31: Evidence table for Yoshikawa 1995<sup>21</sup>**

<b>Review ID</b>	Yoshikawa 1995
<b>Search date</b>	NR
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	40 included studies; 28 relevant studies (study designs NR)
<b>No. participants in relevant studies</b>	NR
<b>Location/setting</b>	USA or Canada (inclusion criterion)
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 1/11 (‘low’ quality)
<b>Quality of relevant studies</b>	Not assessed/reported
<b>Review objective</b>	To review early education and family support programs which have attempted to improve the lives of children and families to determine if the programs decreased delinquency or antisocial behaviour, or lessened the impact of the factors that are hypothesised to lead to such behaviour
<b>Review eligibility criteria</b>	<u>Designs</u> : ‘adequate’ research design (when a single program was evaluated by RCTs and less well-controlled designs, the results of the RCT were reported); <u>participants</u> : populations which displayed the risk factors associated with later delinquent or antisocial behaviour (e.g. low household income, single parent, low parental educational level, low birthweight and/or preterm birth); <u>interventions</u> : services (education and family support programs) between the prenatal period and entry into primary school; <u>outcomes</u> : studies assessed possible effects on risk factors for chronic juvenile delinquency and/or possible effects on antisocial behaviour or delinquency; <u>other</u> : carried out in the USA or Canada

<sup>21</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

<b>Participant population</b>	Populations which displayed the risk factors associated with later delinquent or antisocial behaviour (e.g. low household income, single parent, low parental educational level, low birthweight and/or preterm birth)	
<b>Intervention</b>	Early education programs (child focused): educational day care (1 study); family support programs (parent focused): majority home visiting (20 studies); combination programs with early education and family support: majority home visiting and centre-based educational day care or preschool (9 studies) <i>Note: 2 studies were included in 2 categories</i> 'Intensity' of interventions ranged from 10 home visits to 110 home visits (a number of studies reported 'weekly' or 'bi weekly' home visits but duration not clearly reported)	
<b>Comparator</b>	NR	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to one year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Single study results</b>		
Early cognitive ability (IQ, school achievement, language development or verbal ability)	<i>Early education programs</i> 1 study measured (design and N=NR)	1 had positive result (SS)
	<i>Family support programs</i> 11 studies measured (4 months to grade 5 (~10-11 years)) (designs and Ns=NR)	4 had positive results (SS)
		3 had mixed results 4 showed no difference
<i>Combination programs with early education and family support</i> 9 studies measured (12 months to 10 years) (designs and Ns=NR)	7 had positive results (SS) 2 had mixed results	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Single study results</b>		
Antisocial/delinquent behaviour (parent-teacher rating, official delinquency or criminal reports)	<i>Early education programs</i> 1 study measured (design and N=NR)	1 had negative result (SS): Aggression: I > C at school entry (effect later faded)
	<i>Family support programs</i> 3 studies measured (2 years to grade 4 (~9-10 years)) (designs and Ns=NR)	1 had positive result (SS): I less avoidant and angry than C at post-test
		2 showed no difference (short-term effects only): I = C on behaviour problems at 4 years I = C on classroom behaviour problems in grades 2, 3, 4
<i>Combination programs with early education and family support</i> 3 studies measured (8-16 years) (designs and Ns=NR)	3 had positive results (SS) (long-term effects): Aggressive behaviour: I < C at 1 to 8 years post-program; I = C at 8 to 11 years post-program (though high attrition) Aggressive behaviour: I > C in grade 1; I < C in number and severity of juvenile offences at 10 year post-program (13 to 16 years) Aggression: I < C at 10 year follow up (boys only)	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

Parent-infant relationship		
Outcome measure used in the review	Results reported in the review	
<b>Single study results</b>		
Parenting (mother-child interaction, parenting behaviour, attachment, child welfare)	<i>Early education programs</i> 1 study measured (design and N=NR)	1 had mixed result
	<i>Family support programs</i> 16 studies measured (4-54 months) (designs and Ns=NR)	10 had positive results (SS)
		3 had mixed results
		3 showed no difference
	<i>Combination programs with early education and family support</i> 7 studies measured (4 months to 5 years) (designs and Ns=NR)	5 had positive results (SS)
		1 had mixed results
1 showed no difference		
<b>Parent/caregiver psychosocial wellbeing</b>		
Outcome measure used in the review	Results reported in the review	
<b>Single study results</b>		
Maternal life course (maternal education and employment, childbearing, family economic self-sufficiency)	<i>Early education programs</i> 1 study measured (design and N=NR)	1 had positive result (SS)
	<i>Family support programs</i> 5 studies measured (1-4 years) (designs and Ns=NR)	5 had positive results (SS)
	<i>Combination programs with early education and family support</i> 4 studies measured (1-10 years) (designs and Ns=NR)	4 had positive results (SS)
<b>Parent/caregiver knowledge, practices and behaviours</b>		
Outcome measure used in the review	Results reported in the review	
NR	NR	
<b>Parent/caregiver views of intervention</b>		
Outcome measure used in the review	Results reported in the review	
NR	NR	
<b>Family relationships</b>		
Outcome measure used in the review	Results reported in the review	
NR	NR	
<b>Systems outcomes</b>		
Outcome measure used in the review	Results reported in the review	
NR	NR	
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>		
Antisocial/delinquent behaviour	<p><b>Who: COMBINED FAMILY SUPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>NR (Johnson 1987)</li> <li>NR (Lally 1988)</li> <li>4 person team: paediatrician, home visitor, primary child care worker, developmental examiner (Seitz 1994)</li> </ul> <p><b>Characteristics of “effective programs” [Johnson 1987; Lally 1988; Seitz 1994]</b></p> <ul style="list-style-type: none"> <li>Home-visitor-to-family ratios were generally 1 to 10 or better; staff-child ratios in infant/toddler educational child care were in the range of 1 adult to 3-4 children, and 1 to 6 in preschool programs</li> </ul>	
<b>Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>		
All outcomes	Inclusion criteria: “were carried out in the United States of Canada”	
<b>To whom could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>		



All outcomes	<p>Inclusion criteria: “served populations which displayed the risk factors associated with later delinquent or antisocial behavior (for example, low household income, single parent, low parental educational level, low birth weight, and/or preterm birth)”</p> <p><b>Characteristics of “effective programs” [Johnson 1987; Lally 1988; Seitz 1994]</b></p> <ul style="list-style-type: none"> <li>• Areas with the highest crimes rates (urban, low-income communities) were targeted in all 3 programs</li> </ul>
Antisocial/delinquent behaviour	<p><b>To whom: COMBINED FAMILY SUPPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• Low-income Mexican-American families (Johnson 1987)</li> <li>• Low-income primarily African-American families (Lally 1988)</li> <li>• Pregnant, low-income primarily African-American women (Seitz 1994)</li> </ul>
<b>When could be the best time for the intervention, program, or message delivery to occur?</b>	
Early cognitive ability	<p><b>Age of child: FAMILY SUPPORT PROGRAMS</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• 0-3 months (Achenbach 1990)</li> <li>• 0-12 months (Badger 1981)</li> <li>• 3 months to 3 years (Jester 1983)</li> <li>• 0-12 months (Ross 1984)</li> </ul> <p>Mixed results</p> <ul style="list-style-type: none"> <li>• 0-6 months (Field 1982)</li> <li>• 7<sup>th</sup> month pregnancy to 3 years (Gutelius 1977)</li> <li>• 3, 7 or 11 months to 16 months later (Lamble 1974)</li> </ul> <p>No clear difference</p> <ul style="list-style-type: none"> <li>• 0-12 months (Barrera 1986)</li> <li>• Starting at 0-9 months to 18 months (Lyons-Ruth 1990)</li> <li>• Pregnancy to 24 months (Olds 1988)</li> <li>• 0-5 years (Wasik 1990)</li> </ul> <p><b>Intensity: FAMILY SUPPORT PROGRAMS</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• 7 in hospital sessions and 4 home visits (Achenbach 1990)</li> <li>• 0-12 months (Badger 1981)</li> <li>• From 3 months to 2 years: weekly home visits, from age 2 to 3: twice weekly part-day preschool (Jester 1983)</li> <li>• 15 home visits (Ross 1984)</li> </ul> <p>Mixed results</p> <ul style="list-style-type: none"> <li>• Bi-weekly home visits (Field 1982)</li> <li>• 18 home visits in year 1, 12 in year 2, 8 in year 3 (Gutelius 1977)</li> <li>• Weekly home visits (Lamble 1974)</li> </ul> <p>No clear difference</p> <ul style="list-style-type: none"> <li>• home visits weekly for 1-4 months, bi-weekly for 5-8 months, monthly for 9-12 months (average 23 visits) (Barrera 1986)</li> <li>• Approximately weekly home visits (Lyons-Ruth 1990)</li> <li>• 1 home visit per week for 1<sup>st</sup> 6 weeks postpartum gradually slowing to 1 visit every 6 weeks (average 31 visits (Olds 1988)</li> <li>• 107 home visits (Wasik 1990)</li> </ul> <p><b>Age of child: COMBINED FAMILY SUPPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• 3-5 months to 3 years (Andrews 1983)</li> <li>• 2 months to 3 years (Andrews 1983b)</li> <li>• From hospital to discharge to 3 years (Brooks-Gunn 1994)</li> <li>• From 0-6 months (Field 1982)</li> <li>• 0-5 years (Garber 1988)</li> <li>• 0-5 years (Lally 1988)</li> <li>• Pregnancy to 30 months (Seitz 1994)</li> </ul> <p>Mixed results</p> <ul style="list-style-type: none"> <li>• 1-3 years to 3-5 years (Johnson 1987)</li> <li>• 0-5 years (Wasik 1990)</li> </ul> <p><b>Intensity: COMBINED FAMILY SUPPORT AND EDUCATION</b></p>

	<p>Significant improvement</p> <ul style="list-style-type: none"> <li>Year 1: 3-4 half days per week with mothers and infants together in centre, 15-36 months: 4 half days per week, mothers as understudies to teachers, fifth day in classes (Andrews 1983)</li> <li>2 half days per week in centre, child care and parenting groups (Andrews 1983b)</li> <li>Home visits weekly in year 1, bi-weekly in years 2 and 3, at least 5 half days at preschool per week in 2<sup>nd</sup> and 3<sup>rd</sup> years, bi-monthly group meetings in 2<sup>nd</sup> and 3<sup>rd</sup> years (Brooks-Gunn 1994)</li> <li>5 half days per week with mothers and children together at preschool, mothers employed as teachers' aides (Field 1982)</li> <li>Full-day child care 5 days per week, job counselling and training for parents (Garber 1988)</li> <li>Weekly home visits, full-day child care from 6 months to 5 years (Lally 1988)</li> <li>Average of 38 home visits, optional educational child care, well baby exams (Seitz 1994)</li> </ul> <p>Mixed results</p> <ul style="list-style-type: none"> <li>Year 1: 25 home visits, year 2: 4 half days per week of educational child care plus classes for parents (Johnson 1987)</li> <li>110 home visits and full-day child care 5 days per week (Wasik 1990)</li> </ul>
Antisocial/delinquent behaviour	<p><b>Age of child: FAMILY SUPPORT PROGRAMS</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>1-2 years (Lieberman 1991)</li> </ul> <p>No clear difference</p> <ul style="list-style-type: none"> <li>7<sup>th</sup> month pregnancy to 3 years (Gutelius 1977)</li> <li>3 months to 3 years (Jester 1983)</li> </ul> <p><b>Intensity: FAMILY SUPPORT PROGRAMS</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>Weekly home visits (Lieberman 1991)</li> </ul> <p>No clear difference</p> <ul style="list-style-type: none"> <li>18 home visits in year 1, 12 in year 2, 8 in year 3 (Gutelius 1977)</li> <li>From 3 months to 2 years: weekly home visits, from age 2 to 3: twice weekly part-day preschool (Jester 1983)</li> </ul> <p><b>Age of child: COMBINED FAMILY SUPPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>1-3 years to 3-5 years (Johnson 1987)</li> <li>0-5 years (Lally 1988)</li> <li>Pregnancy to 30 months (Seitz 1994)</li> </ul> <p><b>Intensity: COMBINED FAMILY SUPPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>Year 1: 25 home visits, year 2: 4 half days per week of educational child care plus classes for parents (Johnson 1987)</li> <li>Weekly home visits, full-day child care from 6 months to 5 years (Lally 1988)</li> <li>Average of 38 home visits, optional educational child care, well baby exams (Seitz 1994)</li> </ul> <p><b>Characteristics of "effective programs" [Johnson 1987; Lally 1988; Seitz 1994]</b></p> <ul style="list-style-type: none"> <li>Each of the individual components were intensive <ul style="list-style-type: none"> <li>Visits were made to the homes of the families weekly to monthly, and ranged from 25 to 60</li> <li>The early childhood educational component ranged from half day to full-day sessions, usually 4-5 days a week</li> </ul> </li> <li>In general, duration did not appear to be related to magnitude or likelihood of long-term effect; none of the programs were shorter than 2 years, but length ranged from 2-5 years</li> <li>With respect to timing, all were implemented in first 5 years, 2 began at or before birth, 1 began at age 1</li> </ul>
Maternal life course	<p><b>Age of child: FAMILY SUPPORT PROGRAMS</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>0-12 months (Badger 1981)</li> </ul>

	<ul style="list-style-type: none"> <li>• 0-6 months (Field 1982)</li> <li>• 7<sup>th</sup> month pregnancy to 3 years (Gutelius 1977)</li> <li>• Pregnancy to 24 months (Olds 1988)</li> <li>• Beginning in pregnancy (Seitz 1991)</li> </ul> <p><b>Intensity: FAMILY SUPPORT PROGRAMS</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• 44 classes (Badger 1981)</li> <li>• Bi-weekly home visits (0-6 months) (Field 1982)</li> <li>• 18 home visits in year 1, 12 in year 2, 8 in year 3 (Gutelius 1977)</li> <li>• 1 home visit per week for 1<sup>st</sup> 6 weeks postpartum gradually slowing to 1 visit every 6 weeks (average 31 visits) (Olds 1988)</li> <li>• Daily classes for teen mothers (14-19 years), from 1-4 academic quarters (Seitz 1991)</li> </ul> <p><b>Age of child: COMBINED FAMILY SUPPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• 3-5 months to 3 years (Andrews 1983)</li> <li>• From hospital to discharge to 3 years (Brooks-Gunn 1994)</li> <li>• From 0-6 months (Field 1982)</li> <li>• Pregnancy to 30 months (Seitz 1994)</li> </ul> <p><b>Intensity: COMBINED FAMILY SUPPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• Year 1: 3-4 half days per week with mothers and infants together in centre, 15-36 months: 4 half days per week, mothers as understudies to teachers, fifth day in classes (Andrews 1983)</li> <li>• Home visits weekly in year 1, bi-weekly in years 2 and 3, at least 5 half days at preschool per week in 2<sup>nd</sup> and 3<sup>rd</sup> years, bi-monthly group meetings in 2<sup>nd</sup> and 3<sup>rd</sup> years (Brooks-Gunn 1994)</li> <li>• 5 half days per week with mothers and children together at preschool, mothers employed as teachers' aides (Field 1982)</li> <li>• Average of 38 home visits, optional educational child care, well baby exams (Seitz 1994)</li> </ul>
Parenting	<p><b>Age of child: FAMILY SUPPORT PROGRAMS</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• 0-12 months (Barrera 1986)</li> <li>• Pregnancy to 6 months (Barth 1988)</li> <li>• 0-2 years (Gray 1979)</li> <li>• 0-2 years (Hardy 1989)</li> <li>• Pregnancy to 1 year (Jacobson 1990)</li> <li>• 3, 7 or 11 months to 16 months later (Lamble 1974)</li> <li>• 7<sup>th</sup> month of pregnancy to 15 months postpartum OR 6 weeks to 15 months postpartum (Larson 1980)</li> <li>• 1-2 years (Lieberman 1991)</li> <li>• Pregnancy to 24 months (Olds 1988)</li> <li>• 0-12 months (Ross 1984)</li> </ul> <p>Mixed results</p> <ul style="list-style-type: none"> <li>• 0-6 months (Field 1982)</li> <li>• 7<sup>th</sup> month pregnancy to 3 years (Gutelius 1977)</li> <li>• Starting at 0-9 months to 18 months (Lyons-Ruth 1990)</li> </ul> <p>No clear difference</p> <ul style="list-style-type: none"> <li>• 0-18 months (Osofsky 1988)</li> <li>• 0-3 months (Siegel 1980)</li> <li>• 0-5 years (Wasik 1990)</li> </ul> <p><b>Intensity: FAMILY SUPPORT PROGRAMS</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• Home visits weekly for 1-4 months, bi-weekly for 5-8 months, monthly for 9-12 months (average 23 visits) (Barrera 1986)</li> <li>• 2 home visits per month for 6 months (Barth 1988)</li> <li>• Weekly home visits, bi-weekly visits to paediatrician and bi-weekly calls to paediatrician (Gray 1979)</li> <li>• 10 home visits (Hardy 1989)</li> <li>• 30 home visits (Jacobson 1990)</li> </ul>

	<ul style="list-style-type: none"> <li>• Weekly home visits (Lamble 1974)</li> <li>• 7 visits from 6 weeks to 6 months, 3 visits from 6-15 months (Larson 1980)</li> <li>• Weekly home visits (Lieberman 1991)</li> <li>• 1 home visit per week for 1<sup>st</sup> 6 weeks postpartum gradually slowing to 1 visit every 6 weeks (average 31 visits) (Olds 1988)</li> <li>• 15 home visits (Ross 1984)</li> </ul> <p>Mixed results</p> <ul style="list-style-type: none"> <li>• Bi-weekly home visits (Field 1982)</li> <li>• 18 home visits in year 1, 12 in year 2, 8 in year 3 (Gutelius 1977)</li> <li>• Approximately weekly home visits (Lyons-Ruth 1990)</li> </ul> <p>No clear difference</p> <ul style="list-style-type: none"> <li>• 21 home visits (Osofsky 1988)</li> <li>• 3 home visits per month for 3 months after birth, with or without extended contact between mother and infant in hospital (Siegel 1980)</li> <li>• 107 home visits (Wasik 1990)</li> </ul> <p><b>Age of child: COMBINED FAMILY SUPPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• 3-5 months to 3 years (Andrews 1983)</li> <li>• 2 months to 3 years (Andrews 1983b)</li> <li>• From hospital to discharge to 3 years (Brooks-Gunn 1994)</li> <li>• 0-5 years (Garber 1988)</li> <li>• 1-3 years to 3-5 years (Johnson 1987)</li> </ul> <p>Mixed results</p> <ul style="list-style-type: none"> <li>• From 0-6 months (Field 1982)</li> </ul> <p>No clear difference</p> <ul style="list-style-type: none"> <li>• 0-5 years (Wasik 1990)</li> </ul> <p><b>Intensity: COMBINED FAMILY SUPPORT AND EDUCATION</b></p> <p>Significant improvement</p> <ul style="list-style-type: none"> <li>• Year 1: 3-4 half days per week with mothers and infants together in centre, 15-36 months: 4 half days per week, mothers as understudies to teachers, fifth day in classes (Andrews 1983)</li> <li>• 2 half days per week in centre, child care and parenting groups (Andrews 1983b)</li> <li>• Home visits weekly in year 1, bi-weekly in years 2 and 3, at least 5 half days at preschool per week in 2<sup>nd</sup> and 3<sup>rd</sup> years, bi-monthly group meetings in 2<sup>nd</sup> and 3<sup>rd</sup> years (Brooks-Gunn 1994)</li> <li>• Full-day child care 5 days per week, job counselling and training for parents (Garber 1988)</li> <li>• Year 1: 25 home visits, year 2: 4 half days per week of educational child care plus classes for parents (Johnson 1987)</li> </ul> <p>Mixed results</p> <ul style="list-style-type: none"> <li>• 5 half days per week with mothers and children together at preschool, mothers employed as teachers' aides (Field 1982)</li> </ul> <p>No clear difference</p> <ul style="list-style-type: none"> <li>• 110 home visits and full-day child care 5 days per week (Wasik 1990)</li> </ul>
<p><b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</p>	
<p>Antisocial/delinquent behaviour</p>	<p>“In general, the review of these 40 programs leads to two main conclusions... the programs that demonstrated the long-term effects on crime and antisocial behavior tended to be those that combined early childhood education and family support services, in other words, the programs that addressed multiple risk factors... and among the more specialized programs, those designed primarily to serve adults tend to benefit adults more than children, and those designed primarily to serve children tend to benefit children more than adults.”</p> <p><b>Characteristics of “effective programs” [Johnson 1987; Lally 1988; Seitz 1994]</b></p> <ul style="list-style-type: none"> <li>• Provision of quality educational child care and/or preschool as well as support to adults in peer group and family settings</li> </ul>

	<ul style="list-style-type: none"> <li>Strong theoretical bases for their centre-based and home visiting curricula; most curricula emphasised the initiation and planning of activities by the child, rather than the teacher</li> </ul>
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be <b>framed</b> ?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; C: control group; I: intervention group; IQ: Intelligence Quotient; N: number; NR: not reported; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SS: statistically significant difference; USA: United States of America

## Day care interventions

**Table 32: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review	
		Yoshikawa 1995*	Zoritch 2000
Study ID	Andrews 1983a	✓ (design NR, N=NR)	
	Andrews 1983b	✓ (design NR, N=NR)	
	Brooks-Gunn 1994	✓ (design NR, N=NR)	✓ (RCT, N=985)
	Campbell 1994	✓ (design NR, N=NR)	✓ (RCT, N=111)
	Field 1982	✓ (design NR, N=NR)	
	Garber 1988	✓ (design NR, N=NR)	✓ (qRCT, N=40)
	Johnson 1987	✓ (design NR, N=NR)	
	Lally 1988	✓ (design NR, N=NR)	
	Seitz 1994	✓ (design NR, N=NR)	
	Wasik 1990	✓ (design NR, N=NR)	✓ (RCT, N=65)

\*Full evidence table for Yoshikawa 1995 is included under 'Interventions for preventing later antisocial behaviour and delinquency'

**Abbreviations:** N: number; NR: not reported; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial;

**Table 33: Evidence table for Zoritch 2000<sup>22</sup>**

<b>Review ID</b>	Zoritch 2000
<b>Search date</b>	NR
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	Roberts I, Oakley A. Effect of out of home day care on the health and welfare of socially disadvantaged families with children: a randomised controlled trial. Ongoing trial.
<b>No. studies of relevance to this Overview and their design(s)</b>	8 included studies; 4 relevant studies (3 RCTs; 1 qRCT)
<b>No. participants in relevant studies</b>	1,201
<b>Location/setting</b>	USA
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 5/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Significant methodological weaknesses in trials: 1/4 trials had adequate allocation concealment; 4/4 trials had low attrition; 1/4 trials had 'poor' blinding (1 trial had 'adequate' blinding; 2 trials had 'good blinding') (Prendeville 1998 criteria)
<b>Review objective</b>	To assess the effects of day care on children and families
<b>Review eligibility criteria</b>	<u>Designs:</u> Trials with random or quasi-random assignment of study participants to the intervention or control group; <u>participants:</u> children under 5; <u>interventions:</u> non-parental day-care for pre-school education; <u>outcomes:</u> educational outcomes; health and welfare outcomes; maternal effects; <u>other:</u> no language restrictions
<b>Participant population</b>	Predominately, studies targeted families of lower socio-economic status; all included boys and girls; 1 trial started at birth; 3 trials started when the children were < 1 year old
<b>Intervention</b>	3/4 trials mixed an element of out-of-home day care with some home visiting, and targeted parental training. Interventions varied in intensity (duration of day care ranged, up to 8 hours per day, for 5 years)
<b>Comparator</b>	Varied (2 trials: home visits/social work services and infant formula)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<sup>22</sup> green shading indicates results significantly in favour of the intervention

<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
IQ at 36 months of age	MD (F): 14.37 (95% CI 12.30, 16.44); I <sup>2</sup> 94%; P<0.0001 (4 studies: 3 RCTs, 1 qRCT, N=1,109)
<b>Single study results</b>	
Measures of school achievement: retention in grade	OR (F): 0.39 (95% CI 0.17, 0.89) (1 RCT, N=92)
Measures of school achievement: special education classes	OR (F): 0.28 (95% CI 0.16, 0.88) (1 RCT, N=92)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (reported narratively in text)</b>	
Behaviour (maternal ratings)	Higher scores for intervention children at 3 years (1 RCT, N=985) No difference in scores at 5 years; no difference in behaviour problems at 8 years (1 RCT, N=985)
Behaviour	Intervention children slightly more likely to be retained in special education classes for behavioural problems; at 12-15 year follow up, intervention children rates themselves higher on self-concept (1 RCT, N=111) No differences at 8 years (psychological scales) (1 RCT, N=111)
Behaviour	The intervention children were more likely to show disruptive behaviour than controls (1 qRCT, N=40)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (reported narratively in text)</b>	
Child health outcomes: average number of reported health conditions	Higher for intervention group at 3 years (1 RCT, N=985) No difference at 5 years (1 RCT, N=985)
Child health outcomes: hospitalisation rates	Similar rates (1 RCT, N=985)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (reported narratively in text)</b>	
Observer ratings of mother-child interaction: measures of persistence, positive involvement with task, enthusiasm at 30 months	Intervention group scored higher at 30 months (1 RCT, N=985)
Mother-child reciprocal communication	Increased (1 RCT, N=985)
Mother-child reciprocal communication	Increased (1 qRCT, N=40)
Mother-infant interaction (from video-taped sessions)	Intervention infants communicated with their mothers at a higher level (4 times more likely to try modify their mothers' behaviour, and had longer periods of mutual play) (1 RCT, N=111)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (reported narratively in text)</b>	
Maternal education, employment, financial self-support	Intervention mothers had on average 1 year more education when child 54 months, fewer were unemployed or had unskilled jobs, and more were financially self-supporting (1 RCT, N=111)
Maternal employment and income	Intervention mothers more likely to have stable employment history and higher weekly income (1 qRCT, N=40)
Maternal employment	Intervention mothers had more employment, entered the work force when children were younger (1 RCT, N=985)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (reported narratively in text)</b>	
Subsequent childbearing	Teenage intervention mothers were less likely to have further children (23% vs. 40%) (1 RCT, N=65)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; (F): fixed effect; IQ: intelligence quotient; MD: mean difference; N: number; NR: not reported; OR: odds ratio; P: P value; qRCT: quasi-randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RCT: randomised controlled trial; USA: United States of America



## Skin-to-skin care interventions

**Table 34: Matrix indicating the studies that were included in the systematic reviews**

		<b>Systematic review</b>
		Moore 2012
<b>Study ID</b>	Anderson 2003	✓ (RCT, N=31)
	Bergman 2004	✓ (RCT, N=35)
	Bystrova 2003	✓ (RCT, N=176)
	Carfoot 2004	✓ (RCT, N=26)
	Carfoot 2005	✓ (RCT, N=204)
	Carlsson 1978	✓ (RCT, N=62)
	Christensson 1992	✓ (RCT, N=50)
	Christensson 1995	✓ (RCT, N=44)
	Chwo 1999	✓ (RCT, N=34)
	Craig 1982	✓ (RCT, N=60)
	Curry 1982	✓ (RCT, N=20)
	De Chateau 1977	✓ (RCT, N=62)
	Fardig 1980	✓ (RCT, N=51)
	Ferber 2004	✓ (RCT, N=42)
	Gouchon 2010	✓ (RCT, N=34)
	Hales 1977	✓ (RCT, N=60)
	Huang 2006	✓ (RCT, N=78)
	Kastner 2005	✓ (RCT, N=57)
	Khadivzadeh 2008	✓ (RCT, N=92)
	Mazurek 1999	✓ (RCT, N=66)
	McClellan 1980	✓ (RCT, N=40)
	Mizuno 2004	✓ (RCT, N=60)
	Moore 2005	✓ (RCT, N=20)
	Nolan 2009	✓ (RCT, N=50)
	Punthmatharith 2001	✓ (RCT, N=196)
	Shiau 1997	✓ (RCT, N=58)
	Sosa 1976a	✓ (RCT, N=60)
	Sosa 1976b	✓ (RCT, N=68)
	Sosa 1976c	✓ (RCT, N=40)
	Svejda 1980	✓ (RCT, N=30)
	Syfrett 1996	✓ (RCT, N=8)
	Thomson 1979	✓ (RCT, N=34)
	Vaidya 2005	✓ (RCT, N=110)
Villalon 1993	✓ (RCT, N=119)	

**Abbreviations:** N: number; RCT: randomised controlled trial

**Table 35: Evidence table for Moore 2012<sup>23</sup>**

<b>Review ID</b>	Moore 2012
<b>Search date</b>	November 2011
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	Keshavarz M. Comparison the effect of skin to skin contact and music during skin to skin contact on maternal state anxiety in cesarean section unit. IRCT Iranian Registry of Clinical Trials ( <a href="http://www.irct.ir">www.irct.ir</a> ) (accessed 6 December 2010) 2010.
<b>No. studies if relevance to this Overview and their design(s)</b>	34 RCTs
<b>No. participants in relevant studies</b>	2,177

<sup>23</sup> green shading indicates results significantly in favour of the intervention

<b>Location/setting</b>	Canada: 1 RCT; Chile: 1 RCT; Germany: 1 RCT; Guatemala: 4 RCTs; Iran: 1 RCT; Israel: 1 RCT; Italy: 1 RCT; Japan: 1 RCT; Nepal: 1 RCT; Poland: 1 RCT; Russia: 1 RCT; South Africa: 1 RCT; Spain: 2 RCTs; Sweden: 2 RCTs; Taiwan: 3 RCTs; Thailand: 1 RCT; UK: 2 RCTs; USA: 9 RCTs
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 10/11 ('high' quality)
<b>Quality of relevant studies</b>	Review authors' summary: the methodological quality of trials was mixed; overall the quality of reporting on study methods was poor, and for the majority of trials there was insufficient information on methods used to carry out randomisation; a particular problem in all of the included trials was lack of blinding
<b>Review objective</b>	To assess the effects of early skin-to-skin contact for healthy newborn infants compared to standard contact (infants held swaddled or dressed in their mothers arms, placed in open cribs or under radiant warmers)
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs in which the active encouragement of early skin-to-skin contact between mothers and their healthy newborn infants was compared to usual hospital care; qRCTs were excluded; <u>participants</u> : mothers and their healthy full term or late preterm newborn infants (34 to less than 37 completed weeks gestation) having early skin-to-skin care starting less than 24 hours after birth, and controls undergoing standard patterns of care; <u>interventions</u> : early skin-to-skin care; <u>outcomes</u> : primary outcomes included breastfeeding and infant outcomes; secondary outcomes included breastfeeding, infant and maternal outcomes
<b>Participant population</b>	Healthy full term infants and their mothers: 30 RCTs; healthy late preterm infants assigned to the normal newborn nursery: 4 RCTs
<b>Intervention</b>	Skin-to-skin care; duration of skin-to-skin varied from 15 minutes to a mean of 37 of 48 hours of continuous skin-to-skin care
<b>Comparator</b>	No skin-to-skin care
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Infant body weight change (g) day 14 post-birth	MD (F): -8.00 (95% CI -175.60, 159.61); I <sup>2</sup> 0%; P=0.93 (2 RCTs, N=43)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Not crying for > 1 min during 90 min	RR (F): 12.86 (95% CI 1.91, 86.44) (1 RCT, N=29)
Amount of crying (min) during a 75-min observation period	MD (F): -8.01 (95% CI -8.98, -7.04) (1 RCT, N=44)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
PCERA maternal positive affective involvement and responsiveness 12 months post-birth	MD (F): 1.90 (95% CI -1.14, 4.94) (1 RCT, N=61)
PCERA dyadic mutuality and reciprocity 12 months post-birth	MD (F): 1.30 (95% CI 0.24, 2.36) (1 RCT, N=61)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Maternal state anxiety day 3 post-birth	MD (F): -5.00 (95% CI -9.00, -1.00) (1 RCT, N=56)

<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Breastfeeding (1 to 4 months post-birth)	<b>RR (R): 1.27 (95% CI 1.06, 1.53); I<sup>2</sup> 47%; P=0.0093</b> (13 RCTs, N=702)
Duration of breastfeeding (days)	MD (R): 42.55 (95% CI -1.69, 86.79); I <sup>2</sup> 66%; P=0.059 (7 RCTs, N=324)
Breastfeeding (1 year post-birth)	RR (F): 6.19 (95% CI 0.82, 46.78); I <sup>2</sup> 0%; P=0.077 (2 RCTs, N=62)
<b>Single study results</b>	
Maternal parenting confidence at 1 month post-birth	MD (F): 5.60 (95% CI -6.24, 17.44) (1 RCT, N=20)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Mother's most certain preference for same post-delivery care in the future	RR (F): 2.82 (95% CI 2.08, 3.82) (1 RCT, N=199)
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; (F): fixed effect; g: grams; MD: mean difference; min: minute(s); N: number; NR: not reported; PCERA: Parent-Child Early Relational Assessment Scale; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; UK: United Kingdom; USA: United states of America

## Behavioural sleep interventions

**Table 36: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review
		Douglas 2013
Study ID	Doan 2007	✓ (RCT, N=133)
	Fisher 2010	✓ (controlled, N=364)
	Goyal 2009	✓ (RCT, N=112)
	Hiscock 2008*	✓ (cRCT, N=NR)
	Keefe 2006*	✓ (RCT, N=111)
	Phillips 2010	✓ (cohort, N=251)
	Smart 2007	✓ (pre-post, N=59 mothers, 52 fathers)
	St James-Roberts 2006	✓ (comparative cohorts, N=193)
	St James Roberts 2001*	✓ (RCT, N=610)
	Stremler 2013	✓ (RCT, N=246)
	Symon 2005*	✓ (RCT, N=268)

\*Study discussed briefly in text; not presented in Table of 'key studies'

**Abbreviations:** N: number; NR: not reported; RCT: randomised controlled trial

**Table 37: Evidence table for Douglas 2013<sup>24</sup>**

<b>Review ID</b>	Douglas 2013
<b>Search date</b>	January 1993 to August 2013
<b>Review method</b>	Narrative synthesis ( <i>"Because studies measure multiple aspects of unsettled infant behavior and sleep, multiple parent and infant outcomes, and multiple variations of behavioural interventions, data pooling, and statistical analysis for comparisons across studies were not viable or meaningful"</i> )
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	The review included 43 articles, though detailed characteristics were presented in a Table on 19 'key selected studies' only, 7 of which were relevant (3 RCTs; 1 controlled study; 2 cohort studies; 1 pre-post intervention study); a further 4 studies (RCTs) discussed in text were noted to be relevant
<b>No. participants in relevant studies</b>	1,410 for 7 relevant studies presented in Table (989 for 3 of the 4 additional studies reported in text; N for 1 study was NR) (therefore, N=>2,399 in total)
<b>Location/setting</b>	Australia: 4 studies; Canada: 1 study; Denmark and/or UK: 2 studies; NR: 2 studies; UK: 1 study; USA: 1 study
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 2/11 ('low' quality)
<b>Quality of relevant studies</b>	Not assessed/reported for individual studies (review authors report general <i>"methodological constraints"</i> of evidence concerning behavioural interventions for infant sleep: unidentified and unmanaged feeding problems confound almost all studies concerning unsettled infant behaviour in the 1 <sup>st</sup> months of life; evaluations of interventions fail to differentiate between the 1 <sup>st</sup> 6 and 2 <sup>nd</sup> 6 months of an infant's life (despite neurodevelopmental differences); reductive analyses are applied to evaluations of complex interventions)
<b>Review objective</b>	To determine whether behavioural interventions for sleep, when applied by parents to infants younger than 6 months, improve maternal and infant outcomes
<b>Review eligibility criteria</b>	<u>Designs</u> : meta-analyses and systematic reviews, RCTs and cohort studies were included; <u>participants</u> : participants were parents and their typically developing infants, with an upper age limit of 6 months; <u>interventions</u> : studies considering the effects of behavioural interventions on infant sleep were included; <u>other</u> : studies published in peer-reviewed English language publications were included
<b>Participant population</b>	Parents of infants (inclusion criteria specified an upper age limit of 6 months, however some studies noted to include infants up 12 months)

<sup>24</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

<b>Intervention</b>	Behavioural sleep interventions; intervention durations predominately NR
<b>Comparator</b>	NR for all studies (often standard care)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Night sleep	Parents of infants who were breastfed in the evening and/or at night slept an average of 40-45 minutes more than parents of infants given formula; formula fed infants had more sleep disturbance (1 RCT, N=133)
Infant night-time awakenings at 6 and 12 weeks; general sleep disturbance scale	NS difference (1 RCT, N=246) [education in behavioural sleep intervention by 45 minute hospital session postpartum; booklet; phone support at 1, 2, 4 weeks postpartum]
Unsettled infant behaviour at 1 and 3 months after discharge	Less with intervention (1 cohort study, N=251) [multi-faceted residential intervention that included behavioural sleep interventions]
Parent-reported presenting problem (crying or sleeping)	Decrease post-intervention (1 pre-post study, N=59) [infants referred to tertiary paediatric clinic for unsettled babies]
Crying at 5 weeks	Mothers more likely to use behavioural interventions, less likely to breastfeed, with less physical contact with their babies, have infants who cry 45 mins more per day, compared with mothers who are twice as likely to breastfeed at 12 weeks, have more physical contact, and practice sensible cue-based care (1 comparative cohort study, N=193)
Sleep duration; infant crying	Increased sleep duration No decrease in infant crying (2 RCTs, N=610, N=268) [parent delivery of behavioural sleep intervention in 1 <sup>st</sup> 12 weeks]
Crying	Decreased crying (1 RCT, N=111) [behavioural intervention involving weekly home visits by paediatric nurse specialists over 4 weeks (infants between 2 and 6 weeks)]
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Edinburgh Postnatal Depression Scale	NS difference (1 RCT, N=246) [education in behavioural sleep intervention by 45 minute hospital session postpartum; booklet; phone support at 1, 2, 4 weeks postpartum]
Depression at 3 months postpartum	Mothers who were awake for more than 2 hours between midnight and 6 am, who napped < 60 mins during the day, and who had difficulty going back to sleep when woken were at increased risk; maternal ratings of infant temperament account for < 1 % of variance in postpartum depressive symptoms (1 RCT, N=112)
Depression, anxiety or adjustment disorder at 6 months	Decreased diagnosis with intervention (1 controlled study, N=364) [1/2 day group program at 4 weeks post-birth including behavioural interventions for infant sleep and psycho-education to enhance relationship with spouse/partner]

Maternal mood at 1 and 3 months after discharge	Improved with intervention (1 cohort study, N=251) [multi-faceted residential intervention that included behavioural sleep interventions]
Edinburgh Postnatal Depression Scores 3-4 weeks later	Decrease post-intervention (1 pre-post study, N=59) [infants referred to tertiary paediatric clinic for unsettled babies]
Maternal depressive and anxiety symptoms	Improved scores, sustained until 2 years of age (1 cRCT, N=NR) [teaching mothers to implement behavioural interventions if they report a sleep problem when their baby is 7 months old]
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Intervention considered helpful	94% of mothers found talking about the baby helpful, 86% found learning that baby is well helpful, 46% found putting baby to bed awake and learning about settling techniques helpful (1 pre-post study, N=56) [infants referred to tertiary paediatric clinic for unsettled babies]
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; cRCT: cluster-randomised controlled trial; mins: minutes; N: number; NR: not reported; NS: non-significant; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; UK: United Kingdom; USA: United States of America

## Anticipatory guidance interventions

**Table 38: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review		
		Piotrowski 2009	Regalado 2001	
Study ID	Adair 1992		✓ (non-randomised, N=292)	
	Black 1997		✓ (RCT, N=59)	
	Bristor 1984		✓ (non-randomised, N=42)	
	Cameron 1986		✓ (RCT, N=602)	
	Casey 1980		✓ (RCT, N=32)	
	Caughy 2003; Caughy 2004; Huebner 2004; Johnston 2004; Johnston 2006; Minkovitz 2001; Minkovitz 2003; Minkovitz 2007; Niederman 2007	✓ (9 evaluation studies)* Healthy Steps involved 15 sites (5,565 newborns); 2,235 newborns were enrolled at randomised design sites (6 sites); 3,330 newborn were enrolled at quasi-experimental sites (9 sites)		
	Chamberlin 1979, 1980		✓ (non-randomised, N=371)	
	Dodds 1993		✓ (non-randomised, N=31)	
	Dworkin 1987		✓ (non-randomised, N=83)	
	Golova 1999		✓ (RCT, N=135)	
	Little 1983		✓ (non-randomised, N=79)	
	McKenzie 1991		✓ (RCT, N=42)	
	Osborn 1981		✓ (non-randomised, N=78)	
	Parkin 1993		✓ (RCT, N=38)	
	Pinilla 1993		✓ (RCT, N=26)	
	Rice 1997		✓ (non-randomised, N=50)	
	Scott 1990		✓ (RCT, N=120)	
	Taubman 1988		✓ (RCT, N=20)	
	Taubman 1984		✓ (RCT, N=60)	
	Taylor 1997		✓ (RCT, N=114)	
Taylor 1998		✓ (RCT, N=213)		
Wolke 1994		✓ (non-randomised, N=92)		
Wolfson 1992		✓ (RCT, N=60)		

\*Note: overlap in the samples included in these articles

**Abbreviations:** N: number; RCT: randomised controlled trial

**Table 39: Evidence table for Piotrowski 2009<sup>25</sup>**

<b>Review ID</b>	Piotrowski 2009
<b>Search date</b>	1966 to February 2007
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	13 articles/empirical evaluations of the Healthy Steps for Young Children Program (9 articles of relevance, reporting results of intervention vs. control groups)
<b>No. participants in relevant studies</b>	Healthy Steps involved 15 sites (5,565 newborns); 2,235 newborns were enrolled at randomised design sites (6 sites); 3,330 newborn were enrolled at quasi-experimental sites (9 sites)
<b>Location/setting</b>	USA
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 2/11 ('low' quality)
<b>Quality of relevant studies</b>	NR

<sup>25</sup> green shading indicates results significantly in favour of the intervention

<b>Review objective</b>	To systematically evaluate and summarise the literature pertaining to the Healthy Steps Program for Young Children ( <i>"a widely cited and utilized preventive model of care and anticipatory guidance"</i> )	
<b>Review eligibility criteria</b>	<u>Designs</u> : published empirical evaluations were included; studies reporting qualitative evaluations only were excluded; <u>outcomes</u> : subjective and objective outcomes were included (parenting practices or parent health related outcomes, child related outcomes, and quality of care)	
<b>Participant population</b>	Parents and their newborns	
<b>Intervention</b>	Healthy Steps for Young Children Program (HS) (3 year program): a wide variety of services to parents during the 1 <sup>st</sup> 3 years of life, extending beyond typical paediatric care: 9 enhanced well-child office visits beginning at birth by a paediatric clinician and Healthy Steps Specialists; Healthy Steps Specialists offered services designed to complement and extend office visits including: 1) sequence of 7 home visits at pre-determined milestones in children's development, 2) a child development information line for common parent concerns, 3) monthly parent group sessions with social support and parenting information	
<b>Comparator</b>	Routine or usual paediatric care (UC)	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Results from individual articles</b>		
Narrative summary from text <i>HS parents were less likely to report child behaviour problems than UC mothers</i>		
Parent reports of child problem behaviours	(6 RNS sites, N=1,593, child age: 30-33 months) 7% HS vs. 7% UC	(9 QES sites, N=2,144, child age: 30-33 months) 7% HS vs. 6% UC
Behaviour problems	(Subsample of 2 RNS sites, N=179, child age: 34-37 months) 34-37 months: mean: 47.85 HS vs. 51.15 UC	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Results from individual articles</b>		
Narrative summary from text <i>Children enrolled in HS were more likely to receive well-child care within specified time intervals and to have an up-to-date immunisation status than children in UC</i>		
Receipt of well-child care within specified time intervals; immunisation status at 24 months	(Subsample of 3 RNS sites and 2 control sites, N=343, child age: 30 months) Well-child care 2 month visit: 97.8% vs. 93.6% Well-child care 5 month visit: 93.9% vs. 87.2% Well-child care 15 month visit: 89.0% vs. 77.8% Up-to-date immunisations at 24 months: 88.0% vs. 84.6%	
Narrative summary from text <i>HS parents received more services on average and were more likely to attend scheduled well-child and vaccination visits than UC parents. HS families received greater continuity of care</i>		
Receipt of developmentally related services	(6 RNS sites, N=1,987, child age: 2-4 months) 4 or more HS services: 75% HS vs. 24% UC	(9 QES sites, N=2,909, child age: 2-4 months) 4 or more HS services: 73% HS vs. 13% UC
Receipt of 5 services; adherence of 6-well child and vaccination visits; use of ED for injury	(6 RNS sites, N=1,593, child age: 30-33 months) Effectiveness: 82% HS vs. 31% UC Timeliness: 90% HS vs. 85% UC Use of ED: 9% HS vs. 9% UC	(9 QES sites, N=2,144, child age: 30-33 months) Effectiveness: 82% HS vs. 28% UC Timeliness: 90% HS vs. 82% UC Use of ED: 9% HS vs. 12% UC
Receipt of services	(2 QES and 2 control sites, N=439, child age: 3 months) 4.3 services in 1 <sup>st</sup> 3 months HS vs. 2.9 services in 1 <sup>st</sup> 3 months UC	
Continuity of care; duration of care; number of completed immunisations and screenings	(1 site with 3 cohorts, N=363, birth to 36 months) Mean continuity of care index: 0.24 HS vs. 0.11 UC Duration of care: NS	



	Immunisations: NS Screenings: NS
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Results from individual articles</b>	
Narrative summary from text <i>When children were 3 years, HS mothers were more likely to interact sensitively and appropriately than UC mothers, and more likely to match their interactions to the needs of their child</i>	
Observation of standardised mother-child teaching task; standardised rating of caregiver-child free play episode	(Subsample of 2 RNS sites, N=179, child age 16-37 months) Mother-child teaching task: 16-18 months mean: 48.2 HS vs. 49.2 UC Mother-child teaching task: 34-37 months mean: 50.3 HS vs. 48.3 UC Caregiver-child free play: 16-18 months mean: 3.5 HS vs. 3.6 UC Caregiver-child free play: 34-37 months mean: 3.6 HS vs. 3.4 UC
Narrative summary from text <i>HS infants were more likely to be securely attached to their parents</i>	
Attachment security	(Subsample of 2 RNS sites, N=179, child age: 34-37 months) 16-18 months: mean: 0.41 HS vs. 0.36 UC 34-37 months: mean: 0.47 HS vs. 0.36 UC
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Results from individual articles</b>	
Narrative summary from text <i>Overall, HS parents reported fewer mental health symptoms, but higher stress and more concern with substance abuse than UC parents; fewer HS parents with depressive symptoms were above the clinical cut-off than UC parents. HS mothers were more likely to discuss their concerns with someone in the paediatric practice than UC mothers</i>	
Discussed sadness (subset of mothers with depressive symptoms)	(6 RNS sites, N=1,593) 22% HS vs. 19% UC
	(9 QES sites, N=2,144) 25% HS vs. 10% UC
Parental wellbeing: mental health symptoms; proportion of parents with depressive symptoms above clinical cut-off; parenting stress (hassles); support	(2 QES and 2 control sites, N=439, child age: 2-4 months and 30-33 months) Mental health symptoms: 14% HS vs. 18% UC Depressive symptoms above clinical cut-off: 7% HS vs. 13% UC Daily hassles: mean: 15.5 HS vs. 14.8 UC Family support: mean: 60.4 vs. 59.2 UC
Maternal depressive symptoms	(Subsample of 3 RNS sites and 2 control sites, N=343) Maternal depressive symptoms: mean (SD): 3.8 (4.42) HS vs. 3.5 (3.93) UC
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Results from individual articles</b>	
Narrative summary from text <i>HS parents engaged in significantly more evidence-based parenting practices than UC parents, such as instituting a prone sleep position with infants, establishing routines, reading to children, avoiding harsh discipline, allowing less TV viewing time, and playing with their child; evaluation 2 years after the program (when children were 5.5 years) indicated some effects persisted over time (less harsh discipline, more negotiating with children, more looking at books). HS parents were more satisfied with their role as a parent, had more knowledge of infant development, breastfed longer, and were more likely to engage in injury control behaviours and to endorse appropriate discipline practices than UC parents</i>	
Parent practices: prone sleep position; gave water	(6 RNS sites, N=1,987) Sleep position: 11% HS vs. 11% UC Water: 38% HS vs. 41% UC
	(9 QES sites, N=2,909) Sleep position: 11% HS vs. 14% UC Water: 38% HS vs. 51% UC
Self-reported harsh discipline response to child misbehaviour; parenting practices (routines, playing, safety)	(6 RNS sites, N=1,593) Harsh discipline: 7% HS vs. 9% UC Parenting practices: 73% HS vs. 72% UC
	(9 QES sites, N=2,144) Harsh discipline: 8% HS vs. 11% UC Parenting practices: 72% HS vs. 70% UC
Self-reported discipline strategies (inductive vs. punitive)	(Subsample of 2 RNS sites, N=432, child age: 16-37 months) Punitive strategies: 16-18 months: mean: -0.06 HS vs. 0.13 UC Punitive and inductive strategies: 34-37 months: NS
Parental practices; satisfaction with role as parent; knowledge of infant development; endorsed appropriate discipline; breastfeeding at 3 months; home safety index; read with infant in last week	(2 QES and 2 control sites, N=439) Substance concern: 8% HS vs. 3% UC Satisfaction with role: 98% HS vs. 93% UC Knowledge of infant behaviour: mean: 6.28 HS vs. 6.10 UC Appropriate discipline: 90% HS vs. 83% UC

	Breastfeeding: mean: 90.6 HS vs. 76.2 UC Safety: mean: 6.28 HS vs. 6.10 UC Reading: mean: 78.7 HS vs. 71.3 UC	
Use of severe discipline; use of negotiation; reading books; safety practices	(6 RNS sites and 9 QES sites HS N=1,724, UC N=1,441, birth to 5.5 years) Use of severe discipline: 10.1% HS vs. 14.1% UC Use of negotiation: 59.8% HS vs. 56.3% UC Reading books: 59.4% HS vs. 53.6% UC Safety practices: NS	
Initiated breastfeeding; breastfed 6 months or longer; use of routines; allowed television > 1 hour per day; injury prevention index; use of harsh discipline; parenting satisfaction	(Subsample of 3 RNS sites and 2 control sites, N=343) Initiated breastfeeding: 99.2% HS vs. 91.% UC Breastfed 6 months of longer: 83.8% HS vs. 64.4% UC Use of routines: 90.6% HS vs. 86.5% UC Television > 1 hour per day: 28.3% HS vs. 50% UC Injury prevention index: 83.8% HS vs. 72.1% UC Use of harsh discipline: 3.4% HS vs. 2.9% UC Parenting satisfaction: mean (SD): 26.4 (2.5) HS vs. 26.8 (3.0) UC	
<b>Parent/caregiver views of intervention</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Results from individual articles</b>		
Narrative summary from text <i>Overall, parents enrolled in HS reported receiving more services, and were more satisfied than UC parents. HS parents perceived their health care as more helpful, rated their provider as more competence and caring, and were more likely to feel cared for as a parent and to remain with the same practice over time than UC parents. Enhanced quality of care effects persisted overtime; at follow-up (5.5 years) more HS families reported feeling supported by their health care provider, receiving anticipatory guidance that matched their preference, and remained longer in their original practice</i>		
Parent perceptions of care	(6 RNS sites, N=1,987, child age: 2-4 months) Care helpful: 66% HS vs. 49% UC	(9 QES sites, N=2,909, child age: 2-4 months) Care helpful: 68% HS vs. 50% UC
Satisfaction with care; continuity of care; parent perceptions of care as helpful	(6 RNS sites, N=1,593, child age: 30-33 months) Satisfaction: 68% HS vs. 51% UC Continuity: 70% HS vs. 57% UC Perception: 68% HS vs. 57% UC	(9 QES sites, N=2,144, child age: 30-33 months) Satisfaction: 68% HS vs. 49% UC Continuity: 70% HS vs. 57% UC Continuity: 51% HS vs. 49% UC
Positive perceptions of care	(2 QES sites and 2 control sites, N=439, child age: 3 months) Baby's health cared for: 38% HS vs. 31% UC Cared for as parent: 38% HS vs. 27% UC Provider seen as competent: mean: 9.96 HS vs. 9.56 UC Provider seen as caring: mean: 16.87 HS vs. 16.39 UC Last paediatric visit "excellent": 81% HS vs. 75% UC	
Parent satisfaction with care; receiving needed anticipatory guidance; remaining at original practice	(6 RNS sites and 9 QES sites, N=3,165, birth to 5.5 years) Parent satisfaction: 82% HS vs. 79% UC Anticipatory guidance: 82% HS vs. 49.2% UC Retention: 65.1% HS vs. 61.4% UC	
<b>Family relationships</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Systems outcomes</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; ED: emergency department; HS; Healthy Steps; N: number; NR: not reported; NS: not significant; QES: quasi-experimental design; ROBIS: Risk of Bias in Systematic Reviews; RNS; randomised design; SD: standard deviation; UC: usual care; USA: United States of America

**Table 40: Evidence table for Regalado 2001<sup>26</sup>**

<b>Review ID</b>	Regalado 2001	
<b>Search date</b>	1979 to 1999	
<b>Review method</b>	Narrative synthesis	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	22 studies (13 RCTs and 9 non-randomised studies)	
<b>No. participants in relevant studies</b>	2,639	
<b>Location/setting</b>	NR	
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 2/11 ('low' quality)	
<b>Quality of relevant studies</b>	NR (authors note: "When a validated measure of methodological quality was applied to the intervention studies (Jadad 1996) only 5 (2 of infant crying and 3 of sleep problems) were of sufficient quality to consider quantitative analysis. Therefore, only a descriptive analysis is presented")	
<b>Review objective</b>	To examine the evidence base for primary health care services promoting the optimal development of typically developing children aged birth to 3 years	
<b>Review eligibility criteria</b>	<u>Designs/interventions</u> : evaluation studies of efficacy or effectiveness of education, intervention, and care coordination services or validation of assessment approaches were included; services applicable to an office practice setting were included; <u>participants</u> : the target population of studies had to include children aged birth to 3 years; <u>other</u> : studies published between 1979 and 1999, in English	
<b>Participant population</b>	Parents and their infants (children from birth to 3 years); further details NR	
<b>Intervention</b>	Anticipatory guidance for promoting child development (16 studies), addressing: child development: 2 studies; mother-infant relationship: 3 studies; infant temperament: 2 studies; sleep habits: 3 studies; book sharing: 1 study; group child well-care: 5 studies; problem-focused developmental interventions (counselling) (6 studies), addressing: excessive crying: 5 studies; night waking: 1 study Intervention durations NR	
<b>Comparator</b>	NR for studies of anticipatory guidance; varied for problem-focused developmental interventions: e.g. counselling vs. diet manipulation, car ride stimulation, reassurance, emotional support, no treatment, written information	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<i>Single study results (studies of anticipatory guidance)</i>		
Child development	No effect (1 non-randomised study, N=371; education target: child development and behaviour)	
Receptive language development	Positive effect (1 RCT, N=135; education target: book sharing)	
Child development	No effect (1 RCT, N=114; group well-child care)	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<i>Single study results (studies of anticipatory guidance)</i>		
Measures of vocal behaviour	Positive effect (1 RCT, N=32; education target: mother-infant relationship)	
Night waking during infancy	Positive effect (1 non-randomised study, N=292; education target: sleep habits)	
Infant sleep habits	Positive effect (1 RCT, N=26; education target: sleep habits)	

<sup>26</sup> green shading indicates results significantly in favour of the intervention

<b>Single study results (studies of 'problem-focused developmental interventions')</b>	
Excessive crying	Positive effect (1 RCT, N=20; counselling vs. diet manipulation)
Excessive crying	Positive effect (2 RCTs, N=60 and N=42; counselling to reduce stimulation)
Excessive crying	Positive effect (1 non-randomised study, N=92; counselling vs. emotional support vs. no treatment)
Excessive crying	No effect (1 RCT, N=38; counselling vs. car ride stimulation vs. reassurance)
Night waking	No effect (1 RCT, N=120; counselling and written information vs. written information)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (studies of anticipatory guidance)</b>	
Utilisation of health services	No effect (1 non-randomised study, N=78; group well-child care)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (studies of anticipatory guidance)</b>	
Mother-infant interaction	No effect (1 non-randomised study, N=83; education target: child developmental stages)
Mothers' interactive behaviour with their infants	Positive effect (1 RCT, N=32; education target: mother-infant relationship)
Mothers' high quality behavioural interaction	Positive effect (1 non-randomised study, N=42; education target: mother-infant relationship)
Mothers' mealtime attitudes and communication	Positive effect (1 RCT, N=59; education target: mother-infant relationship)
Parents' perceptions of infant temperament	Positive effect (1 non-randomised study, N=79; education target: perceptions of infant temperament)
Parents' perceptions of infant temperament	Positive effect (1 RCT, N=602; education target: perceptions of infant temperament)
Mother-child interaction	No effect (1 RCT, N=114; group well-child care)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (studies of anticipatory guidance)</b>	
Stress and parental confidence	Positive effect (1 RCT, N=60; education target: sleep habits)
Maternal depression	No effect (1 non-randomised study, N=50; group well-child care)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (studies of anticipatory guidance)</b>	
Mothers' knowledge of child development	Positive effect (1 non-randomised study, N=371; education target: child development and behaviour)
Discussions of personal issues	Positive effect (1 non-randomised study, N=78; group well-child care)
Discussions of parenting and child behavioural concerns	Positive effect (1 non-randomised study, N=31; group well-child care)
Mothers' knowledge of child development	No effect (1 non-randomised study, N=50; group well-child care)
Maternal sense of competence	No effect (1 RCT, N=213; group well-child care)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (studies of anticipatory guidance)</b>	
Feelings of being supported	Positive effect (1 non-randomised study, N=371; education target: child development and behaviour)
Satisfaction with paediatric care	No effect (1 non-randomised study, N=83; education target: child developmental stages)
Perceived support	No effect (1 non-randomised study, N=50; group well-child care)

<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; N: number; NR: not reported; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

## Interventions for promoting effective parenting

**Table 41: Matrix indicating the studies that were included in the systematic reviews**

	Systematic review	
	Gardner 2006	Mercer 2006
Anderson 1981		✓ (RCT, N=30)
Armstrong 1999 (2000)	✓ (RCT, N=NR)	
Barnard 1988		✓ (RCT, N=147)
Black 1994	✓ (RCT, N=NR)	
Brouse 1988		✓ (quasi-experimental study, N=31)
Bryan 2000		✓ (experimental group self-selected, N=77)
Carson 1984		✓ (RCT, N=69)
Carter-Jessop 1981		✓ (RCT, N=10)
Curry 1979 (1982)		✓ (RCT, N=20)
Davis 1987		✓ (RCT, N=22)
El-Mohandes 2004	✓ (RCT, N=NR)	
Feldman 2002 (2003)	✓ (quasi-experimental, N=NR)	
Flagler 1988		✓ (RCT, N=61)
Furr 1982		✓ (RCT, N=40)
Golas 1986		✓ (RCT, N=46)
Hall 1980		✓ (RCT, N=30)
Harrison 1986		✓ (RCT, N=30)
Heinicke 1999	✓ (RCT, N=NR)	
Jirapaet 2000	✓ (quasi-experimental, N=NR)	
Johnson 2000	✓ (RCT, N=NR)	
Johnston 2004	✓ (quasi-experimental, N=NR)	
Koniak-Griffin 1991		✓ (RCT, N=20)
Koniak-Griffin 1992		✓ (RCT, N=31)
Koniak-Griffin 2000		✓ (RCT, N=121)
Leff 1988		✓ (RCT, N=221)
Leitch 1999	✓ (RCT, N=NR)	
Lieu 2000 (2001)	✓ (RCT, N=NR)	
Meleis 1978		✓ (3 self-selected groups, N=58)
Meyers 1994	✓ (RCT, N=NR)	
Olds 1994	✓ (RCT, N=NR)	
Olds 2002	✓ (RCT, N=NR)	
Percy 2001		✓ (single group, pre-test-post-test, N=20)
Perry 1983		✓ (RCT, N=57)
Petrowski 1981		✓ (RCT, N=40)
Poley-Strobel 1987		✓ (RCT, N=20)
Pridham 2005	✓ (RCT, N=NR)	
Princeton 1986		✓ (RCT, N=36)
Riesch 1984		✓ (RCT, N=137)
Schachman 2004		✓ (RCT, N=91)
Schuler 2002	✓ (RCT, N=NR)	
Shaw 1986		✓ (RCT, N=25)
Steele O'Connor 2003	✓ (RCT, N=NR)	
Sullivan 1984		✓ (RCT, N=99)
Taylor 1998 (1997)	✓ (RCT, N=NR)	
Tessier 1998	✓ (RCT, N=NR)	
Vines 1994	✓ (quasi-experimental, N=NR)	
Wadsby 2001	✓ (quasi-experimental, N=NR)	
Wedland-Carro 1999	✓ (RCT, N=NR)	
White-Traut 1988		✓ (RCT, N=33)
Yang 2004	✓ (quasi-experimental, N=NR)	

**Abbreviations:** N: number; NR: not reported; RCT: randomised controlled trial

**Table 42: Evidence table for Gardner 2006<sup>27</sup>**

<b>Review ID</b>	Gardner 2006	
<b>Search date</b>	Search dates NR (only studies published between 1994 and 2004 were included)	
<b>Review method</b>	Narrative synthesis	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	22 studies (16 RCTs; 6 quasi-experimental studies)	
<b>No. participants in relevant studies</b>	NR	
<b>Location/setting</b>	NR	
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 2/11 ('low' quality)	
<b>Quality of relevant studies</b>	Not assessed/reported (evidence level reported i.e. RCT: II; quasi-experiment: III)	
<b>Review objective</b>	To review the intervention literature related to the promotion of effective mothering, in order to examine the range of interventions and evidence of their usefulness for maternal-child and paediatric nursing practice	
<b>Review eligibility criteria</b>	<u>Participants/interventions</u> : interventions designed to facilitate or strengthen mothering processes and behaviours in adult (age > 20 years) women with newborns of infants less than 24 months of age; <u>other</u> : studies published between 1994 and 2004	
<b>Participant population</b>	Women with newborns or infants	
<b>Intervention</b>	Interventions to promote effective mothering (with a focus on nursing practice): Individual education/counselling and support: 6 studies; group programs: 3 studies; mother-infant contact (skin-to-skin): 2 studies; home visiting by nurses: 6 studies and non-nurses: 3 studies; multi-component programs incorporating several strategies: 2 studies Intervention durations/intensities NR	
<b>Comparator</b>	Not clearly detailed	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Parent-infant relationship</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Single study results</b>		
<b>Individual approach interventions</b>		
<i>Individual education intervention to improve maternal knowledge of infant characteristics and cues to infant state</i>		
Mother-infant interaction (including responsiveness to infant cues, contingent interaction, maternal responsiveness to feeding distress)	Significantly improved in 3 RCTs (only during infancy: day 1 to 3 months postpartum, N=NR)	
<i>Individualised counselling with mothers</i>		
Maternal perceptions, mother-infant interaction	Improvement post intervention (1 quasi-experimental study, N=NR)	
<i>Individualised guided participation intervention</i>		
Mother-infant interaction/feeding competency	Trend towards improvement (1 RCT, N=NR)	

<sup>27</sup> green shading indicates results significantly in favour of the intervention

<b>Group programs</b>	
<i>Group based on empowerment and participatory action research theory for HIV positive, disadvantaged mothers</i>	
Role adaptation	Improved (1 quasi-experimental study, N=NR)
<i>Intensive group program for high social risk mothers</i>	
Maternal-infant bonding	Not improved (1 quasi-experimental study, N=NR)
<b>Mother-infant contact (skin-to-skin)</b>	
Maternal sensitivity to infant cues, frequency of touching and holding, maternal effect during mother-infant interactions	Improved (1 quasi-experimental study, N=NR)
HOME environment ratings 3 months after birth	Higher (1 quasi-experimental study, N=NR)
Perception of infant	Intervention mothers perceived infants as less difference from average babies (1 RCT; 1 quasi-experimental study, N=NR)
<b>Home visiting (non-nurse)</b>	
Parent-child interaction	No effect of lay visiting program (1 RCT, N=NR)
Mother-infant interaction	Improvement with mental health professional visits (1 RCT, N=NR)
HOME environment	No effect with mental health professional visits (1 RCT, N=NR)
<b>Home visiting (nurse)</b>	
Home environment	Highly significant positive effect (large, well-controlled RCT with minimum 20 visits, N=NR)
Home environment	No effect (1 RCT of 1 or 2 visits only, N=NR)
Maternal infant interaction and maternal development	Significant positive effects (1 RCT of visits prenatally through 1 <sup>st</sup> year postpartum, N=NR)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<b>Group programs</b>	
<i>Group based on empowerment and participatory action research theory for HIV positive, disadvantaged mothers</i>	
Coping, quality of life	Improved (1 quasi-experimental study, N=NR)
<i>Intensive group program for high social risk mothers</i>	
Self-esteem and depressive symptoms	Improved, and decreased (1 quasi-experimental study, N=NR)
<i>Group instruction related to well-child care</i>	
Perceived social support or isolation, self-esteem, anxiety or depression	No effect (1 RCT, N=NR)
<b>Mother-infant contact (skin-to-skin)</b>	
Depressive symptoms (as late as 6 months post-intervention)	Decreased (1 quasi-experimental study, N=NR)
<b>Home visiting (non-nurse)</b>	
Maternal self-esteem	No effect of lay visiting program (1 RCT, N=NR)
Maternal depression or anxiety	No effect with mental health professional visits (1 RCT, N=NR)
<b>Home visiting (nurse)</b>	
Mood, stress	Highly significant positive effect (large, well-controlled RCT with minimum 20 visits, N=NR)
Mood	No effect (1 RCT of 1 or 2 visits only, N=NR)
<b>Multicomponent interventions</b>	
<i>Telephone support and facilitation of knowledge about and access to health/social resources and home visits by nurses</i>	
Maternal mood and stress	Improved (1 quasi-experimental, N=NR)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<b>Individual approach interventions</b>	
<i>Individual education intervention oriented towards increasing infant care knowledge</i>	
Knowledge of care and confidence	Overall knowledge did not improve; confidence improved (1 quasi-experimental study, N=NR)
<b>Home visiting (non-nurse)</b>	
Parenting skill, child health promotion	No effect of lay visiting program (1 RCT, N=NR)
Parenting attitudes	No effect of lay visiting program (1 RCT, N=NR)
<b>Home visiting (nurse)</b>	
Child health promotion knowledge	Highly significant positive effect (large, well-controlled RCT with minimum 20 visits, N=NR)
Maternal confidence, knowledge of infant care, breastfeeding	No effect (1 RCT of 1 or 2 visits only, N=NR)



Decreases in substance use, pregnancy rate, economic/employment status	Significant positive effects (1 RCT of visits prenatally through 1 <sup>st</sup> year postpartum, N=NR)
Child discipline strategies	Persisting differences at 3 years post-intervention (1 RCT of visits prenatally through 1 <sup>st</sup> year postpartum, N=NR)
<b>Multicomponent interventions</b>	
<i>Nurse home visits, developmental play and support groups and telephone support</i>	
Maternal skills in infant care	Improved (1 RCT, N=NR)
<i>Telephone support and facilitation of knowledge about and access to health/social resources and home visits by nurses</i>	
Knowledge of infant care and development and breastfeeding	Improved (1 quasi-experimental study, N=NR)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<b>Group programs</b>	
<i>Intensive group program for high social risk mothers</i>	
Frequency of reported child abuse	Decreased (1 quasi-experimental study, N=NR)
<b>Home visiting (non-nurse)</b>	
Abuse risk	No effect of lay visiting program (1 RCT, N=NR)
<b>Home visiting (nurse)</b>	
Abuse risk	Highly significant positive effect (large, well-controlled RCT with minimum 20 visits, N=NR)

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; HOME: Home Observation Measurement of the Environment; N: number; NR: not reported; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

**Table 43: Evidence table for Mercer 2006<sup>28</sup>**

<b>Review ID</b>	Mercer 2006
<b>Search date</b>	Searches conducted in June 2005 (additional search for articles published 1990 to 1995 when none located in electronic searches)
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	28 studies (24 RCTs; 1 quasi-experimental study; 2 studies with 'self-selection'; 1 single group pre-test-post-test)
<b>No. participants in relevant studies</b>	1,622
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 3/11 ('low' quality)
<b>Quality of relevant studies</b>	NR
<b>Review objective</b>	To determine the current state of knowledge of nursing interventions that foster the process of becoming a mother
<b>Review eligibility criteria</b>	<u>Design</u> : experimental, with random assignment to experimental and control groups (with 3 exceptions made); <u>participants/interventions</u> : experimental nursing intervention focused on a facet of maternal behaviour in the process of becoming a mother; intervention occurred during pregnancy or the 1 <sup>st</sup> 4 months following birth; <u>outcomes</u> : studies with a measured maternal outcome (e.g. preparing for the infant or developing attachment to the infant); <u>other</u> : published report; written in English

<sup>28</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

<b>Participant population</b>	Pregnant women or women during the 1 <sup>st</sup> 4 months following birth (predominately studies in primiparous women)
<b>Intervention</b>	Experimental nursing interventions focused on a facet of maternal behaviour in the process of becoming a mother/maternal role attainment; the review authors organised these conceptually into 5 categories: instructions for infant caregiving (5 studies); building awareness of and responsiveness to infant interactive capabilities (11 studies), fostering maternal-infant attachment (6 studies), maternal/social role preparation (3 studies), interactive therapeutic nurse-client relationships (3 studies) Intervention durations/intensities largely NR; where reported, they ranged from 1 hour post-birth (skin-to-skin) to during pregnancy and the 1 <sup>st</sup> year post-birth (Mental Health Model intervention)
<b>Comparator</b>	Various, predominately usual care
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Nursing interventions focused on building awareness of and responsiveness to infant interactive capabilities</i>	
Sensitive, reciprocal mother-infant interactions (during/following feeding)	Positive effect for at-risk populations, including mothers of preterm infants (2 RCTs: listening to audiotape about infant capabilities: N=105; multi-modal infant stimulation 4 times during 1 <sup>st</sup> 2-3 days: N=33) and low-income Black mothers (1 RCT: teaching modelling session on newborn infant behavioural capabilities: N=20)
	No effect for a largely minority group of adolescents from intensive public health nursing home visits (1 RCT, N=121)
Mother-infant interactive skills during the 1 <sup>st</sup> 2 weeks	Increased in 3 RCTs (demonstrations plus information about infants' behavioural capabilities: N=20; pre-testing and 30-min teaching modelling intervention on infant behavioural capabilities: N=40; teaching modelling session on newborn infant behavioural capabilities: N=20)
Short-term positive perceptions of infants	More favourable perceptions at 1 week (not at 1 month) following 2-hour intervention on infant behavioural capabilities (1 RCT, N=46)
<i>Nursing interventions focused on fostering maternal-infant attachment</i>	
Prenatal attachment	Higher among adolescent mothers following 4 weekly classes on fetal/infant behaviours and parenting adjustment (1 RCT, N=20)
Postnatal attachment 2-4 days after birth	Higher among adult mothers following education on fetal palpation (1 RCT, N=10)
Maternal attachment behaviours	No difference following fetal palpation intervention (1 RCT, N=22)
Maternal attachment behaviours	No difference following fetal palpation and massage intervention (1 RCT, N=69)
Maternal attachment behaviours	No difference following skin-to-skin contact intervention at 36 hours or 3 months (1 RCT, N=20)
Positive maternal perceptions of infant at 1 month	Increase following in-home teaching intervention on newborn behavioural characteristics (1 RCT, N=30)

<i>Nursing interventions focused on maternal/social role preparation</i>	
Mothers' responsiveness to and protectiveness of their infants	Positive effect for 2 intervention groups ('role supplementation' intervention (group work on being a parent, and home visits vs. prenatal program and early discharge vs. control) (three self-selected groups, N=58)
Prenatal and postpartum adaptation at 6 weeks following birth	Positive effect for military wives in 4-week childbirth/parenting intervention (1 RCT, N=91)
Maternal sensitivity to infant cues and social-emotional growth fostering at 10.5 months post-birth	Positive effect with program of 3, 2 hour classes on parent-infant interaction and transition to parenthood (experimental group self-selected, N=77)
<i>Nursing interventions focused on interactive therapeutic nurse-client relationships</i>	
Maternal behaviours in infant-feeding and infant teaching situations	Positive effect for mothers with low social support with the mental health model intervention vs. information resource model (1 RCT, N=147)
Favourable interactive behaviours	Positive effect for adolescent mothers with feedback from videotaped interaction and discussion (1 RCT, N=31)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Nursing interventions focused on instructions for infant caregiving</i>	
Mothers' anxiety	Listening to telephone audiotapes about infant care, feeding, health and safety in 3 <sup>rd</sup> trimester increased anxiety; intervention women less confident 1-3 days after birth in ability to cope with parenthood; and had less satisfaction with mother role and greater difficulty adjusting at 6 weeks (1 RCT, N=25)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Nursing interventions focused on instructions for infant caregiving</i>	
Maternal knowledge of infant care up to 6 weeks	Overall, audiotaped and videotaped instruction without nurse input associated with no difference (3 RCTs, N=40, N=25, N=221)
Mothers knowledge	Greater knowledge following intervention with programmed instruction booklets and slides on care and newborn characteristics (women low in knowledge on pre-test benefited most) (1 RCT, N=99)
Breastfeeding	At 8 weeks following birth, assessment of whether mothers were breastfeeding favoured a deliberative nursing group (1 RCT, N=36)
<i>Nursing interventions focused on building awareness of and responsiveness to infant interactive capabilities</i>	
Knowledge of infant's behavioural capabilities at 1 month	Greater knowledge following 2 hour intervention on infant behavioural capabilities (1 RCT, N=46)
Maternal confidence up to 1 month	No increase in 2 RCTs (2-hour intervention of infant behavioural capabilities: N=46; teaching modelling session on newborn infant capabilities: N=20)
Perceived maternal competence at 4-6 weeks following birth	No increase with 20-min teaching modelling session on infant behavioural capabilities (1 RCT, N=61)
Maternal role adjustment at 3 weeks following birth	No increase with teaching intervention with mother's infant on infant behavioural capabilities (1 quasi-experimental study, N=31)
<i>Nursing interventions focused on maternal/social role preparation</i>	
Resilience 6 weeks following birth	No effect for 2 intervention groups ('role supplementation' intervention (group work on being a parent, and home visits vs. prenatal program and early discharge vs. control) (three self-selected groups, N=58)
Resilience 6 weeks following birth	No effect for military wives in 4-week childbirth/parenting intervention (1 RCT, N=91)
<i>Nursing interventions focused on interactive therapeutic nurse-client relationships</i>	
Knowledge/skills aspect of perceived parenting competence	Gains following completion of course on child development for adolescents (pre-test-post-test, N=19)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Nursing interventions focused on instructions for infant caregiving</i>	
Mothers preference	Mothers preferred live classes (vs. viewed on closed-circuit television) (1 RCT, N=221)

Family relationships	
Outcome measure used in the review	Results reported in the review
NR	NR
Systems outcomes	
Outcome measure used in the review	Results reported in the review
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; N: number; NR: not reported; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

## Interventions for parents of infants at risk of developmental delays

**Table 44: Matrix indicating the studies that were included in the systematic reviews**

	Systematic review			
	Kemp 2014	Kong 2013	Wallace 2010*	
STUDY ID	Achenbach 1990		✓ (RCT, N=93)	
	Achenbach 1993		✓ (RCT, N=91)	
	Avon Premature Infant Project 1998		✓ (RCT, N=328)	
	Bao 1999		✓ (RCT, N=156)	
	Baggett 2010		✓ (group-based experimental design, N=NR)	
	Barrera 1990		✓ (RCT, N=83)	
	Blauw-Hospers 2011	✓ (RCT, N=21 in intervention group)		
	Breitmayer 1986		✓ (RCT, N=80)	
	Brooks-Gunn 1992		✓ (RCT, N=985)	
	Bustan 1984		✓ (nRCT, N=16)	
	Connolly 1980		✓ (nRCT, N=73)	
	Connolly 1993		✓ (nRCT, N=20)	
	Deutscher 2006		✓ (quasi-experimental design, N=NR)	
	Gianni 2006		✓ (RCT, N=36)	
	IHDP 1990		✓ (RCT, N=985)	
	Johnson 2005		✓ (RCT, N=187)	
	Kaaresen 2008		✓ (RCT, N=136)	
	Kang 1995		✓ (partial RCT, N=327)	
	Kleberg 2002		✓ (RCT, N=20)	
	Landry 2006		✓ (group-based experimental design, N=NR)	
	Landry 2012	✓ (RCT, N=182 (N=86 VLBW, N=96 term))		
	Melynk 2001		✓ (RCT, N=42)	
	Newnham 2009		✓ (RCT, N=68)	
	Olafsen 2006		✓ (RCT, N=215)	
	Piper 1980		✓ (nRCT, N=37)	
	Ramey 1984		✓ (RCT, N=107)	
	Ramey 1976		✓ (RCT, N=47)	
	Rauh 1988		✓ (RCT, N=82)	
	Resnick 1987		✓ (RCT, N=255)	
	Sajaniemi 1987		✓ (RCT, N=100)	
	Scarr-Salapatek 1973		✓ (RCT, N=30)	
	Seifer 1991		✓ (quasi-experimental design, N=NR)	✓ (nRCT, N=40)
Sloper 1986			✓ (nRCT, N=24)	
Teti 2009			✓ (RCT, N=173)	
van den Boom 1994		✓ (group-based experimental design, N=NR)		
van der Pal 2008			✓ (partial RCT, N=168)	
Zahr 1992			✓ (partial RCT, N=41)	
Zahr 2000			✓ (RCT, N=123)	

\*Note: in Wallace 2010, some articles were 'follow up studies'; therefore, some participants are included > 1 study

**Abbreviations:** IHDP: Infant Health and Development Program; N: number; NR: not reported; nRCT: non-randomised controlled trial; RCT: randomised controlled trial; VLBW: very low birthweight

**Table 45: Evidence table for Kemp 2014<sup>29</sup>**

<b>Review ID</b>	Kemp 2014	
<b>Search date</b>	2000 to 2013 (inclusion criteria later restricted to studies from 2011 to 2013)	
<b>Review method</b>	Narrative synthesis	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their designs</b>	8 included studies; 2 relevant studies (RCTs)	
<b>No. participants in relevant studies</b>	Not clear, > 203 (1 trial, N=21 families in intervention group; 1 trial: N=86 VLBW and N=96 term infants)	
<b>Location/setting</b>	NR (race of parents reported in 1 trial: mix of African American, Hispanic, Caucasian)	
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 1/11 ('low' quality)	
<b>Quality of relevant studies</b>	Not assessed/reported	
<b>Review objective</b>	To synthesise intervention studies using coaching with parents in early intervention, with a focus on: definitions and descriptions of coaching; characteristics of families and coaches; parameters such as: settings, contexts, dosage; child and family outcomes	
<b>Review eligibility criteria</b>	<u>1<sup>st</sup> level criteria:</u> studies published after 2000 in peer-reviewed journals; using the term 'coaching'; conducted with parents/caregivers of infants and toddlers with disabilities, developmental delay (or high risk for); majority of participants between ages of birth to 3 years; focused on sessions delivered at least partially in the context of home visits; reflecting at least 1 early intervention discipline; <u>2<sup>nd</sup> level criteria:</u> empirical research; child and/or family outcomes; <u>3<sup>rd</sup> level criterion:</u> published between 2011 and 2013	
<b>Participant population</b>	Parents with infants at high risk for developmental delay or cerebral palsy (1 RCT); or with VLBW or term infants with established risk (1 RCT)	
<b>Intervention</b>	Coaching sessions provided in the home: 1 RCT: 3-6 months, 2 times a week for 1 hour ('relationship-directed process'); 1 RCT: 11 weekly 1.5 hour visits ('intervenor-directed protocol')	
<b>Comparator</b>	No coaching	
<b>Outcome domains</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Single study results</b>		
'Child outcomes'	Infants produced motor behaviours independently and continued activities; infants showed increased developmental outcomes (1 RCT, N=21 families in intervention group)	
'Child outcomes'	Increased book reading skills; positive behaviour responses such as wanting to be read to; greater ability to coordinate use of gestures with verbal behaviours (1 RCT, N=86 VLBW and 96 term infants)	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Parent-infant relationship</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Parent/caregiver psychosocial wellbeing</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

<sup>29</sup> green shading indicates results significantly in favour of the intervention

Parent/caregiver knowledge, practices and behaviours	
Outcome measure used in the review	Results reported in the review
<b>Single study results</b>	
'Parent outcomes'	Families engaged in coaching sessions; families incorporated educational actions into daily routine (1 RCT, N=21 families in intervention group)
'Parent outcomes'	Maternal shared book reading behaviour significantly improved (1 RCT, N=86 VLBW and 96 term infants)
Parent/caregiver views of intervention	
Outcome measure used in the review	Results reported in the review
NR	NR
Family relationships	
Outcome measure used in the review	Results reported in the review
NR	NR
Systems outcomes	
Outcome measure used in the review	Results reported in the review
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; N: number; NR: not reported, RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; VLBW: very low birth weight

**Table 46: Evidence table for Kong 2013<sup>30</sup>**

<b>Review ID</b>	Kong 2013
<b>Search date</b>	1990 to 2010
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	26 included studies (31 articles); 5 relevant studies (3 experimental; 2 quasi-experimental)
<b>No. participants in relevant studies</b>	NR, "The sample size for each study varied from 11 to 264 with an average of 60 (SD = 59)"
<b>Location/setting</b>	Countries NR; 18/26 included studies reported race/ethnicity: 51% of children were Caucasian; 3/26 studies included children whose primary language was not English
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 3/11 ('low' quality)
<b>Quality of relevant studies</b>	NR
<b>Review objective</b>	To synthesise available studies regarding responsive interaction intervention for children with or at risk for developmental delay (with a focus on: characteristics of the participants; features of the intervention; measurement of treatment fidelity; overall effectiveness of the intervention; measurement of maintenance and generalisation of intervention effects; social validity or level of acceptability)
<b>Review eligibility criteria</b>	<u>Designs</u> : quasi-experimental or experimental group design; <u>participants</u> : child participants between birth and age 6 when they began the study; identified with disabilities, delays, or at risk of delays; <u>interventions</u> : responsive interaction interventions, including responsiveness components as primary features of the intervention; <u>outcomes</u> : including a measure of child's outcomes as a results of adult's responsiveness; <u>other</u> : published in peer-reviewed journal
<b>Participant population</b>	Children at risk for, or with, developmental delays (4 studies: environmentally at risk; 1 study: developmental disabilities)
<b>Intervention</b>	Responsive interaction interventions; intervention intensities summarised (across 26 included studies, not the 5 relevant studies) – with lengths of individual sessions ranging from 20 to 120 minutes; total number of sessions ranging from 6 to 108; and frequency of sessions varying from monthly to 5 times per week; with total durations ranging from 6 to 27 weeks
<b>Comparator</b>	NR (assumed usual care)

<sup>30</sup> green shading indicates results significantly in favour of the intervention

<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Social-communication behaviours (time of measures NR)	ES: 0.10 (1 experimental study, N=NR) d: 0.39-0.50 (1 experimental design study, N=NR)
Emotional behaviours (time of measures NR)	d: 0.91(1 experimental study, N=NR) Significant positive outcome (1 experimental and 1 quasi-experimental study, N=NR)
Cognitive behaviours (time of measures NR)	d: 0.47 (1 experimental study, N=NR) Significant positive outcome (1 experimental and 2 quasi-experimental studies, N=NR)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Parental responsive behaviours	Significant positive outcome (3 experimental and 2 quasi-experimental studies, N=NR)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Parental emotional behaviours	ES: 0.05 (1 experimental study, N=NR) d: 0.22-0.83 (1 experimental study, N=NR)
Parental social/verbal behaviours	ES: 0.05 (1 experimental study, N=NR) d: 0.53-0.58 (1 quasi-experimental study, N=NR) d: 0.36-0.93 (1 experimental study, N=NR)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; ES/d: effect size; N: number; NR: not reported; ROBIS: Risk of Bias in Systematic Reviews; SD: standard deviation



**Table 47: Evidence table for Wallace 2010<sup>31</sup>**

<b>Review ID</b>	Wallace 2010	
<b>Search date</b>	Search dates for databases NR; texts hand-searched were published between 1987 and 2007; included studies were published between 1973 and 2009	
<b>Review method</b>	Narrative synthesis and ES analysis	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	32 studies (23 studies randomised subjects (RCTs), 6 did not randomise subjects (nRCT), 3 used 'partial randomisation procedures' (partial RCT))	
<b>No. participants in relevant studies</b>	5,168 (however some participants counted twice, with follow up studies included as separate studies)	
<b>Location/setting</b>	NR	
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 4/11 ('moderate' quality)	
<b>Quality of relevant studies</b>	Mixed: reported as 'high quality' overall 6/32 trials classified as 'Type 1' (highest classification), 26/32 trials classified as 'Type 2' (" <i>a study missing only one of randomization, use of blind assessors, inclusion and exclusion criteria, a standard diagnostic battery, treatment fidelity, or a treatment manual</i> ")	
<b>Review objective</b>	To conduct a systematic literature search and ES analysis of efficacious interventions for infants and toddlers with developmental disorders (born prematurely, with developmental impairments, or high risk for developmental impairments) to assist in building autism spectrum disorder interventions	
<b>Review eligibility criteria</b>	<u>Designs</u> : well-designed, controlled intervention efficacy study; <u>participants</u> : infants/toddlers with developmental impairments or at risk of such impairments (prematurity; developmental delay including down syndrome; and risk of intellectual disability); birth to 3 years; <u>outcomes</u> : sufficient data to calculate ES; <u>other</u> : only papers of Type 1 and Type 2 studies (see above) were included in analyses; only articles published in peer-reviewed journals were included	
<b>Participant population</b>	Infants at risk for autism, including due to prematurity (24 trials), developmental delay (5 trials) or risk of intellectual disability (3 trials)	
<b>Intervention</b>	Variety of interventions to improve developmental outcomes; where reported, intervention durations/intensities varied from: 3 sessions in NICU; to 6-12 weeks of age to 5 years, five days per week	
<b>Comparator</b>	Usual care (assumed)	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Pooled results</b>		
Primary outcome: corrected ES (for studies using psychometrically sound, standardised measures of overall developmental ability e.g. <i>Bayley Scales of Infant Development, Stanford-Binet Intelligence Scale, Griffiths Mental Development Scales, McCarty Scales of Children's abilities, Kaufman Assessment Battery for Children, Cattell Infant Intelligence Scale, British Ability Scales</i> )	Infants with developmental delays: mean ES: 0.44 (range of ES: -0.11 to 0.93) (5 nRCTs, N=194) (at 15 months to 16 years)	
	Infants at risk for intellectual disability: mean ES: 1.26 (range of ES: 0.24 to 1.38) (3 RCTs, N=234) (at 18-54 months))	
	Premature infants: mean ES: 0.44 (11 RCTs, 2 partial RCTs, N=2,508) (range of ES for 'Type 1' studies: 0.20 to 0.79) (3 RCTs, N=260) (range of ES for 'Type 2' studies: -0.65 to 1.39) (8 RCTs, 2 partial RCTs, N=2,248) (at 3-60 months)	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

<sup>31</sup> green shading indicates results significantly in favour of the intervention

<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?*</b>	
Overall developmental ability; infants with developmental delays	<ul style="list-style-type: none"> <li>Professionals (Connolly 1980; Connolly 1993)</li> <li>NR (Seifer 1991; Piper 1980; Sloper 1986)</li> </ul>
Overall developmental ability; infants at risk for intellectual disability	<ul style="list-style-type: none"> <li>NR (Breitmayer 1986; Ramey 1984; Ramey 1976)</li> </ul>
Overall developmental ability; preterm infants	<ul style="list-style-type: none"> <li>Intensive care unit staff (Bustan 1984)</li> <li>Neonatal intensive care unit nurse (Rauh 1988; Achenach 1990; Achenbach 1993)</li> <li>Nurses (Avon 1998; Johnson 2005; Kang)</li> <li>Occupational therapist (Sajaniemi 2001)</li> <li>Public health nurses (Zahr 2000 extended visit; Zahr 2000 short visit)</li> <li>Trained developmental specialist (Van der Pal 2008)</li> <li>"Interventionists" (IDHP 1990; Brooks-Gunn 1990)</li> <li>NR (Bao 1999; Barrera 1990; Gianni 2006; Kaaresen 2007; Kleberg 2002; Melynk 2001; Newnham 2009; Olafson 2006; Resnick 1987; Scarr 1973; Teti 2009; Zahr 1992)</li> </ul>
<b>Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?*</b>	
Overall developmental ability; infants with developmental delays	<ul style="list-style-type: none"> <li>"center-based" (Piper 1980)</li> <li>University parenting program for use at home (Connolly 1980; Connolly 1993)</li> <li>NR (Seifer 1991; Sloper 1986)</li> </ul>
Overall developmental ability; infants at risk for intellectual disability	<ul style="list-style-type: none"> <li>Day care (Breitmayer 1986; Ramey 1984; Ramey 1976)</li> </ul>
Overall developmental ability; preterm infants	<ul style="list-style-type: none"> <li>Home visits (Barrera 1990; Sajaniemi 2001; Zahr 2000)</li> <li>Home visits and day-care (IDHP 1990; Brooks-Gunn 1992)</li> <li>Hospital (?) then home visits (Kaaresen 2008)</li> <li>Hospital and home visits (Kang 1995; Melynyk 2001; Olafsen 2006; Rauh 1988; Achenbach 1990; Achenbach 1990; Resnick 1987; Scarr 1973)</li> <li>Hospital (Kleberg 2002; van der Pal 2008)</li> <li>Intensive care unit (Bustan 1984)</li> <li>Group parenting sessions (Gianni 2006)</li> <li>NR (Avon 1998; Johnson 2005; Bao 1999; Newnham 2009; Teti 2009; Zahr 1992)</li> </ul>
<b>To whom could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?*</b>	
Overall developmental ability; infants with developmental delays	<ul style="list-style-type: none"> <li>Parents of children diagnosed with Down syndrome (Connolly 1980; Connolly 1993)</li> <li>Parents (Piper 1980; Sloper 1986)</li> </ul>

	<ul style="list-style-type: none"> <li>Mothers (Seifer 1991)</li> </ul>
Overall developmental ability; infants at risk for intellectual disability	<ul style="list-style-type: none"> <li>Infant/child (Breitmayer 1986; Ramey 1984; Ramey 1976)</li> </ul>
Overall developmental ability; preterm infants	<ul style="list-style-type: none"> <li>Parents (Avon 1998; Johnson 2005; Bao 1999a; Barrera 1990; Kleberg 2002; Melnyk 2001; Olafsen 2006; Resnick 1987; Sajaniemi 2001; Teti 2009; van der Pal 2008)</li> <li>Parents (primarily African-American mothers) (IHDP 1990; Brooks-Gunn 1992)</li> <li>Mothers (Bustan 1984; Kaaresen 2008; Kang 1995; Newnham 2009; Rauh 1988; Achenbach 1990; Achenbach 1993; Zahr 1992)</li> <li>Low income mothers from minority families (Zahr 2000)</li> <li>NR (Scarr 1973)</li> </ul>
<b>When could be the best time for the intervention, program, or message delivery to occur?*</b>	
Overall developmental ability; infants with developmental delays	<ul style="list-style-type: none"> <li>10 x 1 hour sessions, 1 hour parent group, 0.5 hour feeding skill development, 10 weeks of individualised programs (Connolly 1980; Connolly 1993)</li> <li>Twice weekly, 1 hour (Piper 1980)</li> <li>6 sessions (Seifer 1991)</li> <li>Daily exercises (parents asked to practice 5 times a day) (Sloper 1986)</li> </ul>
Overall developmental ability; infants at risk for intellectual disability	<ul style="list-style-type: none"> <li>Infants started between 6 weeks and 3 months of age (each weekday 8-10 hours for 50 weeks a year) up to 3<sup>rd</sup> birthday (or up to school entry/5 years) (Breitmayer 1986; Ramey 1984; Ramey 1976)</li> </ul>
Overall developmental ability; preterm infants	<ul style="list-style-type: none"> <li>Weekly from hospital discharge for a few months, 2-4 times weekly for the next year, then monthly to 2 years of age (Avon 1998; Johnson 2005)</li> <li>Monthly instruction for the 1<sup>st</sup> year, then every other month for the 2<sup>nd</sup> year; meetings of at least 30 minutes; occasional parent education (small groups) (Bao 1999)</li> <li>12 to 28 1-2 hour visits (Barrera 1990)</li> <li>3 sessions of discussion with intensive care unit staff (Bustan 1984)</li> <li>From 3-12 months of age, 1.5 hours group sessions twice monthly (Gianni 2006)</li> <li>Home visits for 3 years, monthly parent group meetings, case management (IHDP 1990; Brookes-Gunn 1992)</li> <li>1 hour sessions daily for a week, then 4 home visits 3, 14, 30 and 90 days after hospital discharge (Kaaresen 2008)</li> <li>9 visits across 5 months (Kang 1995)</li> <li>Began 2-4 days after birth up to 1 week after discharge from the neonatal intensive care unit (Melnyk 2001)</li> <li>9 sessions across 3 months (Newnham 2009)</li> <li>Daily 1 hour sessions for 7 days, and 4 1-hour home visits (Olafsen 2006)</li> <li>11 1 hour sessions over 3 months (7 in hospital, 4 in home) (Rauh 1988; Achenbach 1990; Achenbach 1993)</li> <li>1<sup>st</sup> 2 years of life (Resnick 1987)</li> <li>Weekly 1 hour sessions from 6-12 months of age (Sajaniemi 2001)</li> <li>During 6 weeks in neonatal intensive care unit, weekly home visits until 12 months of age (Scarr 1973)</li> <li>8 sessions over 20 weeks (Teti 2009)</li> <li>19 visits over 12 months (Zahr 2000; extended visits)</li> <li>11 visits over 4 months (Zahr 2000; short visits)</li> <li>Mean 3.6 sessions of 60-90 minutes each (Zahr 1992)</li> <li>NR (Kleberg 2002; van der Pal 2008)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?*</b>	
Overall developmental ability; infants with developmental delays	<ul style="list-style-type: none"> <li>Professionals taught parents developmental interventions for individualised home use stimulation programs (Connolly 1980; Connolly 1993)</li> <li>Activities designed to encourage normal development demonstrated to parent, and written instructions sent home (Piper 1980)</li> <li>Interaction coaching; mothers taught about overstimulation (Seifer</li> </ul>

	<ul style="list-style-type: none"> <li>1991)</li> <li>Parents were given daily exercises to develop object permanence, attention span and imitation (Sloper 1986)</li> </ul>
Overall developmental ability; infants at risk for intellectual disability	<ul style="list-style-type: none"> <li>Direct educational programming through day-care with particular emphasis on language (Breitmayer 1986)</li> <li>Prevention-oriented program delivered in a day-care setting covering language, motor, social and cognitive items and standard preschool curricula with emphasis on language after age three (Ramey 1984)</li> <li>Day-care program designed to prevent developmental retardation, curriculum individualised with a focus on perception and cognition, language and social and motor development (Ramey 1976)</li> </ul>
Overall developmental ability; preterm infants	<ul style="list-style-type: none"> <li>Developmental education consisting of child development activities (Avon 1998; Johnson 2005)</li> <li>Didactic parent training on development and early intervention (Bao 1999)</li> <li>Specific activities designed to encourage infants' development in cognition, communication, fine and gross motor, socio-emotional and self-help; improve parent-infant interaction (Barrera 1990)</li> <li>Discussion regarding mother's feelings and information about prematurity (Bustan 1984)</li> <li>Program focusing on mother's grief/guilt and mother-infant interaction (Gianni 2006)</li> <li>Cognitive stimulation curriculum individualised; problem solving (IHDP 1990; Brooks-Gunn 1992)</li> <li>Emphasis on transactional nature of development (Kaarensen 2008)</li> <li>Promotion of infant behavioural responsiveness and interaction with mothers; promoting parental adaption to preterm infants (Kang 1995)</li> <li>Focus on supporting maternal care, following mother's lead in terms of emphasis and pace (Rauh 1988; Achenbach 1990; Achenbach 1993)</li> <li>Developmental interventions, counselling and parent education (Resnick 1987)</li> <li>Promoting sensorimotor development, play and social-emotional development by promoting parent-infant relationship (Sajaniemi 2001)</li> <li>Visual, tactile and kinaesthetic stimulation (Scarr 1973)</li> <li>Psychoeducational video, NBAS and massage (Teti 2009)</li> <li>NIDCAP guidance (van der Pal 2008)</li> <li>Mothers taught to identify cues from infants; infant care; support for mothers (Zahr 2000)</li> <li>Mothers taught to identify cues from infants (Zahr 1992)</li> <li>NR (Kleberg 2002; Melnyk 2001; Newnham 2009; Olafsen 2006)</li> </ul>
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
Overall developmental ability; preterm infants	The lack of effect seen in Zahr 2000 may have been due in part to cultural differences, namely the practice of providing community support for infant development
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

\*32 relevant studies: infants at risk for autism, including due to prematurity (24), developmental delay (5) or risk of intellectual disability (3); only 2 trials showed non-significant results, thus characteristics above are not analysed according to significance/non-significance

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; ES: effect size; N: number; NR: not reported; nRCT: non-randomised controlled trial; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

## Interventions for parents of preterm and low birthweight infants

**Table 48: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review				
		Brett 2011	Evans 2014	Goyal 2013	Spittle 2012	Vanderveen 2009
STUDY ID	Affleck 1989			✓ (RCT, N=100)		
	Als 1994					✓ (RCT, N=38)
	Als 2003, 2004	✓ (RCT, N=76)				✓ (RCT, N=33)
	APIP 1998 (Johnson 2005)				✓ (RCT, N=309)	✓ (RCT, N=328)
	Ariagno 1997					✓ (RCT, N=28)
	Bao 1999				✓(qRCT, N=103)	✓ (RCT, N=103)
	Barrera 1986, 1990, 1991	✓ (RCT, N=80)		✓ (RCT, N=83)	✓ (RCT, N=80)	✓ (RCT, N=59)
	Beckwith 1988			✓ (RCT, N=92)		
	Brisch 2003		✓ (RCT, N=87)			
	Brooten 1986 (Damato 1993)			✓ (RCT, N=79)		✓ (RCT, N=79)
	Brown 1980					✓ (RCT, N=67)
	Brown 1994	✓ (quasi-experimental, N=18)				
	Browne 2005	✓ (RCT, N=84)	✓(qRCT, N=84)			
	Bustan 1984		✓(qRCT, N=16)			
	Byers 2003	✓ (cohort, N=37)				
	Byers 2006	✓ (cohort, N=114)				
	Cameron 2005				✓ (RCT, N=72)	
	Casiro 1993			✓ (RCT, N=100)		✓ (RCT, N=100)
	Charpak 1997, 2001 (Tessier 1998)	✓ (RCT, N=492)				✓ (RCT, N=746)
	Cho 2013		✓(qRCT, N=66)			
	Cobiella 1990	✓ (RCT, N=30)				
	Feldman 2002	✓ (cohort, N=146)				
	Ferber 2004	✓ (RCT, N=55)				
	Field 1980, 1982			✓ (RCT, N=60)	✓ (RCT, N=60)	
	Finello 1998	✓ (cohort, N=81)		✓ (RCT, N=81)		
	Furuno 1985 (O'Reilly 1986)			✓ (RCT, N=100)		
	Gianni 2006				✓ (RCT, N=38)	✓ (RCT, N=36)
	Gillette 1991					✓ (RCT, N=38)
	Glazebrook 2007	✓ (RCT, N=210)	✓(qRCT, N=307)			
	Goodman 1985 (Rothberg 1991)				✓(qRCT, N=107)	✓ (qRCT, N=80)
Gray 2000	✓ (RCT, N=51)					
Hall 2002	✓ (RCT, N=60)					
Hendson 2005					✓ (RCT, N=120)	

Huckaby 1999	✓ (RCT, N=40)				
IHDP 1990 (Berlin 1998; Blair 1995; Brooks-Gunn 1992; Brooks-Gunn 1993; Brooks-Gunn 1994; Casey 1994; Casey 2009; Hill 2003; Hollomon 1998; Liaw 1995; McCarton 1997; McCarton 1998; McCormick 1993; McCormick 1998; McCormick 2006; Ramey 1992; Spiker 1993)	✓ (RCT, N=683)		✓ (RCT, N=985)	✓ (RCT, N=985)	✓ (RCT, N=985)
Johnson 2009				✓ (cRCT, N=233)	
Jotzo 2005	✓ (cohort, N=50)				
Kaaresen 2006, 2008 (Nordhov 2010)	✓ (RCT, N=215)	✓ (RCT, N=140)		✓ (RCT, N=146)	
Kang 1995		✓ (qRCT, N=327)	✓ (RCT, N=327)		
Ke 2004					✓ (RCT, N=62)
Klein 1987 (Hanev 1993): MICP			✓ (quasi-experimental, N=45)		
Koh 2007	✓ (RCT, N=186)				
Koldewijn 2009, 2010 (Meijssen 2010; Meijssen 2011a; Meijssen 2011b; Verkerk 2001)		✓ (RCT, N=176)		✓ (RCT, N=176)	
Kurz 2002	✓ (cohort, N=160)				
Meijssen 2011		✓ (RCT, N=78)			
Lai 2006	✓ (RCT, N=30)				
Lekskulchai 2001				✓ (RCT, N=84)	
Leonard 1989	✓ (cohort, N=102)				
Lindsay 1993	✓ (cohort, N=NR)				
Melnyk 2001				✓ (qRCT, N=55)	✓ (RCT, N=42)
Melnyk 2006	✓ (RCT, N=351)	✓ (RCT, N=260)			
Meyer 1994	✓ (RCT, N=68)	✓ (RCT, N=34)			
Nelson 2001				✓ (RCT, N=37)	✓ (RCT, N=37)
Neu 2010		✓ (RCT, N=87)	✓ (RCT, N=87)		
Newnham 2009		✓ (RCT, N=68)			
Nurcombe 1984 (Achenbach 1990; Achenbach 1993; Rauh 1988; Rauh 1990)	✓ (RCT, N=73)		✓ (RCT, N=119)	✓ (RCT, N=78)	✓ (RCT, N=53)
Ohgi 2004				✓ (RCT, N=24)	✓ (RCT, N=24)
Ortenstrand 2001	✓ (cohort, N=75)				
Parker-Loewen 1987	✓ (RCT, N=70)	✓ (RCT, N=35)			
Penticuff 2005	✓ (cohort, N=154)				
Piecuch 1983	✓ (cohort,				

		N=34)				
Preyde 2003	✓ (cohort, N=60)					
Rauh 1990	✓ (cohort, N=81)					
Ravn 2011		✓ (RCT, N=118)				
Resnick 1984, 1987, 1988, 1990, 1993			✓ (RCT, N=221)		✓ (RCT, N=255)	
Resnick 1988	✓ (cohort, N=41)			✓ (qRCT, N=41)	✓ (RCT, N=41)	
Rice 1979				✓ (RCT, N=30)		
Ross 1984	✓ (cohort, N=84)		✓ (matched cohort study, N=84)			
Sajaniemi 2001 (Salokorpi 1998; Salokorpi 2002)				✓ (RCT, N=126)	✓ (RCT, N=100)	
Schroeder 2006		✓ (RCT, N=16)				
Spittle 2009, 2010				✓ (RCT, N=120)		
Teti 2009			✓ (RCT, N=173)			
Van der Pal 2007	✓ (RCT, N=178)					
Westrup 2000, 2002, 2004 (Kleberg 2002)					✓ (RCT, N=25)	
Widmayer 1981					✓ (RCT, N=30)	
Yigit 2002				✓ (RCT, N=196)		
Zahr 1992		✓ (qRCT, N=41)				
Zahr 2000			✓ (qRCT, N=123)			

**Abbreviations:** cRCT: cluster randomised controlled trial; IHDP: Infant Health and Development Program; MICP: Mother-Infant Communication Project; N: number; NR: not reported; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial

**Table 49: Evidence table for Brett 2011<sup>32</sup>**

<b>Review ID</b>	Brett 2011
<b>Search date</b>	January 1980 to October 2006 (updated search in 2009)
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their designs</b>	35 relevant studies (19 RCTs; 15 cohort studies; 1 quasi-experimental study)
<b>No. participants in relevant studies</b>	4,269 in 34 of the 35 relevant studies; N=NR for 1 study
<b>Location/setting</b>	Australia: 1 study; Austria: 1 study; Canada: 4 studies; Colombia: 1 study; German: 1 study; Israel: 2 studies; Netherlands: 1 study; Sweden: 1 study; Taiwan: 1 study; UK: 1 study; Unclear: 1 study; USA: 20 studies
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 7/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Quality (SIGN): RCTs: 2 studies = 1++; 12 studies = 1+; 5 studies = 1- Cohort/quasi-experimental studies: 2 studies = 2++; 8 studies = 2+; 6 studies = 2-
<b>Review objective</b>	To identify and map out effective interventions for communicating with, supporting and providing information to parents of preterm infants
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs, cohort studies, quasi-experimental studies, case-control studies, cross-sectional studies, case series, case reports or qualitative studies; <u>participants/interventions/outcomes</u> : studies with parent-reported outcomes related to information, communication and/or support for parents of preterm infants prior to the birth, during care at the NICU and after going home with their preterm infant; <u>other</u> : study relevant to developed countries; passed quality assessment; English language
<b>Participant population</b>	Parents of preterm infant ( $\leq$ 36 weeks gestation)
<b>Intervention</b>	Individualised developmental and behavioural care programs (e.g. COPE, NIDCAP, MITP); breastfeeding, kangaroo care and infant massage; support forums for parents; alleviation of parental stress; preparing parents for seeing their infant for the 1 <sup>st</sup> time; communication and information sharing; discharge planning; and home support services; intervention durations/intensities predominately NR
<b>Comparator</b>	Not clearly reported (various)
<b>Outcome domains</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Perception of infant temperament	Significantly improved maternal perception of infant temperament with MITP (1 cohort study, N=81) at 6 months
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
Cognitive development	Bayley MDI was significantly improved with kangaroo care ( $P<0.01$ ) (1 cohort study, N=146) at 6 months corrected age
Motor development	Bayley PDI was significantly improved with kangaroo care ( $P<0.05$ ) (1 cohort study, N=146) at 6 months corrected age
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results</i>	
NIDCAP infant behaviour	No significant differences seen in NIDCAP behaviour for incubator co-bedding of multiples (1 cohort study, N=37)

<sup>32</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results



<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
HOME inventory	<p>Mothers in the intervention group had significantly better scores for maternal responsiveness (<math>P&lt;0.001</math>); maternal involvement (<math>P&lt;0.05</math>) (1 RCT, N=80) at 4 and 16 months</p> <p>Kangaroo care mothers and fathers provided a better HOME environment (<math>P&lt;0.01</math> and <math>&lt;0.05</math> respectively) (1 cohort study, N=146) at 37 weeks</p> <p>No significant difference seen with education, support and optional home follow up (1 RCT, N=210) at discharge or 3 months post-discharge</p> <p>Significant improvements seen with home support (1 cohort study, N=81) at 1 month (<math>P&lt;0.001</math>), 6 months (<math>P=0.003</math>), and 12 months (<math>P=0.005</math>)</p> <p>Significant improvements seen with home education (<math>P&lt;0.001</math>) (1 cohort study, N=84)</p>
Sensitivity	<p>Greater sensitive interaction with preterm baby seen in the intervention group (with demonstration of preterm baby cues: Nursing Child Assessment Scale) than controls (<math>P&lt;0.05</math>) (1 RCT, N=84) at 1 month after discharge</p> <p>Significantly better with kangaroo care (<math>P=0.05</math>) (1 RCT, N=492) while in neonatal unit</p> <p>Maternal sensitivity significantly better with kangaroo care (<math>P&lt;0.05</math>) (1 cohort study, N=146) at 6 months corrected age</p> <p>No significant difference in maternal sensitivity was seen between massage and control groups (1 RCT, N=55) at 3 months</p> <p>No significant difference seen for coaching to encourage sensitive response (1 RCT, N=70)</p>
Interactions	<p>Mothers of massaged infants were less intrusive (<math>P&lt;0.02</math>) and interactions were more reciprocal (<math>P&lt;0.01</math>) (1 RCT, N=55) at 3 months</p> <p>More positive interactions in the kangaroo care group (mothers showed more positive affect, touch, adaptation to infant cues, infants more alert, less gaze aversion) (1 cohort study, N=146) at 37 weeks</p> <p>Parent-child positive verbal scores were significantly increased (<math>P=0.02</math>) improved and negative verbal scores decreased (<math>P=0.03</math>) with a home education intervention (1 cohort study, N=81) at 6 and 12 months</p>
Bonding scores	Mothers given a photo of their baby on the neonatal unit had higher bonding scores than the control group, $P<0.001$ (1 RCT, N= 40)
Maternal adaptation	Mother-infant transaction program group scored better on maternal adaptation, $P<0.03$ overall (role satisfaction, $P<0.01$ ; attitudes to child-rearing, $P<0.02$ ; maternal self-confidence, $P<0.008$ ) (1 RCT, N=75)
Maternal attachment	No significant differences seen in maternal attachment for incubator co-bedding of multiples (1 cohort study, N=37)
Interest in newborn	Number of calls to neonatal unit significantly increased when mothers had access to a videophone while hospitalised and when discharged (both $P<0.05$ ) (1 cohort study, N=34)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Parental stress inventory/index	<p>Significantly better in NIDCAP group (<math>P&lt;0.05</math>) (1 RCT, N=76)</p> <p>Total stress was significantly lower with MITP for mothers at 3 months (<math>P=0.005</math>) and 12 months for mothers (<math>P=0.03</math>); and at 12 months for fathers (<math>P=0.02</math>) (1 RCT, N=215)</p> <p>No significant difference seen with education, support and optional home follow up: (1 RCT, N=210) at discharge or 3 months post-discharge</p> <p>Mothers with an audio-recording of consultation with doctor did not show differences in parental stress compared with the control group (1 RCT, N=186) at 12 months</p> <p>No significant difference seen for NIDCAP (1 RCT, N=178) 1-2 weeks after birth</p>
Parental stress	<p>Mothers in the COPE group showed significantly less stress (<math>P&lt;0.05</math>) (1 RCT, N=250)</p> <p>Parents in a psychological intervention group showed significantly less stress (<math>P&lt;0.05</math>) (1 RCT, N=68) at discharge</p> <p>Parents in peer support intervention had lower stress scores (<math>P&lt;0.001</math>) (1 cohort study, N=60) at 4 and 16 weeks</p>

Stress, anxiety	Support using a home monitor showed significantly less stress with monitor ( $P<0.05$ ) and less aggressive reaction to alarm ( $P<0.05$ ) (1 cohort study, N=160)
	No significant differences in anxiety with support using a home monitor (1 cohort study, N=160)
Maternal trauma	One-off psychological intervention to reduce stress showed fewer mothers of preterm birth with clinically significant trauma at discharge (36% vs 76% for controls, $P<0.01$ ) and less impact of trauma ( $P<0.03$ ) (1 cohort study, N=50)
State-Trait Anxiety Inventory	Significantly better in problem-focussed and emotion-focussed groups compared with controls ( $P<0.01$ ) (1 RCT, N=30)
	Significantly better with a combined kangaroo care and music intervention at 3 days ( $P<0.05$ ) and increasing daily ( $P<0.01$ ) (1 RCT, N=30)
	Anxiety ( $P<0.05$ ) and depression scores ( $P<0.01$ ) and perceived support ( $P<0.01$ ) were lower with peer support (1 cohort study, N=60) at 16 weeks
	No significant differences seen for peer support in trait anxiety (1 cohort study, N=60) at 4 and 16 weeks
	Early discharge and planning/support showed lower maternal state anxiety ( $P<0.01$ ) and state and trait anxiety for father ( $P<0.05$ and $<0.08$ respectively) (1 cohort study, N=75)
	Early discharge and planning/support showed no difference in maternal trait anxiety (1 cohort study, N=75)
	Early discharge and planning/support did not have an impact on recalled anxiety at 1 year (1 cohort study, N=75)
Depression or anxiety scores	No significant differences seen for incubator co-bedding of multiples intervention (1 cohort study, N=37)
	Mothers in the COPE group showed significantly less anxiety ( $P<0.05$ ) and depression ( $P<0.02$ ) at 2 months (1 RCT, N=250)
	Fathers in the COPE group showed no significant differences in anxiety or depression: (1 RCT, N=154)
Depression	Mothers with an audio-recording of consultation with doctor showed no differences in depression or anxiety scores than the control group (1 RCT, N=186) at 10 days, 4 months and 12 months
	Less maternal depression with kangaroo care ( $P<0.05$ ), (1 cohort study, N=146) at 37 weeks
Depression Action Checklist	No differences in CESD seen with home support (1 cohort study, N=81) at 1 and 12 months
	No significant difference for problem-focussed groups compared with controls (1 RCT, N=30)
Beck Depression Scale	Significantly improved with emotion-focussed groups compared with controls (1 RCT, N=30)
	Parents in a psychological intervention group showed significantly less depression ( $P<0.05$ ) (1 RCT, N=68) at discharge
Psychological symptoms	Significantly lower in home monitored group ( $P=0.037$ ), particularly for fathers (1 cohort study, N=102) 2 weeks after returning home
Maternal confidence	No significant difference for weighing and non-weighing of infants after feeding (1 RCT, N=60)
	No significant difference seen for NIDCAP (1 RCT, N=178) 1-2 weeks after birth
	Significantly improved maternal self-confidence with MITP (1 cohort study, N=81) at 6 months
Maternal Self Esteem Inventory	Mothers in a psychological intervention group showed no differences in self-esteem (1 RCT, N=68) at discharge
Family Environment Scale	Mothers in a psychological intervention group showed no differences on the Family Environment Scale (1 RCT, N=68) at discharge
Maternal role satisfaction	Significantly improved maternal role satisfaction with MITP (1 cohort study, N=81) at 6 months
Emotional support	Increased emotional support reported from peer support (1 cohort study, N=NR)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Knowledge of Preterm Behaviour Scale	Significantly greater knowledge ( $P<0.001$ ) with demonstration of preterm baby cues (1 RCT, N=84) 1 month post-discharge
	Significantly improved parental knowledge with COPE (1 RCT, N=414) at 2 months
	Significantly improved parental knowledge with education about caring for infants with bronchopulmonary dysplasia (1 before-after study, N=18) at 6 weeks
	No significant difference seen in knowledge of infant development with coaching (1 RCT, N=70)

Recall about diagnosis, treatment and outcomes	Mothers with an audio-recording of consultation with doctor had significantly improved recall about diagnosis, treatment and outcomes than control group at 10 days and 4 months (1 RCT, N=186)
Maternal sense of competence	Significantly better with kangaroo care (P=0.001) (1 RCT, N=492) while at NICU
	No significant difference for weighing and non-weighing of infants after feeding (1 RCT, N=60)
Parental comprehension	Discussion about infant progress showed fewer unrealistic concerns (P<0.018), less uncertainty about infant's medical condition (P<0.003), less decisional conflict (P<0.001) (1 cohort study, N=154)
Parenting Attitude Scale	No significant differences in maternal attitudes to child-rearing with MITP (1 cohort study, N=81) at 6 months
	No significant differences in parenting attitudes seen with home education (1 cohort study, N=84)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Satisfaction with conversations	Mothers with an audio recording of consultation with doctor showed no differences in satisfaction with conversations than the control group (1 RCT, N=186) at 10 days
Rating of quality of assistance; supportive presence	Parents in the home support group (IHDP) rated quality of assistance more highly than the control group (P<0.05) (1 RCT, N=683)
	No difference was seen for supportive presence (1 RCT, N=683)
	Parents adopting kangaroo care perceived less support from health professionals (P=0.03) (1 RCT, N=492) while at the NICU
Perceived nurse support	No significant difference in perceived nurse support seen for NIDCAP (1 RCT, (N=178) 1-2 weeks after birth
Parental perceptions or satisfaction with the neonatal unit	No significant differences seen for a family-centred intervention for parental perceptions or satisfaction with the neonatal unit (1 cohort study, N=114)
Maternal expectations	No significant differences seen with home education (1 cohort study, N=84)
Maternal satisfaction	Discussion about infant progress showed more satisfaction with medical decision process (P<0.012), and borderline for decision input (P=0.058) (1 cohort study, N=154)
	Discussion about infant progress showed no significant differences for satisfaction with infant care, and with decision made (1 cohort study, N=154)
	No significant difference seen in satisfaction with a coaching intervention (1 RCT, N=70)
	No significant differences seen in parental satisfaction for incubator co-bedding of multiples: (1 cohort study, N=37)
	Support using a home monitor showed significantly more parental satisfaction (P<0.005) (1 cohort study, N=160)
	No differences in maternal satisfaction seen with home support (1 cohort study, N=81)
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
FACES	No differences seen with home support (1 cohort study, N=81) at 1 or 12 months
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?</b>	
<ul style="list-style-type: none"> <li>Parents perceived the most effective communication to be when nurses asked questions and encouraged parents to ask questions, caring and reassuring communication and communication as equal partners in the care of the infant. 'Chat' or 'social talk' between nurses and parents had a positive influence on mothers' confidence, their sense of control and their feeling of connection with their baby.</li> </ul>	
<b>What could impede or interfere with engagement with interventions or programs or caregivers enacting upon messages?</b>	
<ul style="list-style-type: none"> <li>Parents perceived communication to be ineffective when the information given was inconsistent, when the staff did not check if parents understood the information and when questions were not allowed.</li> </ul>	

What could **facilitate** or drive with engagement with interventions or programs or caregivers enacting upon messages?

- Parents reported feeling supported through individualised development and behavioural care programs, through being taught behavioural assessment scales, and through breastfeeding, kangaroo care and baby massage programs. The touch involved in kangaroo care was said by mothers to induce feelings of well-being and fulfilment in parents.
- Parents also felt supported through organised support groups and through provision of an environment where parents can meet and support each other. Parental stress may be reduced through individual developmental care programs, psychotherapy, interventions that teach emotional coping skills, and active problem solving, and journal writing. A tour of the neonatal unit prior to the preterm birth may help to allay parents' fears (although some parents found the appearance of the babies and the technology overwhelming).
- Websites enabling individualised information helped communication of complex issues and helped to humanise the experience of the neonatal unit. Tape-recordings of consultations with doctors were also seen to be helpful by parents, as was a binder of information about medical and practical information related to the NICU.
- Mothers reported less anxiety with early NICU discharge accompanied by an individualised discharge plan, followed by home nursing care. Discharge planning in general with education engendered a feeling of overall increased support. Parents valued continuity of care e.g. care continuing at home.

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CESD: Center for Epidemiologic Studies Depression; COPE: Creating Opportunities for Parent Empowerment; FACES: Family Adaptability and Cohesion Scale; HOME: Home Observation for Measurement of the Environment; IHDP: Infant Health and Development Program; MDI: Mental Development Index; MITP: Mother-Infant Transaction Program; N: number; NICU: neonatal intensive care unit; NIDCAP: Neonatal Individualised Developmental Care and Assessment Programme; NR: not reported; P: P value; PDI: Psychomotor Development Index; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SIGN: Scottish Intercollegiate Guidelines Network; UK: United Kingdom; USA: United States of America

**Table 50: Evidence table for Evans 2014<sup>33</sup>**

<b>Review ID</b>	Evans 2014
<b>Search date</b>	1900 to April 2013
<b>Review method</b>	Narrative synthesis (with minimal meta-analysis) <i>“due to the diversity of methods used to measure outcomes”</i>
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their designs</b>	17 relevant studies (11 RCTs; 6 qRCTs)
<b>No. participants in relevant studies</b>	1,940
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 6/11 ('moderate' quality)
<b>Quality of relevant studies</b>	14 of the studies reported to have high methodological quality (PEDro score ≥ 6)
<b>Review objective</b>	To assess the effects of parenting interventions in improving the relationship between mothers and preterm infants
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs or qRCTs; <u>participants</u> : preterm infants < 37 weeks with no major congenital abnormalities (and the mothers of these infants); <u>interventions</u> : parenting interventions; <u>outcomes</u> : measuring mother-to-infant and/or infant-to-mother attachment and/or relationship outcomes; using standardised mother-preterm infant relationship outcomes; <u>other</u> : written in English
<b>Participant population</b>	All studies included preterm infants < 37 weeks, with 3 studies including very preterm infants ≤ 32 weeks
<b>Intervention</b>	Interventions for preterm infants focusing on parent-infant relationships. The 17 studies used a variety of parenting interventions with varied delivery location, content, intensity, duration and delivery mode. Intervention durations ranged from during hospital stay only (e.g. 6 45 minute weekly sessions), to 12 months corrected age (1 session at 1 week prior to discharge; and 5 sessions at 1, 3, 5 months post-discharge, 9 and 12 months corrected age)
<b>Comparator</b>	Predominately standard/usual care

<sup>33</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

Outcome domains	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
Outcome measure used in the review	Results reported in the review
<i>Single study results</i>	
IRSS	<p><u>Kangaroo holding</u> Total protest: MD: -11.18 (95% CI -15.55, -6.81); ES: -1.60; P&lt;0.001 (1 RCT, N=42) at 26 weeks Total positive bids: MD: 3.36 (95% CI 0.89, 5.83); ES: 0.85; P=0.009 (1 RCT, N=42) at 26 weeks</p> <p><u>Traditional holding</u> Total protest: MD: -5.90 (95% CI -10.16, -1.64); ES: -0.87; P=0.008 (1 RCT, N=42) at 26 weeks Total positive bids: MD: -2.59 (95% CI -4.99, -0.19); ES: -0.67; P=0.035 (1 RCT, N=42) at 26 weeks</p>
Mother infant interaction (infant)	<p>Cry: MD: -10.12 (95% CI -18.92, -1.32); ES: -1.23; P=0.027 (1 qRCT, N=16) at 3 months Smile: MD: -1.50 (95% CI -8.45, 5.45); ES: -0.23; P=0.651 (1 qRCT, N=16) at 3 months Laugh: MD: -1.32 (95% CI -6.30, 3.66); ES: -0.28; P=0.579 (1 qRCT, N=16) at 3 months Vocalisations: MD: 9.37 (95% CI -0.26, 19.00); ES: 1.04; P=0.056* (1 qRCT, N=16) at 3 months*borderline</p>
Qualitative ratings for parent-child interaction (infant)	<p>Positive mood: ES: 0.22; P=0.068 (1 RCT, N=93) at 12 months ca Negative mood: ES: 0.17; P=0.137 (1 RCT, N=93) at 12 months ca Dyadic mutuality: ES: 0.26; P=0.064 (1 RCT, N=93) at 12 months ca</p>
<b>Development for the infant, as a child, and up to 18 years</b>	
Outcome measure used in the review	Results reported in the review
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
Outcome measure used in the review	Results reported in the review
<i>Single study results</i>	
Feeding and Play Observation Scales	<p>Baby's social behaviour &lt;1500 g: MD: 0.26 (95% CI -1.04, 1.56); ES: 0.21; P=0.678 (1 qRCT, N=18) at 4 months post-birth &gt;1500 g: MD: -0.18 (95% CI -0.77, 0.41); ES: -0.27; P=0.534 (1 qRCT, N=23) at 4 months post-birth &lt;1500 g: MD: 0.48 (95% CI -0.57, 1.53); ES: 0.49; P=0.346 (1 qRCT, N=18) at 8 months post-birth &gt;1500 g: MD: -0.11 (95% CI -0.86, 0.64); ES: -0.13; P=0.764 (1 qRCT, N=23) at 8 months post-birth</p>
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
Outcome measure used in the review	Results reported in the review
NR	NR
<b>Parent-infant relationship</b>	
Outcome measure used in the review	Results reported in the review
<i>Pooled results</i>	
NCAFS/NCATS	<p><i>Effect on mother:</i> (1 NCAFS prior to discharge, 1 NCAFS at 1.5 months ca and 1 NCATS at 3 months ca) SMD (R): 0.04 (95% CI -0.34, 0.41); I<sup>2</sup> 76%; P=0.85 (3 qRCTs, N=508) Interventions: Demonstration and Interaction, State Modulation, Parent Baby Interaction Program</p>
<i>Single study results</i>	
NCAFS	<p><i>Effect on mother-infant dyad</i> MD: 5.80 (95% CI 2.05, 9.45); ES: 0.59; P=0.002 (1 qRCT, N=116) State Modulation/Low Education; 1.5 months ca MD: 3.90 (95% CI 0.03, 7.77); ES: 0.38; P=0.048 (1 qRCT, N=115) State Modulation+NSTEP-P/Low education; 1.5 months ca</p> <p><i>Effect on mother</i> MD: 2.70 (95% CI 0.65, 4.75); ES: 0.49; P=0.01 (1 qRCT, N=116); State Modulation/Low Education; at 1.5 months ca</p> <p><i>Effect on infant</i> MD: 1.70 (95% CI 0.06, 3.34); ES: 0.35; P=0.043, (1 qRCT, N=134); State Modulation /High education; at 1.5 months ca</p>

	<p>MD: 3.10 (95% CI 1.15, 5.05); ES: 0.59; P=0.002, (1 qRCT, N=116); State Modulation/Low education; at 1.5 months ca  MD: 1.70 (95% CI 0.07 to 3.33); ES: 0.52; P=0.007 (1 qRCT, N=115); State Modulation+NSTEP-P/Low education; at 1.5 months ca</p> <p><i>Effect on mother-infant dyad</i>  MD: 3.10 (95% CI -0.20, 6.40); ES: 0.32; P=0.065 (1 qRCT, N=134) State Modulation/High education; 1.5 months ca  MD: 1.57 (95% CI -2.12, 5.23); ES: 0.26; P=0.395 (1 qRCT, N=43) at 12 months ca</p> <p><i>Effect on mother</i>  MD: -3.23 (95% CI -6.78, 0.32); ES: -0.47; P=0.074 (1 qRCT, N=59) Demonstration and Interaction; prior to discharge  MD: -1.45 (95% CI -5.53, 2.63); ES: -0.20; P=0.479 (1 qRCT, N=53) Education; prior to discharge  MD: 1.40 (95% CI -0.66, 3.46); ES: 0.23; P=0.181 (1 qRCT, N=134); State Modulation/High education; at 1.5 months ca  MD: 1.20 (95% CI -1.25, 3.65); ES: 0.18; P=0.334 (1 qRCT, N=115) State Modulation+NSTEP-P/Low education; at 1.5 months ca  MD: -0.90 (95% CI -2.31, 0.51); ES: -0.18; P=0.208 (1 qRCT, N=211); Parent Baby Interaction Program; at 3 months ca  MD: 0.94 (95% CI -1.06, 2.94); ES: 0.29; P=0.349 (1 qRCT, N=43) at 12 months ca</p> <p><i>Effect on infant</i>  MD: 0.86 (95% CI -1.12, 2.84); ES: 0.27; P=0.385 (1 qRCT, N=43) at 12 months ca</p>
NCATS	<p><i>Effect on mother-infant dyad:</i>  MD: 4.40 (95% CI 1.90, 6.89); ES: 0.61; P=0.001 (1 qRCT, N=134); State Modulation/High education; at 5 months ca  MD: 3.60 (95% CI 0.14, 7.06); ES: 0.39; P=0.042 (1 qRCT, N=116); State Modulation/Low Education; at 5 months ca  MD: 7.20 (95% CI 3.59, 10.81); ES: 0.74; P&lt;0.001 (1 qRCT, N=115); State Modulation+NSTEP-P/Low education; at 5 months ca</p> <p><i>Effect on mother</i>  MD: 2.70 (95% CI 0.79, 4.61); ES: 0.48; P=0.006 (1 qRCT, N=134); State Modulation/High education; at 5 months ca  MD: 2.60 (95% CI 0.23, 4.97); ES: 0.41; P=0.032 (1 qRCT, N=116); State Modulation/Low Education; at 5 months ca  MD: 5.60 (95% CI 3.16 to 8.04); ES: 0.86; P&lt;0.001 (1 qRCT, N=115); State Modulation+NSTEP-P/Low education; at 5 months ca  Combined education: MD 2.66 (95% CI 1.19, 4.14); P=0.0004 (1 qRCT, N=250); 5 months ca</p> <p><i>Effect on infant</i>  MD: 1.80 (95% CI 0.43, 3.17); ES: 0.45; P=0.010 (1 qRCT, N=134); State Modulation/High education; at 5 months ca  MD: 1.70 (95% CI 0.07, 3.33); ES: 0.39; P=0.042 (1 qRCT, N=115); State Modulation+NSTEP-P/Low education; at 5 months ca</p> <p><i>Effect on mother</i>  MD: -0.90 (95% CI -2.31, 0.51); ES: -0.18; P=0.208 (1 qRCT, N=199) at 3 months ca</p> <p><i>Effect on infant</i>  MD: 1.10 (95% CI -0.55, 2.75); ES: 0.25; P=0.189 (1 qRCT, N=116); State Modulation/Low education' at 5 months ca</p>
Mother infant interaction observation	<p><i>Effect on mother-infant dyad:</i>  Uncoordinated stimulus: MD: -2.88 (95% CI -5.73, -0.03); ES: -1.08; P=0.048 (1 qRCT, N=16) at 3 months  Verbal stimulation: MD: 14.25 (95% CI 1.92 to 26.58); ES: 1.24; P=0.027 (1 qRCT, N=16) at 3 months  Minimal body contact: MD: -16.00 (95% CI -29.80, -2.20); ES: -1.24; P=0.026 (1 qRCT, N=16) at 3 months</p> <p><i>Effect on mother</i>  Instrumental contact: MD: -1.62 (95% CI -3.09, -0.16); ES: -1.19; P=0.033 (1 qRCT, N=16) at 3 months</p> <p><i>Effect on mother-infant dyad:</i>  Coordinated stimulus: MD: 0.21 (95% CI -1.11, 1.53); ES: 0.17; P=0.738 (1 qRCT, N=16) at 3 months  Much body contact: MD: 2.63 (95% CI -1.84, 7.10); ES: 0.63; P=0.227 (1 qRCT, N=16) at 3 months  Sounds and vocalisations: MD: 8.75 (95% CI -5.25, 22.75); ES: 0.67; P=0.201 (1 qRCT, N=16) at 3 months</p>

	<p><i>Effect on mother</i></p> <p>Enface: MD: -1.62 (95% CI -9.80, 6.56); ES: -0.21; P=0.677 (1 qRCT, N=16) at 3 months</p> <p>Close body contact: MD: 13.50 (95% CI -3.80, 30.80); ES: 0.84; P=0.116 (1 qRCT, N=16) at 3 months</p> <p>Patting: MD: 11.50 (95% CI -1.96, 24.96); ES: 0.92; P=0.088 (1 qRCT, N=16) at 3 months</p> <p>Kissing: MD: 3.00 (95% CI -1.05, 7.05); ES: 0.79; P=0.135 (1 qRCT, N=16) at 3 months</p> <p>Smile: MD: 13.25 (95% CI -6.31, 32.82); ES: 0.73; P=0.169 (1 qRCT, N=16) at 3 months</p> <p>Laugh: MD: 8.12 (95% CI -1.39, 17.63); ES: 0.92; P=0.088 (1 qRCT, N=16) at 3 months</p> <p>Positive verbalisation: MD: 12.37 (95% CI -24.22, 48.96); ES: 0.36; P=0.480 (1 qRCT, N=16) at 3 months</p> <p>Negative verbalisation: MD: -0.50 (95% CI -4.15, 3.15); ES: -0.15; P=0.773 (1 qRCT, N=16) at 3 months</p>
Fogel Scoring System	<p><i>Effect on mother-infant dyad:</i></p> <p><u>Kangaroo holding</u></p> <p>Symmetrical coregulation: MD: 13.45 (95% CI 10.36, 16.54); ES: 2.72; P&lt;0.001 (1 qRCT, N=42) at 26 weeks postnatal age</p> <p>Asymmetrical coregulation: MD: -15.59 (95% CI -19.05, -12.13); ES: -2.81; P&lt;0.001 (1 qRCT, N=42) at 26 weeks postnatal age</p> <p>Unilateral regulation: MD: 4.71 (95% CI 0.97, 8.45); ES: 0.79; P=0.015 (1 qRCT, N=42) at 26 weeks postnatal age</p> <p><i>Effect on mother-infant dyad:</i></p> <p><u>Traditional holding</u></p> <p>Symmetrical coregulation: MD: -2.63 (95% CI -5.94, 0.08); ES: -0.61; P&lt;0.056* (1 qRCT, N=42) at 26 weeks postnatal age *(borderline)</p> <p>Asymmetrical coregulation: MD: 2.72 (95% CI -0.65, 6.09); ES: 0.50; P=0.111 (1 qRCT, N=42) at 26 weeks postnatal age</p> <p>Unilateral regulation: MD: 2.59 (95% CI -1.05, 6.23); ES: 0.44; P=0.158 (1 qRCT, N=42) at 26 weeks postnatal age</p>
Synchrony Scale	<p><i>Effect on mother-infant dyad</i></p> <p>Mutual attention: MD: 0.21 (95% CI 0.16, 0.26); ES: 1.95; P&lt;0.001 (1 RCT, N=63) at 6 months ca</p> <p><i>Effect on infant</i></p> <p>Alert: MD: 0.12 (95% CI -0.15 to 0.39); ES: 0.22; P=0.370 (1 RCT, N=63) at 6 months ca</p>
ICEP	<p><i>Effect on mother</i></p> <p><u>Play</u></p> <p>Social positive engagement: MD: 1.40 (95% CI 0.07, 2.73); ES: 0.39; P=0.039 (1 RCT, N=112) at 6 months ca</p> <p><i>Effect on infant</i></p> <p><u>Normal play</u></p> <p>Environment focused: MD: 63.10 (95% CI 54.93, 71.27); ES: 0.14; P&lt;0.001 (1 RCT, N=112) at 6 months ca</p> <p><i>Effect on mother</i></p> <p><u>Play</u></p> <p>Negative: MD: 0.10 (95% CI -0.08, 0.28); ES: 0.21; P=0.271 (1 RCT, N=112) at 6 months ca</p> <p>Non-infant focused: MD: 0.00 (95% CI -0.27, 0.27); ES 0.00; P=1.00 (1 RCT, N=112) at 6 months ca</p> <p>Social monitor/no-neutral vocalisations: MD: 3.30 (95% CI -4.92, 11.52); ES: 0.15; P=0.80 (1 RCT, N=112) at 6 months ca</p> <p>Social monitor/positive vocalisations: MD: -4.10 (95% CI -12.56, 4.35); ES: -0.18; P=0.338 (1 RCT, N=112) at 6 months ca</p> <p><u>Reunion</u></p> <p>Negative: MD: 0.10 (95% CI -0.04, 0.24); ES: 0.27; P=0.149 (1 RCT, N=112) at 6 months ca</p> <p>Non-infant focused: MD: 0.00 (95% CI -0.36, 0.36); ES 0.00; P=1.00 (1 RCT, N=112) at 6 months ca</p> <p>Social monitor/no-neutral vocalisations: MD: 0.70 (95% CI -8.20, 10.22); ES: 0.03; P=0.884 (1 RCT, N=112) at 6 months ca</p> <p>Social monitor/positive vocalisations: MD: -1.10 (95% CI -10.54, 8.34); ES: -0.04; P=0.818 (1 RCT, N=112) at 6 months ca</p> <p>Social positive engagement: MD: 0.80 (95% CI -0.50, 2.10); ES: 0.23; P=0.224 (1 RCT, N=112) at 6 months ca</p> <p><i>Effect on infant</i></p> <p><u>Normal play</u></p> <p>Positive smiles: MD: -3.40 (95% CI -7.44, 0.64); ES: -0.32; P=0.098 (1 RCT, N=112) at 6 months ca</p>

	<p>Mother focused: MD: -0.80 (95% CI -6.70, 5.10); ES: -0.05; P=0.789 (1 RCT, N=112) at 6 months ca</p> <p>Negative: MD: 1.20 (95% CI -1.59, 3.99); ES: 0.16; P=0.396 (1 RCT, N=112) at 6 months ca</p> <p>Stress: MD: -0.02 (95% CI -0.06, 0.02); ES: -0.20; P=0.283 (1 RCT, N=112) at 6 months ca</p> <p>Oral self-comfort: MD: -0.20 (95% CI -4.63, 4.23); ES: -0.02; P=0.929 (1 RCT, N=112) at 6 months ca</p> <p><u>Still-face</u></p> <p>Positive smiles: MD: -0.50 (95% CI -1.80, 0.80); ES: -0.14; P=0.447 (1 RCT, N=112) at 6 months ca</p> <p>Mother-focused: MD: 4.50 (95% CI -1.90, 10.90); ES: 0.26; P=0.167 (1 RCT, N=112) at 6 months ca</p> <p>Environment-focused: MD: -3.40 (95% CI -11.96, 5.16); ES: -0.15; P=0.433 (1 RCT, N=112) at 6 months ca</p> <p>Negative: MD: 1.50 (95% CI -3.37, 6.37); ES: 0.12; P=0.543 (1 RCT, N=112) at 6 months ca</p> <p>Stress: MD: -0.10 (95% CI -0.61, 0.41); ES: -0.07; P=0.697 (1 RCT, N=112) at 6 months ca</p> <p>Oral self-comfort: MD: -0.50 (95% CI -6.48, 5.48); ES: -0.03; P=0.869 (1 RCT, N=112) at 6 months ca</p> <p><u>Reunion</u></p> <p>Positive smiles: MD: -2.40 (95% CI -6.59, 1.79); ES: -0.21; P=0.259 (1 RCT, N=112) at 6 months ca</p> <p>Mother-focused: MD: 0.90 (95% CI -5.68, 7.48); ES: 0.05; P=0.787 (1 RCT, N=112) at 6 months ca</p> <p>Environment-focused: MD: 2.90 (95% CI -6.61, 12.41); ES: 0.11; P=0.547 (1 RCT, N=112) at 6 months ca</p> <p>Negative: MD: 0.30 (95% CI -7.69, 8.29); ES: 0.01; P=0.940 (1 RCT, N=112) at 6 months ca</p> <p>Stress: MD: 0.30 (95% CI -0.26, 0.86); ES: 0.20; P=0.288 (1 RCT, N=112) at 6 months ca</p> <p>Oral self-comfort: MD: -2.30 (95% CI -7.63, 3.03); ES: -0.16; P=0.394 (1 RCT, N=112) at 6 months ca</p>
MSRS	<p><i>Effect on mother</i></p> <p>Sensitivity: MD: 0.22 (95% CI -0.09, 0.53); ES: 0.27; P=0.16 (1 RCT, N=119) at 6 months ca</p> <p>Overcontrol/intrusiveness: MD: -0.29 (95% CI -0.63, 0.050); ES: -0.32; P=0.096 (1 RCT, N=119) at 6 months ca</p> <p>Undercontrol/withdrawn: MD: -0.06 (95% CI -0.30, 0.18); ES: -0.10; P=0.615 (1 RCT, N=119) at 6 months ca</p>
IPB	<p><i>Effect on mother</i></p> <p>MD: 0.72 (95% CI -0.24, 1.68); ES: 0.20; P=0.141 (1 RCT, N=211) 10 days post-birth</p>
VAS-I	<p><i>Effect on mother</i></p> <p>MD: 4.64 (95% CI -1.53, 10.81); ES: 0.21; P=0.140 (1 RCT, N=209) 10 days post-birth</p>
VAS-S	<p><i>Effect on mother</i></p> <p>MD: 2.78 (95% CI -2.41, 7.97); ES: 0.15; P=0.292 (1 RCT, N=199) 10 days post-birth</p>
Mother-infant feeding behavioural interaction	<p><i>Effect on mother</i></p> <p>Smiles (yes/no): ES: 0.50; P=0.022 (1 RCT, N=30) pre-discharge</p> <p><i>Effect on mother</i></p> <p>Vocalisation(yes/no): ES: 0.24; P=0.388 (1 RCT, N=30) pre-discharge</p> <p>Sensitivity to infant's feeding behaviour (neg/pos): ES: -0.33; P=0.171 (1 RCT, N=30) pre-discharge</p> <p>Quality of physical contact (yes/no): ES: -0.33; P=0.171 (1 RCT, N=30) pre-discharge</p> <p>Positive affect (neg/pos): ES: -0.30; P=0.215 (1 RCT, N=30) pre-discharge</p>
IRS	<p><i>Effect on infant</i></p> <p><u>Feeding variables</u></p> <p>IFIRS: MD: -0.35 (95% CI -0.68, -0.02); ES: -0.72; P=0.04 (1 RCT, N=35) 2 months post intervention*</p> <p><i>Effect on mother</i></p> <p><u>Non-feeding variables</u></p> <p>MNFIRS: MD: 0.08 (95% CI -0.05, 0.21); ES: 0.41; P=0.395 (1 RCT, N=35) post-intervention</p> <p>MNFIRS: MD: 0.14 (95% CI -0.04, 0.32); ES: 0.54; P=0.121 (1 RCT, N=35) 2 months post-intervention</p> <p>TPNF: MD: -0.03 (95% CI -0.08, 0.02); ES: -0.43; P=0.217 (1 RCT, N=35) 2 months post-intervention*</p> <p>TPNF: MD: 0.01 (95% CI -0.05, 0.07); ES: 0.13; P=0.714 (1 RCT, N=35) 2 months post-intervention*</p> <p><u>Feeding variables</u></p> <p>MFIRS: MD: -0.05 (95% CI -0.19, 0.09); ES: -0.25; P=0.46 (1 RCT, N=35) 2 months post-</p>



	<p>intervention*</p> <p>MFIRS: MD: -0.17 (95% CI -0.35, 0.01); ES: -0.66; P=0.06 (1 RCT, N=35) 2 months post-intervention*</p> <p>TPF: MD: -0.01 (95% CI -0.01, 0.08); ES: -0.08; P=0.822 (1 RCT, N=35) 2 months post-intervention*</p> <p>TPF: MD: -0.04 (95% CI -0.03, 0.11); ES: 0.37; P=0.281 (1 RCT, N=35) 2 months post-intervention*</p> <p>* <i>timing unclear</i></p> <p><i>Effect on infant</i></p> <p><u>Non-feeding variables</u></p> <p>INFIRS: MD: 0.15 (95% CI -0.03, 0.33); ES: 0.57; P=0.100 (1 RCT, N=35) post-intervention</p> <p>INFIRS: MD: 0.14 (95% CI -0.05, 0.33); ES: 0.49; P=0.153 (1 RCT, N=35) 2 months post-intervention</p> <p>DURNF: MD: 0.02 (95% CI -0.10, 0.14); ES: 0.11; P=0.738 (1 RCT, N=35) post-intervention</p> <p>DURNF: MD: 0.07 (95% CI -0.04, 0.18); ES: 0.42; P=0.218 (1 RCT, N=35) 2 months post-intervention</p> <p><u>Feeding variables</u></p> <p>IFIRS: MD: 0.11 (95% CI -0.25, 0.47); ES: 0.21; P=0.536 (1 RCT, N=35) 2 months post-intervention*</p> <p>DURF: MD: -0.23 (95% CI -0.43, 0.03); ES: -0.79; P=0.753 (1 RCT, N=35) 2 months post-intervention*</p> <p>DURF: MD: -0.08 (95% CI -0.28, 0.12); ES: -0.28; P=0.416 (1 RCT, N=35) 2 months post-intervention*</p> <p>* <i>timing unclear</i></p>
Qualitative ratings for parent-child interaction	<p><i>Effect on mother</i></p> <p>Sensitivity/responsiveness: ES: 0.28; P=0.048 (1 RCT, N=93) at 12 months ca</p> <p>Stimulation: ES: 0.17; P=0.04 (1 RCT, N=93) at 12 months ca</p> <p><i>Effect on mother</i></p> <p>Intrusiveness: ES: 0.20; P=0.06 (1 RCT, N=93) at 12 months ca</p>
RCA	<p><i>Effect on mother</i></p> <p>MD: 8.00 (95% CI 3.90 to 12.10); ES: 2.09; P=0.001 (1 RCT, N=16) at 36 weeks postconceptional age</p>
Feeding and play	<p><i>Effect on mother</i></p> <p>Affective behaviour (&lt;1500 g): MD: 1.07 (95% CI 0.27, 1.87); ES: 1.41; P=0.012 (1 qRCT, N=18) at 4 months post-birth</p> <p><i>Effect on mother</i></p> <p>Affective behaviour (&gt;1500 g): MD: -0.37 (95% CI -1.04, 0.30); ES: -0.49; P=0.261 (1 qRCT, N=23) at 4 months post-birth</p> <p>Affective behaviour (&lt;1500 g): MD: -0.37 (95% CI -1.05, 0.31); ES: -0.58; P=0.267 (1 qRCT, N=18) at 8 months post-birth</p> <p>Affective behaviour (&gt;1500 g): MD: 0.05 (95% CI -0.44, 0.54); ES: 0.09; P=0.833 (1 qRCT, N=23) at 8 months post-birth</p>
HOME (Maternal responsivity)	<p><i>Effect on mother</i></p> <p>MD: -0.30 (95% CI -0.67, 0.07); ES: -0.23' P=0.114 (1 qRCT, N=199) at 3 months ca</p>
PSI (Attachment)	<p><i>Effect on mother</i></p> <p>MD: -1.70 (95% CI -2.62, -0.78); ES: -0.63; P&lt;0.01 (1 RCT, N=134) at 6 months</p>
WMCI	<p><i>Effect on mother</i></p> <p>Balanced: ES 0.06; P=0.878 (1 RCT, N=78) at 18 months ca</p>
WMRB	<p><i>Effect on mother</i></p> <p>MD: 1.88 (95% CI 0.20, 3.56); ES: 1.20; P=0.03 (1 RCT, N=16)</p>
Strange situation procedure	<p><i>Effect on infant</i></p> <p>ES: -0.20; P=0.101 (1 RCT, N=68) at 14 months ca</p>
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

Parent/caregiver views of intervention	
Outcome measure used in the review	Results reported in the review
NR	NR
Family relationships	
Outcome measure used in the review	Results reported in the review
NR	NR
Systems outcomes	
Outcome measure used in the review	Results reported in the review
NR	NR
Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?	
NCAFS/NCATS: <i>Effect on mother</i>	<ul style="list-style-type: none"> <li>• “Examiners” (Browne 2005)</li> <li>• Neonatal nurses (Glazebrook 2007)</li> <li>• Public health nurses (Kang 1995)</li> </ul>
Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
NCAFS/NCATS: <i>Effect on mother</i>	<ul style="list-style-type: none"> <li>• In hospital (Browne 2005)</li> <li>• In hospital/at home (Glazebrook 2007)</li> <li>• In hospital/at home (Kang 1995)</li> </ul>
To whom could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
NCAFS/NCATS: <i>Effect on mother</i>	<ul style="list-style-type: none"> <li>• ≤ 36 weeks gestation (Browne 2005)</li> <li>• &lt; 32 weeks gestation (Glazebrook 2007)</li> <li>• 24-36 weeks gestation (Kang 1995)</li> </ul>
When could be the best time for the intervention, program, or message delivery to occur?	
NCAFS/NCATS: <i>Effect on mother</i>	<ul style="list-style-type: none"> <li>• Duration: 1 week prior to admission to discharge; intensity: 45 minutes (Browne 2005)</li> <li>• Duration: birth to 6 weeks post-discharge; intensity: weekly 60 minute sessions (Glazebrook 2007)</li> <li>• Duration: in hospital/at home OR home to 5 months; intensity: 60 minute sessions OR 9 home visits (Kang 1995)</li> </ul>
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	
NCAFS/NCATS: <i>Effect on mother</i>	<ul style="list-style-type: none"> <li>• Demonstration and interaction: demonstration and interaction: examiner demonstrated and explained infant’s behavioural responses (assessment of preterm infant behaviour, infant reflexes, attention-interaction, motor capacities, sleep-wake states, MABI) OR education: mothers viewed educational slides and videos, and given 2 baby information books (infant strengths and skills, feelings of parents during pregnancy, early delivery, nursery experience and interpersonal relationships) (Browne 2005)</li> <li>• Parent Baby Interaction Program: neonatal nurses led activities and demonstrations (tactile, discussion, verbal and observation activities to enhance mother’s observations of baby and sensitivity to baby’s cues) (Glazebrook 2007)</li> <li>• State Modulation: public health nurses used written information and demonstration (infant states of consciousness, interaction cues, arousing and soothing infants during feeding) OR Nursing Systems Towards Effective Parenting-Preterm: public health nurses discussed the information (sleep wake states of infants, behavioural cues, arousing and soothing infants and feeding, infant behavioural responsiveness and stimulation, family and community resources) (Kang 1995)</li> </ul>
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
What could impede or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

What could **facilitate** or drive with engagement with interventions or programs or caregivers enacting upon messages?  
NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; ca: corrected age; CI: confidence interval; DURF: Duration of Infants Positive Signalling During Feeding Interactions; DURNF: Duration of Infants Positive Signalling During Non-feeding Interactions; ES: effect size; g: grams; HOME: Home Observation for Measurement of the Environment; ICEP: Infant and Caregiver Engagement Phases; IFIRS: Infants Feeding Interaction Rating Scale; INFIRS: Infants Non-Feeding Interaction Rating Scale; IRS: Interactions Rating Scale; IRSS: Infant Regulatory Scoring System; MFIRS: Mothers Feeding Interaction Scale; MNFIRS: Mothers Non-feeding Interaction Scale; MSRS: Maternal Sensitivity and Responsivity Scales; MD: mean difference; N: number; NCAFS: Nursing Child Assessment Feeding Scale; NCATS: Nursing Child Assessment Teaching Scale; NR: not reported; NSTEP-P: Nursing System Towards Effective Parenting-Preterm; P: P value; PEDro: Physiotherapy Evidence Database; PSI: Parenting Stress Index; qRCT: quasi-randomised controlled trial; (R): random effects; RCA: Relationship Competencies Assessment; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SMD: standardised mean difference; TPF: Mother’s responsivity to the infant’s positive signalling during feeding interactions; TPNF: Mother’s responsivity to the infant’s positive signalling during non-feeding interactions; VAS-I: Interaction with Infant; VAS-S: Sensitivity to Needs of Infant; WMCI: Working Model of the Child Interview; WMRB: Internal Working Model of Relating to the Baby

**Table 51: Evidence table for Goyal 2013<sup>34</sup>**

<b>Review ID</b>	Goyal 2013
<b>Search date</b>	January 1980 to November 2012
<b>Review method</b>	Narrative synthesis and some meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	17 studies (14 RCTs; 1 qRCT; 1 quasi-experimental design; 1 matched cohort study)
<b>No. participants in relevant studies</b>	2,859
<b>Location/setting</b>	USA or Canada (inclusion criterion)
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 7/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Study quality assessed using Consolidated Standards of Reporting Trials guidelines for controlled studies, and Strengthening the Reporting of Observational studies in Epidemiology guidelines for cohort studies. 'Methodological limitations were common' Review authors' summary: 5 studies provided a calculation of statistical power; 12 studies reported blinding observers to treatment group; most studies demonstrated no differences in maternal or infant characteristics at baseline; overall loss to follow up was weakest aspect of most studies (4 studies did not report effect of group assignment on attrition; 9 reported similar or equal loss between groups; 4 reported differential loss based on group assignment)
<b>Review objective</b>	To assess published studies of home visiting initiated in pregnancy or early infancy to promote prevention and health promotion, with a specific focus on their impact for infants born preterm
<b>Review eligibility criteria</b>	<u>Designs</u> : experimental or quasi-experimental studies; <u>participants/interventions</u> : home-based, preventive, and health promotion services to families with infants at high medical or social risk for adverse outcomes with home visits initiated in pregnancy or early infancy (including studies in which other interventions (e.g. centre-based meetings) were provided as additional components to home visiting); involving the use of professionals including nurses and social workers, as well as trained paraprofessionals; <u>outcomes</u> : reporting early childhood and/or parenting outcomes (and intervention effects separately) for infants born preterm and/or low birthweight; <u>other</u> : published 1980 or later; conducted in the USA or Canada

<sup>34</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results

<b>Participant population</b>	Preterm (< 37 weeks in most programs; < 36 weeks in 2 programs; < 35 weeks in 1 program and < 34 in 1 program) or low birthweight infants (< 1500 g to < 2000 g) (with mean gestational age of 30-35 weeks, and mean birthweight of 1200-2400 g across studies) either during birth hospitalisation or soon after discharge; 13 studies used specific criteria based on gestational age, birth weight or birth; 4 studies targeted a more general population of infants (i.e. requiring care in the NICU – most of whom were preterm or low birthweight); most programs
<b>Intervention</b>	Home-based preventive services for infants at medical or social risk; ranging from birth to 2 years; 8 studies used nurses; 3 used development specialists; 3 used trained paraprofessionals or graduate studies; 2 used a mix of providers; 1 did not specify provider; duration of home visiting ranged from 8 weeks to 3 years; visit frequency ranged (mostly weekly/bi-weekly in early infancy)
<b>Comparator</b>	Most included studies compared an intervention including home visiting with control population receiving no home visiting; control groups in 3 studies also received home visiting (intervention group received enhanced/modified model)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Temperament	No clear effect (1 RCT, N=83) at 4, 8, 12 or 16 months corrected age
Carey Infant Temperament Questionnaire	Significant effects, P<0.01, (1 RCT, N=119) at 6 months
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Bayley MDI	SMD (R): 0.50 (95% CI 0.18 to 0.83); I <sup>2</sup> 68%; P=0.002 (9 studies: 7 RCTs, 1 qRCT, 1 cohort study, N=516) at 8-13 months ( <i>"effects may be more pronounced with at least weekly visits"</i> )
<b>Single study results</b>	
Bayley MDI	Significant effect for <1000 g, P<0.05 (1 RCT, overall N=173) at 3-4 months
	No clear effect for 1000 -2500 g (1 RCT, overall N=173) at 3-4 months
	Significant effects, P=0.05 (1 RCT, N=100) at 9 months
	Significant effects, P<0.01 (1 RCT, N=60) at 4, 8, and 12 months post discharge
	No clear effects (1 RCT, N=119) at 6, 12 and 24 months
	No <i>"consistent"</i> effects (1 qRCT, N=123) at 1, 4, 8, 12 and 24 months
	No clear effects (1 RCT, N=100) at 1 year corrected age
	Significant effects, P<0.001 (1 cohort study, N=84) at 1 year
	Significant effects, P<0.05 (1 RCT, N=221) at 1 and 2 years
	No clear effects (1 RCT, N=92) at 13 months
	No clear effects (1 RCT, N=79) at 18 months
	Significant effects, P<0.05 (1 RCT, N=92) at 20 months
Amiel-Tison Neurological Examination	No clear effects (1 cohort study, N=84 ) at 1 year
PPVT	No clear effects (1 RCT, N=119); assessment times not clearly reported
Gessell Developmental Schedules	No clear effects (1 RCT, N=100) at 3 and 9 months
Language development (REEL)	Significant improvement in expressive and combined quotients of REEL (1 RCT, N=100) at 9 months
	Significant improvement in expressive quotient of REEL, P<0.05 (1 quasi-experimental study, N=45) at 18 months
	No clear effect on receptive quotient of REEL (1 quasi-experimental study, N=45) at 18 months
McCarthy's Scales of Children's Abilities	Significant effects (1 RCT, N=119) at 3 (P<0.05) and 4 (P<0.01) years
	No clear effects (1 RCT, N=83) at 4.5 years
PIAT	No clear effects (1 RCT, N=83) at 4.5 years
Kaufman Assessment Battery for Children	Significant effect, P<0.01 (1 RCT, N=119) at 7 and 9 years
Stanford-Binet Intelligence Scale; Wechsler Intelligence Scale for Children	No clear effects (1 RCT, N=985) at 2, 3, 5, 8 and 18 years

Bayley PDI	Significant effect for <1000 g, P<0.05 (1 RCT, overall N=173) at 3-4 months
	No clear effect for 1000-2500 g (1 RCT, overall N=173) at 3-4 months
	Little or no effect after 4 or 8 months (1 RCT, N=83)
	No clear effects (1 RCT, N=60) (P<0.01) at 4, 8, and 12 months post discharge
	Significant effects, P=0.05 (1 RCT, N=100) at 9 months
	Significant effect (1 RCT, N=83) at 12 months
	No clear effects (1 RCT, N=100) at 1 year corrected age
	No clear effects (1 cohort study, N=84) at 1 year
	No "consistent" effects (1 qRCT, N=123) at 1, 4, 8, 12 and 24 months
	Significant effects, P<0.05 (1 RCT, N=221) at 1 and 2 years
No clear effects (1 RCT, N=79) at 18 months	
VMI and MCDI	Significant effect, but only for infants < 1500 g (1 RCT, N=83) at 4.5 years of age
Physical development	Weight and length significantly increased (1 RCT, N=60) at 4 and 12 months
	Weight, height and head circumference significantly increased in infants with birthweight < 1500 g (1 RCT, N=985) at 8 years
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Child Behaviour Checklist	Significant effect; P<0.01 (1 RCT, N=985) at 3 years
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Morbidity Index (maternal report of hospitalisations, surgeries, injuries and conditions)	No clear effect on serious health conditions (1 RCT, N=985) at 3 years
	Significant (small) increase for maternally reported minor illnesses for infants > 1500 g (1 RCT, overall N=985) at 3 years
Child Health Status (General Health Ratings Index)	Significantly lower ratings on the Physical Functioning Scale (1 RCT, N=985) at 8 years
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
HOME inventory	SMD (R): 0.79 (95% CI 0.57 to 1.02); I <sup>2</sup> 0%; P<0.001 (6 studies: 4 RCTs, 1 cohort and 1 quasi-experimental study, N=336) at 8-12 months
<b>Single study results</b>	
<i>Across all tools:</i>	13/14 studies showed positive effects
HOME inventory	No clear differences at 4, 8 and 12 months (1 RCT, N=83)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Child maltreatment	No clear effect (2 RCTs, N=160) at 6 and 12 months (1 RCT) and 18 months (1 RCT)
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
HOME Inventory	Home visitor: <ul style="list-style-type: none"> <li>• Infant development specialist: therapists with training in speech therapy, occupational therapy or early childhood education (Barrera 1986)</li> <li>• Nurse (Casiro 1993)</li> <li>• Graduate student with teenage work/study student (Field 1980, 1982)</li> <li>• NR (Finello 1998)</li> </ul>

	<ul style="list-style-type: none"> <li>• Infant development specialists (MICP 1987, 1993)</li> <li>• Team of registered nurse and occupational therapist (Ross 1984)</li> </ul>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
HOME Inventory	All in the home (home visiting programs: Barrera 1986; Casiro 1993; Field 1980, 1982; Finello 1998; MICP 1987, 1992; Ross 1984)
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
HOME Inventory	<p>Study population:</p> <ul style="list-style-type: none"> <li>• Term and preterm infants (Barrera 1986)</li> <li>• NICU graduates &lt; 2000 g (Casiro 1993)</li> <li>• Term and preterm infants of teen African-American mothers with low SES (Field 1980, 1982)</li> <li>• NICU graduates 750-1500 g (Finello 1998)</li> <li>• NICU graduates with low birthweight, prematurity or other complications with parents at social risk (teenage mother, child protective services, substance use, low income) (MICP 1987, 1993)</li> <li>• NICU graduates with low birthweight, prematurity or other complications of parents with low SES (Ross 1984)</li> </ul>
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
HOME Inventory	<p>Timing of enrolment:</p> <ul style="list-style-type: none"> <li>• 2 weeks after discharge (Barrera 1986)</li> <li>• Before neonatal intensive care unit discharge (Casiro 1993)</li> <li>• After discharge (Field 1980, 1982; MICP 1987, 1993; Ross 1984)</li> <li>• 1 week after discharge (Finello 1998)</li> </ul> <p>Frequency, duration of visits:</p> <ul style="list-style-type: none"> <li>• Weekly, first 3 months (Barrera 1986)</li> <li>• Individually determined over 8 weeks, range 2-7 visits (Casiro 1993)</li> <li>• Biweekly first 4 months, then monthly until 12 months (Field 1980, 1982)</li> <li>• Frequency not described, over 2 years (Finello 1998)</li> <li>• Weekly, then monthly for the first year, then quarterly until 2 years (MICP 1987, 1993)</li> <li>• Biweekly first 3 months, then monthly up to 1 year (Ross 1984)</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	
HOME Inventory	<p>Theory of change:</p> <ul style="list-style-type: none"> <li>• Transactional model focusing on parent-infant interactions (Barrera 1986)</li> <li>• No specific theory reported (Casiro 1993; Finello 1998; Ross 1984)</li> <li>• Interaction effect of prematurity and maternal attributes (Field 1980, 1982)</li> <li>• Responsivity to infant cues important to development (MICP 1987; 1993)</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; g: grams; HOME: Home Observation for Measurement of the Environment; MCDI: Macarthur Communicative Development Inventory; MDI: Mental Development Index; MICP: Mother-Infant Care Project; N: number; NICU: neonatal intensive care unit; NR: not reported; P: P-value; PDI: Psychomotor Development Index; PIAT: Peabody Individual Achievement Test; PPVT: Peabody Picture Vocabulary Test; qRCT: quasi-randomised controlled trial; (R): random effects; RCT: randomised controlled trial; REEL: Receptive-Expressive Emergent Language; ROBIS: Risk of Bias in Systematic Reviews; SMD: standardised mean difference; USA: United States of America; VMI: Visual Motor Integration

**Table 52: Evidence table for Spittle 2012<sup>35</sup>**

<b>Review ID</b>	Spittle 2012	
<b>Search date</b>	1966 to October 2012	
<b>Review method</b>	Meta-analysis	
<b>Ongoing studies</b>	Oberg GK, Campbell SK, Girolami GL, Ustad T, Jørgensen L, Kaaresen PI. Study protocol: an early intervention program to improve motor outcome in preterm infants: a randomized controlled trial and a qualitative study of physiotherapy performance and parental experiences. BMC Pediatrics 2012; 12: 15.	
<b>No. studies of relevant to this Overview and their design(s)</b>	21 relevant studies (16 RCTs; 1 cRCT; 4 qRCTs)	
<b>No. participants in relevant studies</b>	3,100	
<b>Location/setting</b>	NR	
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 9/11 ('high' quality)	
<b>Quality of relevant studies</b>	Review authors' summary: methodological quality of the included trials was variable; 10 were RCTs with adequate concealment of allocation; only 6 RCTs had both adequate concealment and greater than 85% follow up	
<b>Review objective</b>	To assess the effects of early developmental intervention post-discharge from hospital for preterm (< 37 weeks) infants on motor or cognitive development	
<b>Review eligibility criteria</b>	<u>Designs</u> : randomised or quasi-randomised controlled trials; <u>participants</u> : infants born at < 37 weeks with no major congenital abnormalities; <u>interventions</u> : early developmental intervention programs that began within the 1 <sup>st</sup> 12 months of life; intervention could commence as an inpatient; however, a post-discharge component was necessary to be included; <u>outcomes</u> : measures were not pre-specified other than that they had to assess cognitive ability, motor ability or both	
<b>Participant population</b>	Infants who were born preterm, with a range of gestational ages from < 37 weeks or birthweight < 2500 g	
<b>Intervention</b>	Intervention focus included infant development and milestones; understanding behavioural cues, infant stimulation; physiotherapy; occupational therapy; early educational intervention; and enhancement of the parent-infant relationship. The frequency and duration of the intervention programs ranged from 4 sessions over approximately 1 month, to weekly sessions for 12 months, followed by bi-weekly sessions for a further 2 years	
<b>Comparator</b>	Usually standard care (only 1 study had a comparison treatment instead of a non-treatment control group)	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Pooled results</b>		
Cognitive development (infant age 0 to 2 years): DQ (BSID MDI and Griffiths)	SMD (R): 0.31 (95% CI 0.13, 0.50); I <sup>2</sup> 69%; P=0.0008; (13 studies: 10 RCTs and 3 qRCTs, N=2,147)	
	An additional 5 studies did not provide adequate data for meta-analysis – 3 (2 RCTs and 1 qRCT, N=98) reported a significant difference in favour of the intervention group; and 2 RCTs (N=118) found no difference	
Cognitive development (pre-school age 3 to < 5 years): IQ (Stanford-Binet, McCarthy, BSID MDI)	SMD (F): 0.45 (95% CI 0.34, 0.57); I <sup>2</sup> 0%; P<0.00001; (6 RCTs, N=1,276)	
Cognitive development (school age 5 to 17 years): IQ (WISC, Kaufmann)	SMD (R): 0.25 (95% CI -0.10, 0.61); I <sup>2</sup> 82%; P=0.16; (4 RCT, N=1,242)	

<sup>35</sup> green shading indicates results significantly in favour of the intervention

Motor development (infant age 0 to 2 years) (BSID PDI, Griffiths locomotor)	SMD (F): 0.10 (95% CI 0.00, 0.19); $I^2$ 0%; P=0.04; (10 studies: 8 RCTs and 2 qRCTs, N=1,745) An additional 7 RCTs and 1 qRCT (N=601) did not provide adequate data for meta-analysis – only 1 RCT (N=84) showed significant results
Motor development (pre-school age 3 to < 5 years) (Griffiths locomotor and PEDI)	SMD (F): 0.14 (95% CI -0.16, 0.44); $I^2$ 0%; P=0.36 (2 RCTs, N=168) An additional RCT (N=176) showed significant results on PEDI
Cerebral palsy (infancy to 6 years)	RR (F): 0.89 (95% CI 0.55, 1.44); $I^2$ 0%; P=0.64; (4 RCTs and 1 qRCT, N=737)
<b>Single study results</b>	
Cognitive development (adult 18 years)	Exact figures NR (just 'not significant') (1 RCT, N=640) (65% follow up)
Motor development (school age 5 to 17 years) (Griffiths locomotor)	SMD (F): 0.34 (95% CI -0.91, 0.23) (1 qRCT, N=49) An additional RCT (N=146) reported no differences
Motor development (school age 5 to 17 years) (low score on Movement-ABC)	RR (F): 1.04 (95% CI 0.78, 1.38) (1 RCT, N=197)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Cognitive and motor development	The programs were implemented by: <ul style="list-style-type: none"> <li>• Doctors (Bao 1999)</li> <li>• Physiotherapists (Goodman 1985; Lekskulchai 2001; Yigit 2002; Cameron 2005; Koldewijn 2009; Spittle 2009a)</li> <li>• Nurses (Rice 1979; Nurcombe 1984; Resnick 1988; APiP 1998; Kaaresen 2006; Johnson 2009)</li> <li>• Intervention therapists (Nurcombe 1984)</li> <li>• Education professionals (Resnick 1988; IHDP 1990)</li> <li>• Psychologists (Gianni 2006; Spittle 2009a)</li> <li>• Occupational therapists (Barrera 1986; Sanjaniemi 1998)</li> <li>• And/or speech pathologists (Barrera 1986)</li> </ul>
<b>Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Cognitive and motor development	In the hospital or at home (see <b>when</b> below)
<b>To whom could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Cognitive and motor development	"Early intervention programmes for preterm infants have a positive influence on cognitive and motor outcomes during infancy, with the cognitive benefits persisting into pre-school age. There is a great deal of heterogeneity between studies due to the variety of early developmental intervention programmes trialled and gestational ages of the preterm infants included, which limits the comparisons of intervention programmes. Further research is needed to



	<p>determine which early developmental interventions are the most effective at improving cognitive and motor outcomes, and on the longer-term effects of these programmes.”</p> <p>All studies included infants who were preterm</p> <ul style="list-style-type: none"> <li>• &lt; 37 weeks or birthweights &lt; 2500 g (Rice 1979; Field 1980; Nurcombe 1984; Barrera 1986; IHDP 1990; Bao 1999; Lekskulchai 2001; Melnyk 2001; Nelson 2001)</li> <li>• &lt; 34 weeks' gestational age or born &lt; 1800 g (Goodman 1985; Resnick 1988; Yigit 2002)</li> <li>• &lt; 33 weeks gestational age (APIP 1998; Cameron 2005)</li> <li>• &lt; 2000 g (Kaaresen 2006)</li> <li>• &lt; 32 weeks gestational age, &lt; 1500 g, or both (Koldewijn 2009)</li> <li>• &lt; 30 weeks gestational age (Spittle 2009a)</li> <li>• &lt; 1000 g (Sajaniemi 1998)</li> <li>• Cerebral injuries (Nelson 2001; Ohgi 2004).</li> <li>• Mothers of low SES (Rice 1979; Field 1980)</li> </ul>
	<p>Test for subgroup differences:</p> <ul style="list-style-type: none"> <li>• Cognitive development at infant age (32 to &lt; 37 weeks, 28 to &lt; 32 weeks, &lt; 28 weeks) <math>Ch^2=1.04</math>, <math>P=0.31</math>, <math>I^2=4\%</math></li> <li>• Cognitive development at infant age (1500 to &lt; 2500 g birthweight, 1000 to &lt; 1500 g birthweight, &lt; 1000 g birthweight) <math>Chi^2=12.23</math>, <math>P=0.00</math>, <math>I^2=92\%</math></li> <li>• Cognitive development at pre-school age (1500 to &lt; 2500 g birthweight, 1000 to &lt; 1500 g birthweight, &lt; 1000 g birthweight) <math>Chi^2=1.50</math>, <math>P=0.22</math>, <math>I^2=34\%</math></li> </ul>
<p><b>When could be the best time for the intervention, program, or message delivery to occur?</b></p>	
<p>Cognitive and motor development</p>	<ul style="list-style-type: none"> <li>• The frequency and duration of the intervention programs ranged from: 4 sessions over approximately 1 month (Melnyk 2001), to weekly sessions for 12 months, followed by biweekly sessions for a further 2 years (I.H.D.P. 1990).</li> <li>• The majority of the interventions began post-discharge from hospital (Rice 1979; Field 1980; Goodman 1985; Barrera 1986; IHDP. 1990; APIP 1998; Bao 1999; Lekskulchai 2001; Yigit 2002; Gianni 2006; Spittle 2009a), while 6 studies began when the infant was still an inpatient (Nurcombe 1984; Resnick 1988; Ohgi 2004, Cameron 2005; Johnson 2009; Koldewijn 2009).</li> </ul> <p>“The study by I.H.D.P. 1990 reported that higher levels of participation were related to better outcomes on the MDI and IQ scores at 24 and 36 months. In the study by Cameron 2005, a better motor outcome was reported at four months for the families with good compliance. However, subjective measurement of compliance by the study investigators may be biased and should be assessed more objectively.”</p> <p>“The meta-analysis of the long-term effects of early developmental interventions on motor and cognitive development was limited not only by the small number of studies, but the low rates of follow-up of these studies.”</p> <p>Test for subgroup differences:</p> <ul style="list-style-type: none"> <li>• Cognitive development at infant age (inpatient, post-hospital discharge) <math>Chi^2=0.47</math>, <math>P=0.49</math>, <math>I^2=0.0\%</math></li> <li>• Cognitive development at pre-school age (inpatient, post-hospital discharge) <math>Chi^2=0.19</math>, <math>P=0.67</math>, <math>I^2=0.0\%</math></li> <li>• Cognitive development at school age (inpatient, post-hospital discharge) <math>Chi^2=4.92</math>, <math>P=0.03</math>, <math>I^2=80\%</math></li> <li>• Motor development at infant age (inpatient, post-hospital discharge) <math>Chi^2=0.84</math>, <math>P=0.36</math>, <math>I^2=0.0\%</math></li> <li>• Motor development at pre-school age (inpatient, post-hospital discharge) <math>Chi^2=0.93</math>, <math>P=0.34</math>, <math>I^2=0.0\%</math></li> <li>• Rate of cerebral palsy (inpatient, post-hospital discharge), NR</li> </ul>

<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b>	
Cognitive and motor development	<p>“Early intervention programmes for preterm infants have a positive influence on cognitive and motor outcomes during infancy, with the cognitive benefits persisting into pre-school age. There is a great deal of heterogeneity between studies due to the variety of early developmental intervention programmes trialled and gestational ages of the preterm infants included, which limits the comparisons of intervention programmes. Further research is needed to determine which early developmental interventions are the most effective at improving cognitive and motor outcomes, and on the longer-term effects of these programmes.”</p> <p>Focus of the intervention:</p> <ul style="list-style-type: none"> <li>• Enhancing the parent-infant relationship and infant development (Nurcombe 1984; Resnick 1988; Sanjaniemi 1998; IHDP 1990; Nelson 2001; Gianni 2006; Kaaresen 2006; Johnson 2009; Koldewijn 2009; Spittle 2009a).</li> <li>• Infant development alone (Rice 1979; Goodman 1985; Bao 1999; Lekskulchai 2001; Yigit 2002; Cameron 2005).</li> <li>• Parent-infant relationship alone (Melnyk 2001).</li> <li>• Two studies had two intervention groups and a control group; Barrera 1986 had one group that received a parent-infant focused intervention and the other received an infant development focused intervention, while APIP 1998 had one group that received an infant development intervention and one group that received 'parent support'. An additional classification of 'parent support' was added in for this study.</li> </ul> <p>The theoretical constructs of intervention programs included:</p> <ul style="list-style-type: none"> <li>• Teaching parents about infant development and milestones (Barrera 1986; Resnick 1988; IHDP 1990; Bao 1999; Ohgi 2004; Cameron 2005; Kaaresen 2006; Koldewijn 2009; Spittle 2009a)</li> <li>• Understanding behavioural cues (Nurcombe 1984; Barrera 1986; Bao 1999; Melnyk 2001; Ohgi 2004; Cameron 2005; Gianni 2006; Kaaresen 2006; Johnson 2009; Koldewijn 2009; Spittle 2009a)</li> <li>• Infant stimulation (Rice 1979; Field 1980; Nurcombe 1984; Nelson 2001)</li> <li>• Physiotherapy (Goodman 1985; Lekskulchai 2001; Nelson 2001; Yigit 2002; Cameron 2005; Gianni 2006; Kaaresen 2006; Johnson 2009; Koldewijn 2009; Spittle 2009a)</li> <li>• Occupational therapy (Sajaniemi 1998)</li> <li>• Early educational intervention (IHDP 1990; Bao 1999)</li> <li>• Enhancement of the parent-infant relationship (Field 1980; Nurcombe 1984; Resnick 1988; IHDP 1990; Sajaniemi 1998; Melnyk 2001; Ohgi 2004; Gianni 2006; Kaaresen 2006; Johnson 2009; Koldewijn 2009; Spittle 2009a).</li> </ul> <p>Test for subgroup differences:</p> <ul style="list-style-type: none"> <li>• Cognitive development at infant age (parent-infant relationship, infant development, parent-infant relationship and infant development) <math>Chi^2=2.59</math>, <math>P=0.27</math>, <math>I^2=23\%</math></li> <li>• Cognitive development at school age (infant development, parent-infant relationship and infant development) <math>Chi^2=2.68</math>, <math>P=0.10</math>, <math>I^2=63\%</math></li> <li>• Motor development at infant age (infant development, parent-infant relationship and infant development) <math>Chi^2=1.31</math>, <math>P=0.25</math>, <math>I^2=24\%</math></li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?</b>	
NR	
<b>What could impede or interfere with engagement with interventions or programs or caregivers enacting upon messages?</b>	
NR	

**What could facilitate or drive with engagement with interventions or programs or caregivers enacting upon messages?**

“This systematic review has not investigated which aspects of early developmental interventions affect outcome more, such as the optimal duration, timing, frequency, or focus of the intervention. Further research is needed to determine the components of intervention that are most effective based on cost and benefits. The I.H.D.P. 1990 was estimated to cost USD15,146 per year per child. The investigators suggest this value could be reduced to USD8806 if the centres were located in the community and teacher-child ratios were decreased. However, this is still a costly intervention compared with the study by Nurcombe 1984, which had better long-term outcomes and would cost less to implement since there were only 11 sessions over four months compared with the intensive programme over three years received by infants in the intervention group of the I.H.D.P. 1990 study.”

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID: Bayley Scale of Infant Development; CI: confidence interval; cRCT: cluster randomised controlled trial; DQ: developmental quotient; (F): fixed effect; g: grams; Griffiths: Griffiths Mental Development Scale; IQ: Intelligence Quotient; McCarthy: McCarthy Scales of Children’s Abilities; MDI: Mental Development Index; Movement-ABC: Movement Assessment Battery for Children; N: number; NR: not reported; P: P Value; PDI: Psychomotor Development Index; PEDI: Pediatric Evaluation of Disability Inventory; qRCT: quasi-randomised controlled trial; (R): random effects; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; SMD: standardised mean difference; Stanford-Binet: Stanford-Binet Intelligence Scale; WISC: Weschler Intelligence Scale for Children

**Table 53: Evidence table for Vanderveen 2009<sup>36</sup>**

<b>Review ID</b>	Vanderveen 2009
<b>Search date</b>	1966 to June 2008
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to their Overview and their designs</b>	25 relevant studies (24 RCTs; 1 qRCT)
<b>No. participants in relevant studies</b>	3,509
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 8/11 ('high' quality)
<b>Quality of relevant studies</b>	Review authors’ summary: only 3 trials clearly reported adequate allocation concealment (unclear in remainder); in 21 trials, outcome assessment was blinded; only 4 trials captured ≥ 85% of outcome data at last point of follow up
<b>Review objective</b>	To assess whether interventions for infant development, that involve parents, improve neurodevelopment at 12 months corrected age or older
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs or qRCTs; <u>participants</u> : preterm infants (< 37 weeks) or infants < 2500 g at birth; <u>interventions/outcomes</u> : intervention aimed to improve infant development, which was measured by standardised scales, beginning in the 1 <sup>st</sup> 12 months of an infant’s life; routine care/non-intervention control
<b>Participant population</b>	Preterm infants < 37 weeks or infants < 2500 g at birth
<b>Intervention</b>	All studies involved either teaching/enhancing parent’s skills and/or involving parents in aspects of care for their infant: 5 trials involved NIDCAP intervention, 1 involved kangaroo care, the remainder (19) incorporated a variety of other developmental interventions; intervention durations ranged from the length of in-hospital stay (ending at NICU discharge) to 3 years; intensity of interventions ranged from daily to monthly
<b>Comparator</b>	Routine care/non-intervention controls
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<sup>36</sup> green shading indicates results significantly in favour of the intervention

<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Cognitive development	BSID MDI and Griffiths (6 months): MD (R) 3.55 (95% CI -0.05 to 7.16); het P=NS; P=0.05; (6 RCTs, N=964)
	BSID MDI and Griffiths (12 months): MD (R) 5.57 (95% CI 2.29 to 8.86); het P<0.001; P=0.009 (12 studies: 11 RCTs, 1 qRCT, N=2198)
	BSID MDI and Griffiths (24 months): MD (R) 7.59 (95% CI 3.51 to 11.67); het P=0.0009; P=0.0003; (7 RCTs, N=1490)
	McCarthy and Stanford-Binet (36 months): MD (R) 9.66 (95% CI 5.01 to 14.31); het P=NS; P<0.0001 (2 RCTs, N=961)
Motor development	WPPSI-R and British Abilities Scale (5 years): MD (R) -1.36 (95% CI -3.64 to 0.92); het P=NS; p=0.24 (3 RCTs, N=1017)
	BSID PDI (6 months): MD (R) 3.47 (95% CI -3.92 to 10.86); het P=NS; P=0.36 (4 RCTs, N=176)
	BSID PDI (12 months): MD (R) 5.10 (95% CI 1.44 to 8.75); het P=NS; P=0.006 (9 RCTs, N=1319)
BSID PDI (24 months): MD (R) 2.47 (95% CI -2.01 to 6.94); het P=NS; P=0.28 (4 RCTs, N=1025)	
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
All outcomes	Summary: "The intervention programs were diverse and varied in regards to period of application, intensity, setting and <b>parental involvement</b> "
Cognitive development in infancy (6 months)	<ul style="list-style-type: none"> <li>• Moderate (Charpak 2001)</li> <li>• Substantial (Gillette 1991)</li> <li>• Substantial (Melynk 2001)</li> <li>• Substantial (Nurcombe 1984)</li> <li>• Substantial (Ohgi 2004)</li> <li>• Moderate (Resnick 1988)</li> </ul>

Cognitive development in infancy (12 months of age)	<ul style="list-style-type: none"> <li>• Minimal (Goodman 1985)</li> <li>• Moderate (Ariagno 1997)</li> <li>• Moderate (Kleberg 2002)</li> <li>• Moderate (Charpak 2001)</li> <li>• Moderate (Barrera 1986)</li> <li>• Moderate (Casiro 1993)</li> <li>• Moderate (IHDP 1990)</li> <li>• Minimal (Nelson 2001)</li> <li>• Substantial (Nurcombe 1984)</li> <li>• Moderate (Resnick 1987)</li> <li>• Moderate (Resnick 1988)</li> <li>• Substantial (Widmayer 1981)</li> </ul>
Cognitive development in infancy (24 months of age)	<ul style="list-style-type: none"> <li>• Moderate (Ariagno 1997)</li> <li>• Minimal OR substantial (APIP 1998)</li> <li>• Moderate (Bao 1999)</li> <li>• Moderate (IHDP 1990)</li> <li>• Substantial (Rauh 1988)</li> <li>• Moderate (Resnick 1987)</li> <li>• Moderate (Sajaniemi 2001)</li> </ul>
Motor development in infancy (at 6 months of age)	<ul style="list-style-type: none"> <li>• Substantial (Gillette 1991)</li> <li>• Substantial (Nurcombe 1984)</li> <li>• Substantial (Ohgi 2004)</li> <li>• Moderate (Resnick 1988)</li> </ul>
Motor development in infancy (at 12 months of age)	<ul style="list-style-type: none"> <li>• Moderate (Ariagno 1997)</li> <li>• Moderate (Kleberg 2002)</li> <li>• Moderate (Barrera 1986)</li> <li>• Moderate (Casiro 1993)</li> <li>• Moderate (IHDP 1990)</li> <li>• Minimal (Nelson 2001)</li> <li>• Moderate (Resnick 1987)</li> <li>• Moderate (Resnick 1988)</li> <li>• Substantial (Widmayer 1981)</li> </ul>
Motor development in infancy (at 24 months of age)	<ul style="list-style-type: none"> <li>• Moderate (Ariagno 1997)</li> <li>• Moderate (Bao 1999)</li> <li>• Moderate (IHDP 1990)</li> <li>• Moderate (Resnick 1987)</li> </ul>
Cognitive development at preschool age (36 months of age)	<ul style="list-style-type: none"> <li>• Moderate (IHDP 1990)</li> <li>• Substantial (Rauh 1988)</li> </ul>
Cognitive development at school age (5 years)	<ul style="list-style-type: none"> <li>• Moderate (Westrup 2004)</li> <li>• (Minimal OR substantial (APIP 1998)</li> <li>• Moderate (IHDP 1990)</li> </ul>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
All outcomes	<p>Summary: "The intervention programs were diverse and varied in regards to period of application, intensity, <b>setting</b> and parental involvement"</p> <ul style="list-style-type: none"> <li>• 8 studies in NICU/hospital</li> <li>• 8 in home and/or centre</li> <li>• 8 in NICU in combination with home and/or centre</li> </ul>
Cognitive development in infancy (6 months)	<ul style="list-style-type: none"> <li>• Hospital (Charpak 2001)</li> <li>• Home (Gillette 1991)</li> <li>• NICU and home (Melynk 2001)</li> <li>• NICU and home (Nurcombe 1984)</li> <li>• NICU and rehabilitation unit (Ohgi 2004)</li> <li>• NICU and home (Resnick 1988)</li> </ul>

Cognitive development in infancy (12 months of age)	<ul style="list-style-type: none"> <li>• Hospital (Goodman 1985)</li> <li>• NICU (Ariagno 1997)</li> <li>• NICU (Kleberg 2002)</li> <li>• Hospital (Charpak 2001)</li> <li>• Home (Barrera 1986)</li> <li>• Home (Casiro 1993)</li> <li>• Home and centres (IHDP 1990)</li> <li>• NICU and home (Nelson 2001)</li> <li>• NICU and home (Rauh 1988)</li> <li>• NICU and home (Resnick 1987)</li> <li>• NICU and home (Resnick 1988)</li> <li>• NICU and home (Widmayer 1981)</li> </ul>
Cognitive development in infancy (24 months of age)	<ul style="list-style-type: none"> <li>• NICU (Ariagno 1997)</li> <li>• Home (APIP 1998)</li> <li>• Home or group classes (Bao 1999)</li> <li>• Home and centres (IHDP 1990)</li> <li>• NICU and home (Rauh 1988)</li> <li>• NICU and home (Resnick 1987)</li> <li>• Home (Sajaniemi 2001)</li> </ul>
Motor development in infancy (at 6 months of age)	<ul style="list-style-type: none"> <li>• Home (Gillette 1991)</li> <li>• NICU and home (Nurcombe 1984)</li> <li>• NICU and rehabilitation unit (Ohgi 2004)</li> <li>• NICU and home (Resnick 1988)</li> </ul>
Motor development in infancy (at 12 months of age)	<ul style="list-style-type: none"> <li>• NICU (Ariagno 1997)</li> <li>• NICU (Kleberg 2002)</li> <li>• Home (Barrera 1986)</li> <li>• Home (Casiro 1993)</li> <li>• Home and centres (IHDP 1990)</li> <li>• NICU and home (Nelson 2001)</li> <li>• NICU and home (Resnick 1987)</li> <li>• NICU and home (Resnick 1988)</li> <li>• NICU and home (Widmayer 1981)</li> </ul>
Motor development in infancy (at 24 months of age)	<ul style="list-style-type: none"> <li>• NICU (Ariagno 1997)</li> <li>• Home or group classes (Bao 1999)</li> <li>• Home and centres (IHDP 1990)</li> <li>• NICU and home (Resnick 1987)</li> </ul>
Cognitive development at preschool age (36 months of age)	<ul style="list-style-type: none"> <li>• Home and centres (IHDP 1990)</li> <li>• NICU and home (Rauh 1988)</li> </ul>
Cognitive development at school age (5 years)	<ul style="list-style-type: none"> <li>• NICU (Westrup 2004)</li> <li>• Home (APIP 1998)</li> <li>• Home and centres (IHDP 1990)</li> </ul>
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
All outcomes	<p>Review inclusion criteria: the participants were preterm infants (less than 37 weeks gestational age or &lt; 2500 g a birth)</p> <ul style="list-style-type: none"> <li>• Participants ranged in degree of prematurity (means ranged from 25.45 to 35.6 weeks gestation) and birthweight (means ranged from 785 to 2606)</li> <li>• There were study variations in SES of parents (2 studies: Widmayer 1981 and Brown 1980) included preterm infants born to teenage, lower SES, black mothers</li> </ul>
Motor and cognitive development at 6 and 12 months	<p>Subgroup analyses were performed based on high and low risk infants (note: no interaction tests reported):</p> <p>HIGH RISK INFANTS: "A similar range of effects was found, where in general positive findings in the BSID-MDI outweighed the effects in the BSID-PDI"</p> <p>LOW RISK INFANTS: "Again there was a trend towards a greater WMD for BSID-MDI compared with the BSID-PDI at 12 months"</p>

<b>When could be the best time for the intervention, program, or message delivery to occur?</b>	
All outcomes	<p>Summary: "The intervention programs were diverse and varied in regards to <b>period of application, intensity, setting and parental involvement</b>"</p> <ul style="list-style-type: none"> <li>• <b>Period of application:</b> varied from as long as up to 3 years, to as short as in-hospital stay ending at NICU discharge</li> <li>• <b>Intensity of interventions:</b> ranged from daily to monthly</li> </ul>
Cognitive development in infancy (6 months)	<ul style="list-style-type: none"> <li>• Onset: post birth; end: discharge; intensity: continuous (Charpak 2001)</li> <li>• Onset: NR; end: 6 months; intensity: initially monthly, then decreasing in frequency (Gillette 1991)</li> <li>• Onset: 2-4 days after infant was admitted to NICU; end: 1 week; intensity: 4 sessions (Melynck 2001)</li> <li>• Onset: 1 week prior to discharge; end: 3 months; intensity: 11 sessions (Nurcombe 1984)</li> <li>• Onset: prior to discharge from NICU; end: 6 months; intensity: weekly or biweekly sessions (Ohgi 2004)</li> <li>• Onset: NICU; end: 12 months: intensity: 2 sessions a day in NICU, weekly home visits until infant reached adjusted birth day, then bimonthly visits (Resnick 1988)</li> </ul>
Cognitive development in infancy (12 months of age)	<ul style="list-style-type: none"> <li>• Onset and end: NR: intensity: monthly (Goodman 1985)</li> <li>• Onset: Assessment within 12 hours of admission; end: discharge from NICU; intensity: formal assessments every 10 days until discharge (Ariagno 1997)</li> <li>• Assessment within 12 hours of admission; end: discharge from NICU; intensity: formal assessments every 10 days (Kleberg 2002)</li> <li>• Onset: post birth; end: discharge; intensity: continuous (Charpak 2001)</li> <li>• Onset: discharge from NICU; end: 12 months: intensity: weekly 0-4 months, bi-weekly 5-9 months, monthly 9-12 months (Barrera 1986)</li> <li>• Onset: discharge; end: 2 months; intensity: according to need (Casiro 1993)</li> <li>• Onset: discharge from NICU; end: 36 months; intensity: home visits: weekly for 0-12 months, bi-weekly for 13-36 months Child Centre: 5 days/week for 12-36 months; Parent Group: Bimonthly for 12-36 months (IHDP 1990)</li> <li>• Onset: 33 weeks post-conception age; end: 2 months; intensity; 2 sessions a day (Nelson 2001)</li> <li>• Onset: 1 week prior to discharge; end: 3 months; intensity: 11 sessions (Nurcombe 1984)</li> <li>• Onset: NICU; end: 24 months; intensity: continuous in NICU and bi-monthly home visits (Resnick 1987)</li> <li>• Onset: NICU; end: 12 months: intensity: 2 sessions a day in NICU, weekly home visits until infant reached adjusted birth day, then bimonthly visits (Resnick 1988)</li> <li>• Onset: birth; end: 1 month; intensity: at birth and weekly for 1 month post discharge (Widmayer 1981) (Widmayer 1981)</li> </ul>
Cognitive development in infancy (24 months of age)	<ul style="list-style-type: none"> <li>• Onset: Assessment within 12 hours of admission; end: discharge from NICU; intensity: formal assessments every 10 days until discharge (Ariagno 1997)</li> <li>• Onset: discharge from NICU; end: 24 month corrected age; intensity: weekly for first few months, 2-4 weekly for next year, then monthly till 24 months (APIP 1998)</li> <li>• Onset: discharge from NICU; end: 24 months corrected age; intensity: monthly for 0-12 months, bimonthly for 12-24 months (Bao 1999)</li> <li>• Onset: discharge from NICU; end: 36 months; intensity: home visits: weekly for 0-12 months, bi-weekly for 13-36 months Child Centre: 5 days/week for 12-36 months; Parent Group: Bimonthly for 12-36 months (IHDP 1990)</li> <li>• Teaching program for mothers to help mothers adapt to infant (Rauh 1988)</li> <li>• Onset: NICU; end: 24 months; intensity: continuous in NICU and bi-monthly home visits (Resnick 1987)</li> <li>• Onset: 6 months; end: 12 months; intensity: weekly (Sajaniemi 2001)</li> </ul>

<p>Motor development in infancy (at 6 months of age)</p>	<ul style="list-style-type: none"> <li>• (Onset: NR; end: 6 months; intensity: initially monthly, then decreasing in frequency (Gillette 1991)</li> <li>• Onset: 1 week prior to discharge; end: 3 months; intensity: 11 sessions (Nurcombe 1984)</li> <li>• Onset: prior to discharge from NICU; end: 6 months; intensity: weekly or biweekly sessions (Ohgi 2004)</li> <li>• Onset: NICU; end: 12 months: intensity: 2 sessions a day in NICU, weekly home visits until infant reached adjusted birth day, then bimonthly visits (Resnick 1988)</li> </ul>
<p>Motor development in infancy (at 12 months of age)</p>	<ul style="list-style-type: none"> <li>• Onset: Assessment within 12 hours of admission; end: discharge from NICU; intensity: formal assessments every 10 days until discharge (Ariagno 1997)</li> <li>• Assessment within 12 hours of admission; end: discharge from NICU; intensity: formal assessments every 10 days (Kleberg 2002)</li> <li>• Onset: discharge from NICU; end: 12 months: intensity: weekly 0-4 months, bi-weekly 5-9 months, monthly 9-12 months (Barrera 1986)</li> <li>• Onset: discharge; end: 2 months; intensity: according to need (Casiro 1993)</li> <li>• Onset: discharge from NICU; end: 36 months; intensity: home visits: weekly for 0-12 months, bi-weekly for 13-36 months Child Centre: 5 days/week for 12-36 months; Parent Group: Bimonthly for 12-36 months (IHDP 1990)</li> <li>• Onset: 33 weeks post-conception age; end: 2 months; intensity; 2 sessions a day (Nelson 2001)</li> <li>• Onset: NICU; end: 24 months; intensity: continuous in NICU and bi-monthly home visits (Resnick 1987)</li> <li>• Onset: NICU; end: 12 months: intensity: 2 sessions a day in NICU, weekly home visits until infant reached adjusted birth day, then bimonthly visits (Resnick 1988)</li> <li>• Onset: birth; end: 1 month; intensity: at birth and weekly for 1 month post discharge (Widmayer 1981)</li> </ul>
<p>Motor development in infancy (at 24 months of age)</p>	<ul style="list-style-type: none"> <li>• Onset: Assessment within 12 hours of admission; end: discharge from NICU; intensity: formal assessments every 10 days until discharge (Ariagno 1997)</li> <li>• Onset: discharge from NICU; end: 24 months corrected age; intensity: monthly for 0-12 months, bimonthly for 12-24 months (Bao 1999)</li> <li>• Onset: discharge from NICU; end: 36 months; intensity: home visits: weekly for 0-12 months, bi-weekly for 13-36 months Child Centre: 5 days/week for 12-36 months; Parent Group: Bimonthly for 12-36 months (IHDP 1990)</li> <li>• Onset: NICU; end: 24 months; intensity: continuous in NICU and bi-monthly home visits (Resnick 1987)</li> </ul>
<p>Cognitive development at preschool age (36 months of age)</p>	<ul style="list-style-type: none"> <li>• Onset: discharge from NICU; end: 36 months; intensity: home visits: weekly for 0-12 months, bi-weekly for 13-36 months Child Centre: 5 days/week for 12-36 months; Parent Group: Bimonthly for 12-36 months (IHDP 1990)</li> <li>• Teaching program for mothers to help mothers adapt to infant (Rauh 1988)</li> </ul>
<p>Cognitive development at school age (5 years)</p>	<ul style="list-style-type: none"> <li>• Onset: Assessment within 12 hours of admission; end: discharge from NICU; intensity: formal assessments every 10 days (Westrup 2004)</li> <li>• Onset: discharge from NICU; end: 24 month corrected age; intensity: weekly for first few months, 2-4 weekly for next year, then monthly till 24 months (APIP 1998)</li> <li>• Onset: discharge from NICU; end: 36 months; intensity: home visits: weekly for 0-12 months, bi-weekly for 13-36 months Child Centre: 5 days/week for 12-36 months; Parent Group: Bimonthly for 12-36 months (IHDP 1990)</li> </ul>



How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	
All outcomes	<p>Summary: "The intervention programs were diverse and varied in regards to period of application, intensity, setting and parental involvement"</p> <ul style="list-style-type: none"> <li>• 5 involved NIDCAP</li> <li>• 1 involved kangaroo care</li> <li>• Remainder: variety of developmental interventions</li> </ul>
Motor and cognitive development at 6 and 12 months	<p>Subgroup analyses were performed based on types of developmental intervention (note: no interaction tests reported):</p> <p>NIDCAP: "Similarly, the positive findings at 12 months in BSID-MDI outweighed the effects in BSID-PDI"</p> <p>OTHER: "The range of effects measured from 12 months to 5 years, peaked at 24 months for BSID-MDI (WMD, 7.43, 95% CI , 3.12, 11.75) compared with a WMD of 3.28 (95% CI -1.94, 8.50) for BSID-PDI at the same age, and by the age of 5 years had decreased to insignificant differences"</p>
Cognitive development in infancy (6 months)	<ul style="list-style-type: none"> <li>• Kangaroo mother care (Charpak 2001)</li> <li>• Education on the benefits of early interventions and referrals plus counselling services (Gillette 1991)</li> <li>• Educational-behavioural program for parents on infant cognitive development and maternal coping (Melynk 2001)</li> <li>• Teaching program for mothers to help mothers adapt to infant (Nurcombe 1984)</li> <li>• Neonatal Behavioural Assessment scale-based intervention and developmental support (Ohgi 2004)</li> <li>• Developmental intervention plus parental support (Resnick 1988)</li> </ul>
Cognitive development in infancy (12 months of age)	<ul style="list-style-type: none"> <li>• Neurodevelopmental therapy and home exercise program (Goodman 1985)</li> <li>• NIDCAP (Ariagno 1997)</li> <li>• NIDCAP (Kleberg 2002)</li> <li>• Kangaroo mother care (Charpak 2001)</li> <li>• Developmental intervention focused on improving child development through specific curriculum activities OR parent-Infant intervention focused on improving child-parent interaction by enhancing observational skills, sensitivity and mutuality (Barrera 1986)</li> <li>• Public health nursing (home visits and phone calls) and homemaker services (Casiro 1993)</li> <li>• Home visits, child development centres and parent group meetings (IHDP 1990)</li> <li>• Multisensory (auditory-tactile-visual-vestibular) intervention (Nelson 2001)</li> <li>• Teaching program for mothers to help mothers adapt to infant (Rauh 1988)</li> <li>• Developmental intervention plus parental education and counselling (Resnick 1987)</li> <li>• Developmental intervention plus parental support (Resnick 1988)</li> <li>• Teaching program for mothers using the Brazelton assessment scale and Mother's Assessment of Behaviour of her Infant scale OR Teaching program for mothers using the Mother's Assessment of Behaviour of her Infant scale (Widmayer 1981)</li> </ul>
Cognitive development in infancy (24 months of age)	<ul style="list-style-type: none"> <li>• NIDCAP (Ariagno 1997)</li> <li>• Developmental education programme focused on developmental progress of the child OR parental support/non-directional counselling (APIP 1998)</li> <li>• Developmental education programme for parents (promoting motor, cognitive, speech development and social behaviour) (Bao 1999)</li> <li>• Home visits, child development centres and parent group meetings (IHDP 1990)</li> <li>• Teaching program for mothers to help mothers adapt to infant (Rauh 1988)</li> <li>• Developmental intervention plus parental education and counselling (Resnick 1987)</li> </ul>

	<ul style="list-style-type: none"> <li>Occupational therapy intervention aimed at supporting parent-child interaction and enhancing motor control and coordination (Sajaniemi 2001)</li> </ul>
Motor development in infancy (at 6 months of age)	<ul style="list-style-type: none"> <li>Education on the benefits of early interventions and referrals plus counselling services (Gillette 1991)</li> <li>Teaching program for mothers to help mothers adapt to infant (Nurcombe 1984)</li> <li>Neonatal Behavioural Assessment scale-based intervention and developmental support (Ohgi 2004)</li> <li>Developmental intervention plus parental support (Resnick 1988)</li> </ul>
Motor development in infancy (at 12 months of age)	<ul style="list-style-type: none"> <li>NIDCAP (Ariagno 1997)</li> <li>NIDCAP (Kleberg 2002)</li> <li>Developmental intervention focused on improving child development through specific curriculum activities OR parent-Infant intervention focused on improving child-parent interaction by enhancing observational skills, sensitivity and mutuality (Barrera 1986)</li> <li>Public health nursing (home visits and phone calls) and homemaker services (Casiro 1993)</li> <li>Home visits, child development centres and parent group meetings (IHDP 1990)</li> <li>Multisensory (auditory-tactile-visual-vestibular) intervention (Nelson 2001)</li> <li>Developmental intervention plus parental education and counselling (Resnick 1987)</li> <li>Developmental intervention plus parental support (Resnick 1988)</li> <li>Teaching program for mothers using the Brazelton assessment scale and Mother's Assessment of Behaviour of her Infant scale OR teaching program for mothers using the Mother's Assessment of Behaviour of her Infant scale (Widmayer 1981)</li> </ul>
Motor development in infancy (at 24 months of age)	<ul style="list-style-type: none"> <li>NIDCAP (Ariagno 1997)</li> <li>Developmental education programme for parents (promoting motor, cognitive, speech development and social behaviour) (Bao 1999)</li> <li>Home visits, child development centres and parent group meetings (IHDP 1990)</li> <li>Developmental intervention plus parental education and counselling (Resnick 1987)</li> </ul>
Cognitive development at preschool age (36 months of age)	<ul style="list-style-type: none"> <li>Home visits, child development centres and parent group meetings (IHDP 1990)</li> <li>Teaching program for mothers to help mothers adapt to infant (Rauh 1988)</li> </ul>
Cognitive development at school age (5 years)	<ul style="list-style-type: none"> <li>NIDCAP (Westrup 2004)</li> <li>Developmental education programme focused on developmental progress of the child OR parental support/non-directional counselling (APIP 1998)</li> <li>Home visits, child development centres and parent group meetings (IHDP 1990)</li> </ul>
How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID: Bayley Scale of Infant Development; CI: confidence interval; g: grams; Griffiths: Griffiths Mental Development Scale; het: heterogeneity; MD: mean difference; MDI: Mental Development Index; McCarthy: McCarthy Scales of Children's Abilities; N: number; NICU: neonatal intensive care unit; NIDCAP: Neonatal Individualised Developmental Care and Assessment Programme; NR: not reported; NS: not significant; P: P value; PDI: Psychomotor Development Index; qRCT: quasi-randomised controlled trial; (R): random effects; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; Stanford-Binet: Stanford-Binet Intelligence Scale; WPPSI-R: Weschler Preschool and Primary Scale of Intelligence

## Interventions for teenage parents

**Table 54: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review	
		Barlow 2011	Coren 2003
Study ID	Badger 1981		✓ (RCT, N=48)
	Black 1997	✓ (RCT, N=64)	✓ (RCT, N=59)
	Britner 1997		✓ (2 group pre-test and post-test non-equivalent control group design, N=535)
	Censullo 1994		✓ (pre- and post-test design, N=12)
	Dickenson 1992		✓ (2 group pre-test and post-test non-equivalent control group design, N=203)
	Emmons 1994		✓ (2 group pre-test and post-test non-equivalent control group design, N=28)
	Fulton 1991		✓ (pre- and post-test design, N=76)
	Kissman 1992		✓ (2 group pre-test and post-test with matched control group, N=119)
	Koniak-Griffin 1992	✓ (RCT, N=31)	✓ (RCT, N=31)
	Lagges 1999	✓ (cRCT, N=62)	✓ (cRCT, N=62)
	Letourneau 2001	✓ (RCT, N=24)	
	Ricks-Saulsby 2001	✓ (RCT, N=60)	
	Roosa 1984		✓ (pre- and post-test design, N=79)
	Stirtzinger 2002	✓ (RCT, N=20)	
	Treichel 1995		✓ (pre- and post-test design, N=79)
	Truss 1977	✓ (RCT, N=164)	✓ (RCT, N=127)
	Weinman 1992		✓ (pre- and post-test design, N=73)
Wiemann 1990	✓ (RCT, N=88)		

**Abbreviations:** cRCT: cluster randomised controlled trial; N: number; RCT: randomised controlled trial

**Table 55: Evidence table for Barlow 2011<sup>37</sup>**

<b>Review ID</b>	Barlow 2011
<b>Search date</b>	1872 to May 2010
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	8 studies (RCTs)
<b>No. participants in relevant studies</b>	513
<b>Location/setting</b>	Canada: 2 RCTs; USA: 6 RCTs
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 9/11 ('high' quality)
<b>Quality of relevant studies</b>	Review authors' summary: poor quality of evidence with many threats to internal validity and significant risk of bias

<sup>37</sup> green shading indicates results significantly in favour of the intervention

<b>Review objective</b>	To assess the effectiveness of parenting programs in improving psychosocial outcomes for teenage parents and developmental outcomes in their children	
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs and qRCTs; <u>participants</u> : parents aged 20 or under from clinical or population samples, and their children; <u>interventions and comparisons</u> : parenting programs meeting the following criteria: individual or group-based format; antenatally and postnatally or just postnatally to teenage mothers or fathers; based on a structured format; focusing on improving parenting attitudes, practices, skills/knowledge or wellbeing (excluding programs where the parenting program was combined with a home visiting intervention (though manualised, short-term (< 20 week) programs delivered on a 1-2-1 basis were eligible)); the comparison group could be a waiting-list or no-treatment group; <u>outcomes</u> : parental psychosocial outcomes (psychosocial health, parenting knowledge, parenting behaviours and skills); child health and development outcomes (cognitive development, interaction with parent); combined parent-child relationship outcomes (parent-child interaction)	
<b>Participant population</b>	Adolescent mothers or adolescents who were pregnant, and their infants. Mean age 17 years (note: in 2 studies the age of infants/very young children was unclear)	
<b>Intervention</b>	Individual or group-based parenting programs delivered in community settings (4 RCTs); participants homes (2 RCTs); in both the community and outpatient setting (1 RCT); not specified (1 RCT); 4 RCTs evaluated the effectiveness of group-based parenting programs over 4-12 weeks; 4 RCTs evaluated briefer interventions, mostly observation of video tape interactions over short periods (i.e. 1-2 sessions) (3 RCTs) or a more extended period (6-7 weeks) (1 RCT); overall interventions ranged in duration from 1 session, to 10-12 weeks	
<b>Comparator</b>	No treatment or treatment as usual control	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Single study results</b>		
Bzoch-League REEL Receptive Language Score at 1 and 2 years	Non-significant (1 RCT, N=95 at 1 year; N=49 at 2 years)	
Bzoch-League REEL Expressive Language Score at 1 and 2 years	Significant in favour of intervention at 2 years (1 RCT, N=49) Non-significant at 1 year (1 RCT, N=95)	
Language development: UTLD at 2 years	Non-significant (1 RCT, N=45)	
Development: BSID-MDI at follow up	Non-significant (1 RCT, N=15)	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Parent-infant relationship</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Pooled results</b>		
Parent interaction with child: NCATS – Parent subscale (post-intervention, up to 6 weeks, and 3 month follow up)	SMD (F): -0.91 (95% CI -1.52, -0.30); I <sup>2</sup> 0%; P=0.0036 (2 RCTs, N=46)	
	SMD (R): -6.11 (95% CI -16.99, 4.77); I <sup>2</sup> 95%; P=0.27 (2 RCTs, N=47)	
Child interaction with parent: NCATS – Baby subscale at 3 month follow up)	SMD (F): -0.65 (95% CI -1.25, -0.06); I <sup>2</sup> 0%; P=0.031 (2 RCTs, N=47)	
Combined parent-child interaction: NCAFS – Total score (post-intervention, up to 6 weeks, and 3 month follow up)	SMD (F): -0.71 (95% CI -1.31, -0.11); I <sup>2</sup> 0%; P=0.021 (2 RCTs, N=46)	
	SMD (F): -0.90 (95% CI -1.51, -0.30); I <sup>2</sup> 0%; P=0.0036 (2 RCTs, N=47)	

<b>Single study results</b>	
Parent interaction with child (various scales: PCERA; NCATS; NCAFS): 5 outcomes (post-intervention and/or follow up) from 3 trials	Significant in favour of intervention for 4/5 outcomes (3/3 RCTs) Non-significant for 1/5 outcomes (1/3 RCTs)
Child interaction with parent: NCATS: 3 outcomes (2 trials)	Non-significant for 3/3 outcomes (2/2 RCTs)
Combined parent-child interaction: (NCATS; NCAFS): 5 outcomes (post-intervention and/or follow up) from 2 trials	Significant in favour of intervention for 4/5 outcomes (2/2 RCTs) Non-significant for 1/5 outcomes (1/2 RCTs)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Depressive symptoms: BDI	Non-significant (N=16)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Sense of competence in parenting role: AAPI – Appropriate developmental expectation of children (post-intervention, at 4 to 7 weeks)	SMD (R): 0.17 (95% CI -0.96, 1.30); I <sup>2</sup> 81%; P=0.77 (2 RCTs, N=70)
Sense of competence in parenting role: AAPI – Empathic awareness (post-intervention, at 4 to 7 weeks)	SMD (R): 0.02 (95% CI -1.46, 1.50); I <sup>2</sup> 89%; P=0.98 (2 RCTs, N=69)
Sense of competence in parenting role: AAPI – Non-belief in corporal punishment (post-intervention, at 4 to 7 weeks)	SMD (F): 0.26 (95% CI -0.22, 0.73); I <sup>2</sup> 0%; P=0.29 (2 RCTs, N=69)
Sense of competence in parenting role: AAPI – Lack of parent child role reversal (post-intervention, at 4 to 7 weeks)	SMD (F): 0.09 (95% CI -0.38, 0.56); I <sup>2</sup> 0%; P=0.71 (2 RCTs, N=70)
<b>Single study results</b>	
Sense of competence in parenting role (various scales: AYCEQ; PAQ; NPIS; PS-CS; AAPI; RSES): 25 outcomes (post-intervention and/or follow up) from 5 trials	Significant in favour of intervention for 6/25 outcomes (3/5 RCTs) Non-significant for 19/25 outcomes (4/5 RCTs)
Knowledge of parenting skills: PKT	Significant in favour of intervention (N=50)
Knowledge of child development: KIDI ( total correct, incorrect, 'not sure'): 3 outcomes	Non-significant for 3 outcomes (N=31)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Parent interaction with child; child interaction with parent; combined parent-child interaction (NCATS/NCAFS)	<ul style="list-style-type: none"> <li>Intervention delivered by nurses (Koniak-Griffin 1992; Letourneau 2001).</li> </ul>
Sense of competence in in parenting role (AAPI)	<ul style="list-style-type: none"> <li>Who delivered the intervention in these studies was not clear (Ricks-Saulsby 2001; Wiemann 1990)</li> </ul>
<b>Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Parent interaction with child; child interaction with parent; combined parent-child interaction (NCATS/NCAFS)	<ul style="list-style-type: none"> <li>USA, recruitment from a residential maternity home, delivery of program in participants' homes (Koniak-Griffin 1992)</li> <li>Canada, recruitment from a school-based program for teen parents, delivery of program in participants' homes (Letourneau 2001)</li> </ul>
Sense of competence in in parenting role (AAPI)	<ul style="list-style-type: none"> <li>USA, women recruited from a community setting ('South Side Help Centre'), delivery in community setting (Ricks-Saulsby 2001)</li> <li>USA, women recruited from a range of settings (high school, via a hospital community health nurse, healthy clinic and social service agency), delivery in community and outpatient settings (Wiemann 1990)</li> </ul>

<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Parent interaction with child; child interaction with parent; combined parent-child interaction (NCATS/NCAFS)	<ul style="list-style-type: none"> <li>• Single, predominately first-time black, Hispanic or white mothers following a normal birth (mean age 17 years) (Koniak-Griffin 1992)</li> <li>• First-time mothers, following a healthy birth (mean age 18 years) (Letourneau 2001)</li> </ul>
Sense of competence in in parenting role (AAPI)	<ul style="list-style-type: none"> <li>• Single, predominately African-American mothers living with parents, following a normal birth (mean age of 17 years) (Ricks-Saulsby 2001)</li> <li>• Predominately white, first-time mothers of low SES (mean age of 18 years) (Wiemann 1990)</li> </ul>
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
Parent interaction with child; child interaction with parent; combined parent-child interaction (NCATS/NCAFS)	<ul style="list-style-type: none"> <li>• 1 visit intervention (“likely that duration was a few hours”) with follow up 4 weeks later (Koniak-Griffin 1992)</li> <li>• 6 weeks duration, with follow up 4-5 weeks later (Letourneau 2001)</li> </ul>
Sense of competence in in parenting role (AAPI)	<ul style="list-style-type: none"> <li>• 4 weeks with no follow up (Ricks-Saulsby 2001)</li> <li>• 6-7 weeks with no follow up (Wiemann 1990)</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	
Parent interaction with child; child interaction with parent; combined parent-child interaction (NCATS/NCAFS)	<ul style="list-style-type: none"> <li>• Individual-based educational video-tape modelling parent program, with the use of two structured teaching tasks during the session; instruction and feedback were provided, with discussion on infant cues, maternal response to infant distress and the use of language (Koniak-Griffin 1992)</li> <li>• ‘Keys to Caregiving’ program– a manualised program designed to improve interaction and responsiveness, with an information pamphlet provided before each home visit (Letourneau 2001)</li> </ul>
Sense of competence in in parenting role (AAPI)	<ul style="list-style-type: none"> <li>• Group-based educational active learning parent program (with demonstration and practice of parenting skills), compared with a group-based passive learning program (with audio-visual-only education), and a no-treatment control. Parenting skills covered included: appropriate developmental expectations, empathy for children’s needs, alternatives to corporal punishment and family roles (Ricks-Saulsby 2001)</li> <li>• Group-based audio-visual parent education program compared with booklet only education, an audio-visual and booklet program, and a treatment-as-usual control. The education programs included content on play activity and infant stimulation, stress and coping strategies, discipline strategies, nutrition and feeding tips, formal and informal support systems, and development in early childhood (Wiemann 1990)</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
<b>What</b> could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
<b>What</b> could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; AYCEQ: About Your Child’s Eating Questionnaire; AAPI: Adult Adolescent Parenting Inventory; BDI: Beck Depression Inventory; BSID: Bayley Scale of Infant Development; CI: confidence interval; (F); fixed effect; KIDI: Knowledge of Infant Development Inventory; KIDS: Knowledge Inventory of Child Development and Behaviour (Infancy to School); MDI: Mental Development Index; N: number; NCAFS: Nursing Child Assessment Feeding Scale; NCATS: Nursing Child Assessment Teaching Scale; NPIS: Neonatal Perceptions Inventory Scale; NR: not reported; P value; PAQ: Parental Attitude Questionnaire; PCERA: Parent Child Early Relational Assessment; PKT: Parenting Knowledge Test; PS-CS: Pharis Self-Confidence in Infant Care; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial; REEL: Receptive Expressive Emergent Language; ROBIS: Risk of Bias in Systematic Reviews; RSES: Rosenberg Self-Efficacy Scale; SMD: Standardised Mean Difference; UTLD: Utah Test of Language Development USA: United States of America

**Table 56: Evidence table for Coren 2003<sup>38</sup>**

<b>Review ID</b>	Coren 2003	
<b>Search date</b>	NR in review (refers also to published methods in: Coren, E., & Barlow, J. (2001). Individual and group-based parenting programmes for improving psychosocial outcomes for teenage parents and their children (Cochrane Review). Issue 3, 2001 (due July 2001) Oxford: Update Software Cochrane Library)	
<b>Review method</b>	Narrative synthesis ( <i>"Due to significant heterogeneity, the results were not combined in a metaanalysis"</i> )	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	14 studies (5 RCTs; 4 non-randomised controlled studies; 5 1-group pre- and post-test studies)	
<b>No. participants in relevant studies</b>	1,531	
<b>Location/setting</b>	USA	
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 6/11 ('moderate' quality)	
<b>Quality of relevant studies</b>	Review authors' summary: method of allocation concealment not specified for 4 RCTs; 'limitations' noted for each study including lack of randomisation (9 studies) and no control group (6 studies)	
<b>Review objective</b>	The examine the effectiveness of individual and/or group-based parenting programs in improving psychosocial and developmental outcomes in teenage mothers and their infants	
<b>Review eligibility criteria</b>	Participants/interventions/outcomes: parenting programs; individual or group format; antenatal or postnatally to pregnant or parenting teenagers (less than 20 years); based on a structured format; focusing on improvement in parenting attitudes, practices, skills or knowledge	
<b>Participant population</b>	Teenage parents and their infants	
<b>Intervention</b>	Individual and group-based parenting programs: group-based programs (10 studies); 1-2-1 programs (3 studies); booklets mailed to parents (1 study). Delivered across a range of settings: schools (4 studies); health settings (3 studies); residential maternity homes (1 study); community health clinics and family support centres (2 studies); home (3 studies); home and community health service (1 study); intervention durations/intensities (when reported) ranged from 1, 15 minute video session delivered one-to-one, to 1 year of 1.5 hour weekly group parenting sessions	
<b>Comparator</b>	No treatment or treatment as usual control (where applicable); 1 trial compared group-based parenting program with home visiting	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<i>Single study results</i>		
Bzoch-League REEL Receptive Language Score at 1 year	ES: -0.52 (CI -1.13, 0.09) (1 RCT, N=95)	
Bzoch-League REEL Expressive Language Score at 1 year	ES: -0.24 (CI -0.84, 0.37) (1 RCT, N=95)	
Language development: UTLD at 2 years	ES: -0.24 (CI -0.91, 0.50) (1 RCT, N=45)	
Uzgiris-Hunt Ordinal Scales of Infant Development; BSID Mental Scale; BSID Motor Scale	<i>"Significantly better"</i> in intervention group (1 RCT, N=48)	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

<sup>38</sup> green shading indicates results significantly in favour of the intervention

<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Parent interaction with child (various scales: PCERA; NCATS): 3 outcomes from 2 trials	Significant in favour of intervention for 3 outcomes (1 RCT, N=59; 1 RCT, N=31; 1 RCT, N=31)
Child interaction with parent: NCATS: 2 outcomes	Non-significant for 2 outcomes (1 RCT, N=31)
Combined parent-child interaction: NCATS	ES: -0.79 (CI -1.53, -0.06) (1 RCT, N=31)
Maternal involvement with child (HOME Screening Questionnaire) 'No risk scores'	Significant in favour of intervention (1 2 group pre-test and post-test non-equivalent control group study, N=203)
Mother-infant responsiveness (Dyadic Mutuality Code)	ES: 2.2 (1 pre- and post-test study, N=12)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Sense of competence in parenting role (various scales: AYCEQ; PAQ; NPIS; PS-CS): 4 outcomes from 3 trials	Significant in favour of intervention for 2/4 outcomes (1 RCT, N=59; 1 RCT, N=31) Non-significant for 2/4 outcomes (1 RCT, N=50; 1 RCT, N=31)
Maternal satisfaction with life scale	Intervention ES: 1.12; Control ES: 0 (1 2 group pre-test and post-test with matched control group, N=119)
Maternal attitudes to parenting (Segal Scale)	Intervention ES: 1.0; Control ES: 0.1 (2 group pre-test and post-test with matched control group, N=119)
Maternal attitudes towards discipline and authority (Attitude Towards the Freedom of Children Scale)	Intervention ES: 1.2; Control 1 ES -0.5; Control 2 ES: 0.2 (1 2 group pre-test and post-test non-equivalent control group design, N=28)
Maternal self-esteem (Coopersmith Self-Esteem Inventory)	Intervention ES: 1.1; Control 1 ES 0.2; Control 2 ES: -0.1 (2 group pre-test and post-test non-equivalent control group design, N=28)
Parenting attitudes and expectations: AAPI	Intervention ES: 0.7; Control ES: NR (1 2 group pre-test and post-test non-equivalent control group design, N=535)
Parenting attitudes and expectations: AAPI (4 outcomes: inappropriate expectations; lack of empathy; belief in corporal punishment; parent-child role reversal) in 2 studies	ES: range 0.3 – 0.7 for 8 outcomes across 2 studies (1 pre- and post-test study, N=73; 1 pre- and post-test study, N=79)
Parenting attitudes: Maternal Attitudes Scale (3 outcomes: Satisfaction Subscale; Encouragement of Interaction Subscale; Maternal Anxiety Subscale)	ES: range 0.1 – 0.2 (1 pre- and post-test study, N=79)
Maternal self-esteem (2 outcomes: RSES; Coopersmith Self-Esteem Inventory) in 2 studies	ES: 0.5 (N=12); ES: no significant change (1 pre- and post-test study, N=76)
Parenting self-efficacy (Parental Self-Efficacy Scale)	ES: 0.2 (1 pre- and post-test study, N=12)
Parenting attitudes (CAPI)	Significantly improved post-intervention (1 pre- and post-test study, N=76)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Knowledge of parenting skills: PKT	Significant in favour of intervention (1 RCT, N=50)
Maternal knowledge about child development (2 outcomes: non-standardised instrument; KIDS) in 2 studies	Significantly improved post-intervention in 2 studies (1 pre- and post-test study, N=79; N=76)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; AYCEQ: About Your Child's Eating Questionnaire; AAPI: Adult Adolescent Parenting Inventory; CAPI: Child Abuse Potential Inventory; CI: confidence interval; ES: Effect Size; HOME: Home Observation for Measurement of the Environment; KIDS: Knowledge Inventory of Child Development and Behaviour (Infancy to School); NCATS: Nursing Child Assessment Teaching Scale; N: number; NR: not reported; NPIS: Neonatal Perceptions Inventory Scale; PAQ: Parental Attitude Questionnaire; PCERA: Parent Child Early



Relational Assessment; PKT: Parenting Knowledge Test; PS-CS: Pharis Self-Confidence in Infant Care; RCT: randomised controlled trials; REEL: Receptive Expressive Emergent Language; ROBIS: Risk of Bias in Systematic Reviews; RSES: Rosenberg Self-Efficacy Scale; USA: United States of America; UTLD: Utah Test of Language Development

## Interventions for parents from low and middle income countries

**Table 57: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review			
		Grantham-McGregor 2014	Knerr 2013	Mejia 2012	Rahman 2013
Study ID	Aracena 2009		✓ (RCT, N=104)	✓ (RCT, N=90)	
	Cooper 2002				✓ (historical matched control, N=72)
	Cooper 2009		✓ (RCT, N=449)	✓ (RCT, N=449)	✓ (RCT, N=449)
	Gao 2010, 2012				✓ (RCT, N=194)
	Ho 2009				✓ (alternate assignment, N=200)
	Hughes 2009				✓ (RCT, N=422)
	Jin 2007		✓ (RCT, N=100)	✓ (RCT, N=100)	
	Lara 2010				✓ (RCT, N=367)
	Lozoff 2010	✓ (RCT, N=277)			
	Mao 2012				✓ (RCT, N=240)
	Nahar 2009	✓ (time-lagged controlled study, not randomised, N=110)			
	Nahar 2012 (Hossain 2011)	✓ (RCT, N=507)			
	Rahman 2008				✓ (cRCT, N=903)
	Rahman 2009		✓ (cRCT, N=334)	✓ (cRCT, N=309)	✓ (cRCT, N=334)
	Rojas 2007				✓ (RCT, N=230)
	Tripathy 2010				✓ (cRCT, N=NR, N=19,030)
	Vazir 2013	✓ (cRCT, N=600)			
Waber 1981 (Mora 1981)	✓ (RCT, N=433)				
Wendland-Carro 1999		✓ (RCT, N=38)	✓ (RCT, N=38)		

**Abbreviations:** cRCT: cluster randomised controlled trial; N: number; N: not reported; RCT: randomised controlled trial

**Table 58: Evidence table for Grantham-McGregor 2014<sup>39</sup>**

<b>Review ID</b>	Grantham-McGregor 2014
<b>Search date</b>	January 2000 to January 2013 (and earlier papers identified in literature searches for the Lancet series)
<b>Review method</b>	Narrative synthesis, with presentation of ES for individual and combined interventions
<b>Ongoing studies</b>	NR
<b>No. studies of relevance of this Overview and their design(s)</b>	20 studies included; 5 studies relevant (4 RCTs; 1 time-lagged controlled study)
<b>No. participants in relevant studies</b>	507 recently hospitalised infants; 433 families with pregnant women in the 3 <sup>rd</sup> trimester; 600 pregnant women; 277 infants; 110 infants; total N=1,927
<b>Location/setting</b>	Bangladesh: 2 studies; Chile: 1 study; Colombia: 1 study; India: 1 study
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 3/11 ('low' quality)
<b>Quality of relevant studies</b>	"Only papers... rated as moderate-to-good quality were included" (according to McMaster University Effective Public Health Practice Project Quality Assessment Tool For Quantitative Studies); no further details on study quality provided

<sup>39</sup> green shading indicates results significantly in favour of the intervention

<b>Review objective</b>	To assess the effectiveness of integrated nutrition and stimulation programs; in children under 5 years of age in low and middle income countries; what are the individual effects of nutrition and psychological stimulation on cognitive, language, motor and socio-emotional development, nutritional status and/or health? How are these effects changed when the interventions are combined; and what are the effects of integrated programs?
<b>Review eligibility criteria</b>	<b>Designs:</b> studies with a control group of similar background using some method of statistical control for participation; <b>participants:</b> children 5 years and under and/or pregnant women, in developing countries (low or middle income); <b>interventions:</b> interventions with at least 2 components (nutrition and stimulation); <b>outcomes:</b> studies with a child development and a health or nutrition outcome measure; <b>other:</b> studies rated as being of “moderate” or “good” quality, or using econometric methods acceptable for assessing causality (e.g. propensity score matching)
<b>Participant population</b>	Pregnant women (2 studies) and/or infants (3 studies) in developing countries (low- or middle-income countries); all studies included predominately undernourished infants
<b>Intervention</b>	All interventions had at least 2 components: nutrition (e.g. micronutrient and/or macronutrient supplementation, nutrition education, breastfeeding promotion, or responsive feeding) and stimulation (e.g. centre-based preschool and day care, parents groups, individual parent counselling or home visiting) (see below); durations of interventions ranged from 3 months to 30 months (until child was 3 years)
<b>Comparator</b>	Various (see below)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (showing the effect of combined interventions: 2 groups)</b>	
Child development: social responsiveness	1 RCT, N=277: iron-deficient anaemic and non-anaemic, with 2 groups: surveillance visits with oral-iron only; intervention visits (weekly home visits to support the child-mother relationship (stimulation)) and oral iron Stimulation significant associated with improved positive social responsiveness scores (Behaviour Rating Scale) among children with iron-deficiency anaemia (but these children did not catch up with the non-iron deficient anaemic children) No effect of stimulation in non-anaemic children
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (RCTs showing the effect of individual and combined intervention components: ≥ 3 groups)</b>	
Child development and nutrition/health: mental and motor development and growth outcomes	1 RCT, N=507: with 5 groups: psychosocial stimulation; nutritional supplementation; both interventions; clinic controls; hospital controls Stimulation-only group and combined intervention group compared to all other groups benefited mental scores (BSID-II): ES (d): 0.37 (P=0.02); no effect on motor scores (BSID-II) At 6 months, stimulation-only group and combined intervention group compared to all other groups showed better WAZ: ES (d): 0.26 (P=0.08) None of the interventions independently benefited BSID-II scores (mental and motor)
Child development and nutrition/health: mental and motor development and growth outcomes	1 RCT, N=433: with 6 study arms: supplemented from 6 months to 3 years; supplemented from 3 <sup>rd</sup> trimester to 6 months; supplemented from 3 <sup>rd</sup> trimester to 3 years; no supplement with maternal parenting education; supplemented from 6 months to 3 years with maternal parenting education; no treatment Maternal parenting education groups compared with groups receiving no education produced better speech and language scores on GMDS test: ES (d): 0.44 (P=0.049), and highest maximum score on Corman-Escalona Einstein Scale (cognitive competence): ES (d): 0.79 (P<0.001) The 2 interventions (supplementation and maternal education) did not interact on the GMDS; significant interaction between supplementation and maternal education on highest maximum score in Einstein prehension scale: ES (d): 0.42 (P=0.047) (object and spatial scales not significant) Stimulation benefited reading only in boys at 6 year follow up (P=0.07)

<p>Child development and nutrition/health: mental and motor development and growth outcomes</p>	<p>1 RCT, N=60 villages with 600 pregnant women: with 3 groups: nutritional education; nutritional education with responsive feeding and child developmental intervention; control</p> <p>Education and play associated with improved mental scores (BSID-II): ES (d): 0.36 (P=0.03)</p> <p>Education-only compared to control showed significant association with growth in HAZ: ES (d): 0.23</p> <hr/> <p>Education-only compared to control showed no significant difference in mental scores (BSID-II)</p> <p>Motor development (BSID-II) differences all not significant</p> <p>Education and play compared to control showed no significant difference for growth in HAZ</p> <p>WAZ, growth in WAZ, WT/HT and HAZ all not significant at 15 months</p> <p>Education-only compared to education and play showed no significant difference in growth in HAZ</p>
<p><b>Single study results (showing the effect of combined interventions: 2 groups)</b></p>	
<p>Child development and nutrition/health: mental and motor development</p>	<p>1 RCT, N=277: iron-deficient anaemic and non-anaemic, with 2 groups: surveillance visits with oral-iron only; intervention visits (weekly home visits to support the child-mother relationship (stimulation)) and oral iron</p> <p>Stimulation significantly associated with improved mental scores in children with iron-deficiency anaemia (BSID)</p> <hr/> <p>Motor scores all not significant (BSID)</p> <p>No effect of stimulation in non-anaemic children</p>
<p>Child development and nutrition/health: mental and motor development and growth outcomes</p>	<p>1 time-lagged controlled study, N=110: with 2 groups: controls were all eligible infants admitted in the 1<sup>st</sup> 10 months of study, who received usual treatment (basic health and nutritional care); for the next 11 months infants received usual treatment and 'stimulation' intervention (daily individual and group play sessions in hospital; after leaving hospital 18 play sessions over 6 months)</p> <p>Stimulation improved mental scores (BSID): ES (d): 0.97 (P&lt;0.001) and motor scores (BSID): ES (d): 0.56 (P=0.02) at 6 month follow up</p> <p>Stimulation improved WAZ: ES (d): 0.52 (P=0.03) at 6 month follow up</p> <hr/> <p>No significant difference between groups in BSID-II scores on leaving hospital</p> <p>No significant differences between groups on measures on growth on leaving hospital</p> <p>No significant effect on WLZ or LAZ at 6 month follow up</p>
<p><b>Behaviour for the infant, as a child, and up to 18 years</b></p>	
<p><b>Outcome measure used in the review</b></p>	<p><b>Results reported in the review</b></p>
<p><b>Single study results (showing the effect of combined interventions: 2 groups)</b></p>	
<p>Child development and nutrition/health: behaviour</p>	<p>1 time-lagged controlled study, N=110: with 2 groups: controls were all eligible infants admitted in the 1<sup>st</sup> 10 months of study, who received usual treatment (basic health and nutritional care); for the next 11 months infants received usual treatment and 'stimulation' intervention (daily individual and group play sessions in hospital; after leaving hospital 18 play sessions over 6 months)</p> <p>No significant effect on behaviour ratings</p>
<p><b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b></p>	
<p><b>Outcome measure used in the review</b></p>	<p><b>Results reported in the review</b></p>
<p><b>Single study results (RCTs showing the effect of individual and combined intervention components: ≥ 3 groups)</b></p>	
<p>Child development and nutrition/health: morbidity</p>	<p>1 RCT, N=60 villages with 600 pregnant women: with 3 groups: nutritional education; nutritional education with responsive feeding and child developmental intervention; control</p> <p>Education-only compared to control showed reduced episodes of morbidity: ES (d): -0.73 (P&lt;0.001)</p> <p>Education and play compared to control showed reduced episodes of morbidity: ES (d): -0.64 (P=0.001)</p> <p>(Education-only compared to education and play showed no significant difference in morbidity)</p> <p>Both interventions (education-only and education and play) compared to control associated with better child diet diversity and change in haemoglobin: ES (d): 0.21 (P&lt;0.05)</p>

<b>Single study results (showing the effect of combined interventions: 2 groups)</b>	
Child development and nutrition/health: anaemia	1 RCT, N=277: iron-deficient anaemic and non-anaemic, with 2 groups: surveillance visits with oral-iron only; intervention visits (weekly home visits to support the child-mother relationship (stimulation)) and oral iron Both cohorts of children with iron-deficiency anaemia showed improved haemoglobin (review authors: not possible to calculate ES)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (RCTs showing the effect of individual and combined intervention components: ≥ 3 groups)</b>	
Home environment	1 RCT, N=507: with 5 groups: psychosocial stimulation, nutritional supplementation, both interventions, clinic controls, hospital controls Stimulation-only group compared to hospital and control clinics had better HOME scores: ES (d): 0.38 (P=0.035) and ES (d): 0.39 (P=0.004) Combined intervention group compared to hospital and control clinics had better HOME scores: ES (d): 0.56 and 0.54 (P<0.001)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (RCTs showing the effect of individual and combined intervention components: ≥ 3 groups)</b>	
Maternal depression	1 RCT, N=507: with 5 groups: psychosocial stimulation; nutritional supplementation; both interventions; clinic controls; hospital controls No effect on maternal depression (CES-D)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results (RCTs showing the effect of individual and combined intervention components: ≥ 3 groups)</b>	
Child development and nutrition/health: maternal knowledge	1 RCT, N=60 villages with 600 pregnant women: with 3 groups: nutritional education; nutritional education with responsive feeding and child developmental intervention; control Both interventions (education-only and education and play) associated with improved maternal knowledge compared to control group
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID-II: Bayley Scales of Infant Development II; CES-D: Center for Epidemiological Studies-Depression Scale; cRCT: cluster randomised controlled trial; d: Cohen's d effect size; ES: effect size; GMDS: Griffith's Mental Development scales; HAZ: height for age Z-score; HOME: Home Observation for Measurement of the Environment Inventory; LAZ: length for age Z-score; N: number; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews WAZ: weight for age Z-score; WLZ: weight for length Z-score; WT/HT: weight for height

**Table 59: Evidence table for Knerr 2013<sup>40</sup>**

<b>Review ID</b>	Knerr 2013	
<b>Search date</b>	Database inceptions to May 2010	
<b>Review method</b>	Narrative synthesis (“Due to substantial differences in populations, settings, outcomes, analyses and reporting of studies, metaanalysis was not possible”)	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	12 included studies; 5 relevant studies (4 RCTs, 1 cRCT)	
<b>No. participants in relevant studies</b>	1,025	
<b>Location/setting</b>	Brazil: 1 RCT; Chile: 1 RCT; China: 1 RCT; Pakistan: 1 RCT; South Africa: 1 RCT	
<b>Quality of review</b>	ROBIS: unclear risk of bias AMSTAR: 6/11 (‘moderate’ quality)	
<b>Quality of relevant studies</b>	3/5 RCTs were judged to be at low risk of bias with relatively reliable and valid results (the other 2 RCTs were at unclear risk)	
<b>Review objective</b>	To assess the effectiveness of parenting interventions for reducing harsh/abusive parenting, increasing positive parenting practices, and improving parent-child relationships in low and middle income countries	
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs; <u>participants</u> : parents or primary carers of children aged 0-18 years in countries defined as low or middle income by the World Bank; <u>interventions</u> : interventions designed to reduce child abuse or harsh parenting, teach positive child behaviour management strategies, or improve parent-child attachment and relationships through specific parenting components or curricula aimed at changing general parenting knowledge, attitudes or skills; multi-component interventions where parenting intervention was a minority component were excluded, as were interventions focused on specific health issues; <u>comparisons</u> : no intervention, treatment as usual or alternative intervention; <u>outcomes</u> : parent-child relationship; parenting skills, behaviour, attitudes towards or knowledge about parenting; harsh or abusive parenting and child maltreatment	
<b>Participant population</b>	Pregnant women: 3 RCTs; mothers: 2 RCTs; in all 5 RCTs, participants were from low socio-economic conditions (e.g. extremely poor neighbourhoods; high unemployment; poverty; income from subsistence farming; low ‘median’ housing conditions)	
<b>Intervention</b>	Parenting interventions in low and middle income countries; most intervention packages were delivered to individuals through home visiting: in 2 RCTs, the home-visiting interventions were added to existing health services, while 1 RCT was delivered through health clinics and added to existing services. 4 RCTs involved adaptations of interventions originally developed in high-income countries; 1 RCTs was based on a WHO/UNICEF program. Intervention durations summarised for 12 included studies (not the 5 relevant studies): on average, interventions delivered for a period of 3-6 months in 5-15 sessions	
<b>Comparator</b>	Control groups in most studies received care ‘as usual’ or no services (1 RCT provided alternative services)	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	

<sup>40</sup> green shading indicates results significantly in favour of the intervention

<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Maternal sensitivity: Parent/Caregiver Involvement Scale: observed	<i>Parenting intervention compared to no treatment/treatment as usual</i> 6 month follow up: ES (Cohen's d): 0.24 (95% CI 0.048, 1.492) (small effect (P=0.037)) (1 RCT, N=449) 12 month follow up: ES (Cohen's d): 0.26 (95% CI 0.058, 1.278) (small effect (P=0.043)) (1 RCT, N=449)
Mother-infant synchronous responsiveness: Coding system (Isabella 1989): observed at 1 month	<i>Parenting intervention compared to alternative treatment</i> Effect on positive and asynchronous (less) mother-infant interaction in treatment (video) compared to control (P<0.01) (1 RCT, N=38)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Family knowledge/attitude/practice re: child development: Bespoke questionnaire: self-reported at 6 months	<i>Parenting intervention compared to no treatment/treatment as usual</i> No data reported (1 RCT, N=100)
Mother understanding re: child development: Bespoke questionnaire: self-reported at 6 months	<i>Parenting intervention compared to no treatment/treatment as usual</i> Effect of intervention compared to control (P<0.01) (1 RCT, N=100)
Mother knowledge/attitude re: child development: Infant Development Questionnaire: self-reported at 6 months	<i>Parenting intervention compared to no treatment/treatment as usual</i> Effect of intervention compared to control (P<0.0001) (1 cRCT, N=334)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Family function: 'What is your family like?': self-reported at 15 months	<i>Parenting intervention compared to no treatment/treatment as usual</i> No effect (P=0.76) (1 RCT, N=104)
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Indicators of child abuse: social service records at 1 months	<i>Parenting intervention compared to no treatment/treatment as usual</i> No effects (no reports of abuse for intervention or control groups) (1 RCT, N=104)

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence intervals; cRCT: cluster randomised controlled trial; ES: effect size; N: number; NR: not reported; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

**Table 60: Evidence table for Mejia 2012<sup>41</sup>**

<b>Review ID</b>	Mejia 2012	
<b>Search date</b>	Date of search NR (studies published from 1990 onwards were included)	
<b>Review method</b>	Narrative synthesis	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	8 included studies; 5 relevant studies (4 RCTs, 1 cRCT)	
<b>No. participants in relevant studies</b>	986	
<b>Location/setting</b>	Brazil: 1 RCT; Chile: 1 RCT; China: 1 RCT; Pakistan: 1 RCT; South Africa: 1 RCT	
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 2/11 ('low' quality)	
<b>Quality of relevant studies</b>	Not assessed/reported for all trials; "However, only one (Cooper et al. 2009) used a rigorous methodological design based on the CONSORT guidelines"	
<b>Review objective</b>	To review the literature on parenting programs in developing countries in order to identify challenges, opportunities and directions for further research	
<b>Review eligibility criteria</b>	<u>Designs</u> : quantitative or qualitative evaluations; <u>participants</u> : parents of children up to 12 years old; <u>interventions</u> : parenting programs for preventing emotional or behavioural difficulties; <u>other</u> : peer-reviewed; published from 1990 onwards	
<b>Participant population</b>	Pregnant women or mothers just after labour: 4 RCTs; parents of young children: 1 RCT	
<b>Intervention</b>	Parenting interventions in low and middle income countries; 2 RCTs were delivered at home; 2 RCTs in community centre (or home and community centre); 1 RCT had an unclear location. 4 RCTs offered as individual sessions (1 RCT also involved workshops); 1 RCT has an unclear format. 2 RCTs delivered by paraprofessionals; 2 RCTs involved professionals; 1 RCT had an unclear facilitator. Durations of interventions NR (follow up ranged from no follow up to 18 months)	
<b>Comparator</b>	Control groups in most studies received as usual or no services	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Single study results</b>		
Gessell Developmental Schedule	<i>"World Health Organization Care for Development": Parenting education to enhance mother-child interactions</i> ES (d): 0.44 (medium) (1 RCT, N=100)	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Parent-infant relationship</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<b>Single study results</b>		
Maternal sensitivity: observational tool	<i>Parent training to promote sensitivity and responsive parenting and secure attachment</i> 6 month ES (d): 0.24 (small) (1 RCT, N=449) 12 month ES: (d): 0.26 (small) (1 RCT, N=449)	
Maternal intrusiveness: observational tool	<i>Parent training to promote sensitivity and responsive parenting and secure attachment</i> 6 month ES (d): 0.26 (small) (1 RCT, N=449) 12 month ES: (d): 0.24 (small) (1 RCT, N=449)	
Observations in naturalistic situations	<i>Parenting education for sensitive responsiveness</i> ES (d): 1.60 (large) (1 RCT, N=38)	

<sup>41</sup> green shading indicates results significantly in favour of the intervention



Parent/caregiver psychosocial wellbeing	
Outcome measure used in the review	Results reported in the review
<i>Single study results</i>	
Maternal mental health	<i>Parenting training to prevent child abuse</i> ES (d): 0.42 (medium) (1 RCT, N=90)
Parent/caregiver knowledge, practices and behaviours	
Outcome measure used in the review	Results reported in the review
<i>Single study results</i>	
Infant Development Questionnaire	<i>"Learning Through Play": Parenting education to enhance quality of mother-child interaction</i> ES (d): 2.01 (large) (1cRCT, N=309)
Parent/caregiver views of intervention	
Outcome measure used in the review	Results reported in the review
NR	NR
Family relationships	
Outcome measure used in the review	Results reported in the review
NR	NR
Systems outcomes	
Outcome measure used in the review	Results reported in the review
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; cRCT: cluster randomised controlled trial; ES: effect size; N: number; NR: not reported; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

**Table 61: Evidence table for Rahman 2013<sup>42</sup>**

<b>Review ID</b>	Rahman 2013
<b>Search date</b>	Studies published up to May 2012
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	13 included studies; 11 relevant studies (9 RCTs (3 cRCTs); 1 trial with alternate assignment (qRCT); 1 study with historical matched control)
<b>No. participants in relevant studies</b>	22,441 in 11 relevant studies (note: total N for Tripathy 2010 retrieved abstract as NR in review)
<b>Location/setting</b>	Chile: 1 trial; China: 2 trials; India: 2 trials; Mexico: 1 trial; Pakistan: 2 trials; South Africa: 2 trials; Taipei and Taiwan: 1 trial
<b>Quality of review</b>	ROBIS: unclear risk of bias AMSTAR: 7/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Not assessed/reported
<b>Review objective</b>	To assess the effectiveness of interventions to improve the mental health of women in the perinatal period and to evaluate any effect on the health, growth and development of their offspring, in low and middle income countries
<b>Review eligibility criteria</b>	<u>Designs</u> : controlled trials; <u>participants</u> : women during pregnancy and after childbirth from low and middle income countries; <u>interventions/outcomes</u> : structured mental health interventions, or studies measuring maternal mental health outcomes up to 36 months postpartum; <u>other</u> : published up to May 2012
<b>Participant population</b>	Pregnant women or women who had recently given birth
<b>Intervention</b>	Interventions to improve the mental health of women in the perinatal period in low and middle-income countries. In all studies, supervised, non-specialist health and community workers delivered the interventions. Interventions ranged from 1 session, to 20 visits; with follow up continuing up to 18 months of age for infants
<b>Comparator</b>	Predominately routine care
Outcome domain	
Infant social and emotional wellbeing or development up to 1 year of age	
Outcome measure used in the review	Results reported in the review
NR	NR

<sup>42</sup> green shading indicates results significantly in favour of the intervention

<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Infant growth (time of measure NR)	SMD: 0.19 (95% CI 0.07, 0.31) (2 RCTs, 1 historical matched control study, N=1,125)
Infant development (time of measure NR)	SMD: 1.57 (95% CI 0.28, 2.85) (2 RCTs, N=473) (including 1 study in infants > 1 year of age at intervention commencement)
<b>Single study results</b>	
Infant growth	Intervention infants were heavier (P=0.01) and taller (P=0.02) (1 historical matched control study, N=72)
	No difference in head circumferences to weight-to-height ratio (1 historical matched control study, N=72)
Infant development and weight	No difference in DQ < 85 (1 RCT, N=422)
	No difference in mean infant weight (1 RCT, N=422)
Infant health	No difference between group in infant stunting or malnutrition (1 cRCT, N=903)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Neonatal mortality rate	OR: 0.68 (95% CI 0.59, 0.78) (1 RCT, N=1,123)
Infant infectious disease rate	OR: 0.60 (95% CI 0.39, 0.98) (1 cRCT, N=705)
Neonatal mortality ratio	Overall, 32% lower in intervention than control clusters; 45% lower in years 2 and 3 (1 cRCT, N=NR)
Infant health	Infants in intervention group had fewer episodes of diarrhoea at 12 months (P=0.04) and were more likely to be fully immunised (P=0.001) (1 cRCT, N=903)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Mother-infant relationship (rated observations of parent-child interactions; Acholi adaptation of the HOME Inventory) (6-12 months)	SMD: 0.36 (95% CI 0.22, 0.51) (4 studies, N=1,123) (including 1 study in infants > 1 year of age at intervention commencement)
<b>Single study results</b>	
Mother-infant interaction	After controlling for age and education, mothers in intervention group were more sensitive in play (P=0.02) and tended to have more positive affect in feeding (P=0.08) (coded ratings of video-recordings) (1 historical matched control study, N=72)
Family functioning	Intervention parents more likely to dedicate time to play with infant (maternal reports) (mothers: P<0.0001; fathers: P=0.0001) (1 cRCT, N=903)
Mother-infant interaction; infant attachment	Intervention group more sensitive and less intrusive in interactions with infants at 6 and 12 months (observations) (all P<0.05); Intervention infants more securely attached at 18 months (Strange Situation Procedure) (P<0.029) (1 RCT, N=449)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Maternal depression (SCID-1; CES-D; EPDS; SRQ-20; HDRS; K10; Kitgum Maternal Mood Scale) (4 weeks to 12 months postpartum)	SMD: -0.38 (95% CI -0.56, -0.21) I <sup>2</sup> 79.9% (13 studies, N=15,429) (Including 2 studies in infants > 1 year of age at intervention commencement)
Maternal depression (EPDS; Kitgum Maternal Mood Scale) at 3 or 4 months postpartum	SMD: -0.59 (95% CI -0.95, -0.24) (5 studies, N=943)
Maternal depression (SCID-1; EPDS; SRQ-20; HDRS) at 6 months postpartum	SMD: -0.27 (95% CI -0.50, -0.05) (7 studies, N=1,945)
Maternal depression (CES-D; K10) at 12 months postpartum	SMD: -0.19 (95% CI -0.36, -0.04) (2 studies, N=12,541)

<b>Single study results</b>	
Maternal mood	Major depression: 19% (6/32) in intervention group; 28% (9/32) in comparison group (SCID-I) (1 historical matched control study, N=72)
Maternal mood	EPDS scores improved in multi-component intervention at 3 months (P<0.0001) (1 RCT, N=230)
Maternal mood	After adjusting for covariates, women in intervention group less likely to be depressed at 6 months and 12 months postpartum (HDRS, SCID), were less disabled at 6 and 12 months (Brief Disability Questionnaire), had better global functioning at 6 and 12 months (Global Assessment of Functioning), had better perceived social support at 6 months (self-assessment) (for all outcomes, P<0.0001) (1 cRCT, N=903)
Maternal emotional distress	No difference in SRQ-20 scores (1 cRCT, N=334)
Maternal depression	EPDS scores lower in intervention group at 6 and 12 months; only significant at 6 months (SCD-I interviews) (P=0.04) (1 RCT, N=449)
	Lower prevalence of depression in intervention group at 6 and 12 months, but differences not significant (SCD-I interviews) (1 RCT, N=449)
Maternal mood	No difference in "postnatal experiences"; no differences in EPDS score > 9 at 6 weeks (P=0.20) or 3 months (P=0.30) postpartum; both groups experienced improvements in mood over time (1 trial with alternate assignment N=200)
Maternal mood	Intervention group significantly lower EPDS, GHQ-12 and SWIR at 6 weeks postpartum; intervention group significantly lower mean scores of EPDS (P<0.01) and GHQ-12 (P<0.01) at 3 months postpartum (1 RCT, N=194)
	Difference in proportion with EPDS scores > 12 not significant at 6 weeks postpartum (P=0.10) (1 RCT, N=194)
Maternal mood	Moderate depression (K10: 16-20) significantly lower in intervention group in year 3 of study (1 cRCT, N=NR)
	No significant difference between groups overall (1 cRCT, N=NR)
Maternal mood	Cumulative incidence of major depression over 3 time periods lower in intervention group (SCID-I) (P<0.05) (1 RCT, N=367)
	No significant treatment effect for depressive symptoms (BDI-II) (1 RCT, N=367)
Maternal mood	Intervention group had lower mean PHQ-9 (P<0.01) and EPDS scores (P=0.04) at 6 weeks postpartum (1 RCT, N=240)
	Fewer in intervention group with SCID-I diagnosis of major depression (P=NS) (1 RCT, N=240)
Maternal mood	No difference between groups in EPDS score > 12 (1 RCT, N=422)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Maternal knowledge about infant development	Intervention group had significantly higher increase in questionnaire scores at 3 months postpartum (original infant development questionnaire) (P<0.0001) (1 cRCT, N=334)
Infant care	Clean birth practices and rates of exclusive breastfeeding at 6 weeks higher in intervention group (1 cRCT, N=NR)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<b>Who</b> could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?	
Maternal depression	<ul style="list-style-type: none"> <li>Chile (Rojas 2007), China (Goa 2010, 2012; Ho 2009) and Mexico (Lara 2010) were the only countries where the interventions were implemented by mental health professionals</li> <li>In all other studies, the interventions were implemented by local trained community health workers under professional supervision</li> </ul>
<b>Where</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Maternal depression	<p>Countries:</p> <ul style="list-style-type: none"> <li>China (Ho 2009; Gao 2010, 2012; Mao 2012)</li> <li>India (Tripathy 2010; Hughes 2009)</li> <li>Pakistan (Rahman 2008; Rahman 2009)</li> <li>South Africa (Cooper 2002; Cooper 2009)</li> <li>Chile (Rojas 2007)</li> <li>Jamaica: (Baker-Henningham 2005)</li> <li>Mexico (Lara 2010)</li> <li>Uganda (Morris 2012)</li> </ul> <p><u>Home visits</u></p> <p>Significant:</p> <ul style="list-style-type: none"> <li>Rahman 2008; Cooper 2009; Morris 2012*</li> </ul> <p>Not significant:</p> <ul style="list-style-type: none"> <li>Cooper 2002; Baker-Henningham 2005; Rahman 2009; Hughes 2009</li> </ul> <p><u>Other</u></p> <p>Significant:</p> <ul style="list-style-type: none"> <li>Hospital (Ho 2009)</li> <li>Embedded in routine antenatal care (Gao 2010, 2012)</li> <li>Women's groups (Tripathy 2010)</li> <li>Group sessions, location not stated (Mao 2012)</li> </ul> <p>Non-significant:</p> <ul style="list-style-type: none"> <li>Groups and medical appointments (Rojas 2007) NS</li> <li>Group sessions, location not stated (Lara 2010) NS</li> </ul> <p>*Morris 2012 also included mother-infant group sessions</p>
<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Maternal depression	<ul style="list-style-type: none"> <li>All 13 studies except four (those from China (Mao 2012; Gao 2010, 2012; Ho 2009) and Mexico (Lara 2010)) included participants of low SES who experienced difficulties that could have contributed to their mental health problems</li> </ul> <p>Significant:</p> <ul style="list-style-type: none"> <li>Third trimester of pregnancy, mother diagnosed with depression (Rahman 2008)</li> <li>Third trimester of pregnancy (Cooper 2009)</li> <li>Women without psychiatric history with a healthy term infant (Ho 2009)</li> <li>Women &gt; 28 weeks gestational age, without psychiatric history (Gao 2010, 2012)</li> <li>Pregnant women (Tripathy 2010)</li> <li>Nulliparous, healthy singleton pregnancy without psychiatric history (Mao 2012)</li> <li>Living in camps for internally displaced people, having a moderately or severely malnourished infant aged 6-30 months; enrolled in a feeding centre (Morris 2012)</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>Infants 6 months or younger (Cooper 2002)</li> <li>Singleton infants aged 9-30 months (Baker-Henningham 2005)</li> <li>Infant 12 months or younger, mother diagnosed with depression (Rojas 2007)</li> <li>Third trimester of pregnancy (Rahman 2009)</li> <li>Third trimester of pregnancy, at risk of postnatal depression, unplanned pregnancy or have a 'male child fixation' (Hughes 2009)</li> <li>≤ 26 weeks pregnant, without substance abuse or bipolar conditions, no</li> </ul>

	reported suicide attempts in last six months (Lara 2010)
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
Maternal depression	<p>Outcomes assessed at 4 weeks to 12 months (for the main meta-analysis of maternal depression)</p> <p>Significant</p> <ul style="list-style-type: none"> <li>• 1 session per week in the last month of pregnancy, 3 sessions in the first postpartum month and 1 session per month for the subsequent 9 months (a total of 16 sessions) (Rahman 2008)</li> <li>• Hour-long home visits to mothers twice antenatally, weekly for the next 8 weeks, fortnightly for the next 2 months and monthly for another 2 months (a total of 16 visits, finishing when the infant was 5 months old) (Cooper 2009)</li> <li>• Discussion with nurses on the second day after giving birth (Ho 2009)</li> <li>• 1 antenatal classes (1 hours each) and a postpartum follow-up telephone call (Gao 2010, 2012)</li> <li>• Monthly (duration of intervention not reported) (Tripathy 2010)</li> <li>• 4 weekly group sessions and 1 individual counselling session (each session lasted 90 minutes) (Mao 2012)</li> <li>• 6 mother-infant groups at weekly intervals, with an unspecified number of home visits (Morris 2012)</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>• Home visits twice antenatally, twice weekly during first month after birth, weekly for next 8 weeks, fortnightly for next month and monthly for the next 2 months (a total of 20 visits) (Cooper 2002)</li> <li>• Weekly home visits lasting 30 minutes (duration of intervention not reported) (Baker-Henningham 2005)</li> <li>• 8 weekly groups, and medical appointments at 2 and 4 weeks and monthly thereafter for 6 months (Rojas 2007)</li> <li>• Half-day session in late pregnancy, 15-20 minutes once a fortnight until infants were 12 weeks old (with informal parent meetings encouraged) (Rahman 2009)</li> <li>• Home visits twice antenatally and three times postnatally (at 4, 7 and 10 weeks) each for 45 minutes (for a total of 5 visits) (Hughes 2009)</li> <li>• 8 weekly sessions lasting 2 hours each (Lara 2010)</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	
Maternal depression	<p>Significant</p> <ul style="list-style-type: none"> <li>• Manualised intervention incorporating cognitive and behavioural techniques of active listening and collaboration with the family (Rahman 2008)</li> <li>• Incorporation of WHO's Improving the Psychosocial Development of Children Programme (Cooper 2009)</li> <li>• Nurses discussed a booklet about postpartum depression with mothers (Ho 2009)</li> <li>• Additional 'psychotherapy' classes embedded in antenatal child birth education (Gao 2010, 2012)</li> <li>• Participatory action cycles (Tripathy 2010)</li> <li>• Emotional self-management training (Mao 2012)</li> <li>• Culturally appropriate psychoeducation (Morris 2012)</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>• Incorporation of WHO's Improving the Psychosocial Development of Children Programme (Cooper 2002)</li> <li>• Interventions to improve mothers' knowledge of child-rearing practices and parenting self-esteem (Baker-Henningham 2005)</li> <li>• Structured psychoeducational groups, free drugs to treat depression, medical appointments (Rojas 2007)</li> <li>• Use of images and simple text to demonstrate infant development, parent-child play activities and skilled parenting practices (Rahman 2009)</li> <li>• Information and psychological component e.g. positive thinking (Lara 2010)</li> <li>• Supportive empathic listening (Hughes 2009)</li> </ul>

How could the intervention, program or messages regarding infant social and emotional wellbeing and development be <b>framed</b> ?
NR
What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?
NR
What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?
<ul style="list-style-type: none"> <li>• 90-100% of recipients felt supported, felt they could trust the provider, said the provider understood how they felt, made them appreciate what the baby can do, helped solved problems they were having with the baby, helped them understand the child's needs and how to respond to what the child was doing (Cooper 2002)</li> <li>• Trained lay health workers considered the intervention to be relevant and that it did not constitute an extra workload (Rahman 2008)</li> <li>• Most trained lay health workers considered the intervention to be relevant, easy to integrate into their routine tasks and that they could communicate the concepts to mothers in their care (Rahman 2009)</li> <li>• There was strong support from the local community for health workers and the project (Cooper 2009)</li> </ul>

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BDI-II: Beck Depression Inventory II; CI: confidence interval; cRCT: cluster randomised controlled trial; DQ: developmental quotient; EPDS: Edinburgh Postnatal Depression Scale; GHQ-12: 12-item General Health Questionnaire; HDRS: Hamilton Depression Rating Scale; K10: Kessler Psychological Distress Scale; N: number; NR: not reported; OR: odds ratio; P: P value; PHQ-9: 9-item Patient Health Questionnaire; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SCID-I: Structure Clinical Interview for DSM-IV Diagnoses; SMD: standardised mean difference; SRQ-20: 20-item Self-Reporting Questionnaire; SWIR: Satisfaction with Interpersonal Relationships Scale

## Interventions for low-income/socially disadvantaged parents

**Table 62: Matrix indicating the studies that were included in the systematic reviews**

	Systematic review		
	Maulik 2009	Miller 2011	Mortensen 2014
Akai 2008			✓ (RCT, N=48)
Bao 1999	✓ (RCT, N=156)		
Barlow 2007			✓ (RCT, N=121)
Barrera 1986	✓ (RCT, N=59)		
Belsky 2006 (Melhuish 2007)	✓ (quasi-experimental, 14,084 9 month olds)		
Black 1995, 2007	✓ (RCT, N=130)		
Brooks-Gunn 1992, 1994 (McCarton 1997; McCormick 2006)	✓ (RCT, N=985)		
Charpak 2001 (Tessier 2003)	✓ (RCT, N=630 at 12 month follow up)		
Cooper 2002			✓ (non-random, N=64)
Cooper 2009			✓ (RCT, N=346)
Duggan 2007 (Caldera 2007)			✓ (RCT, N=249)
Ferber 2005	✓ (RCT, N=51)		
Field 1982		✓ (RCT, N=80)	
Gardner 2003 (Walker 2004)	✓ (RCT, N=140 (N=94))		
Gofin 1996	✓ (cohort, N=4,314)		
Goodson 2000			✓ (RCT, N=2,799)
Grantham-McGregor 1980, 1987, 1994	✓ (cohort, N=54)		
Guyer 2000 (Minkovitz 2003)	✓ (quasi-experimental program, N=2,235, and N=3,330)		
High 2000	✓ (RCT, N=205)		
Ibe 2004	✓ (cross-over trial, N=13)		
Infante-Rivard 1989		✓ (RCT, N=73 (47))	
Johnson 1993		✓ (RCT, N=262)	
Johnston 2004, 2006	✓ (quasi-experimental, N=439)		
Kemp 2011			✓ (RCT, N=110)
Kitzman 1997 (Olds 2004a; Olds 2004b)	✓ (RCT, N=1,139)		
Klein Velderman 2006 Study 1			✓ (RCT, N=37)
Klein Velderman 2006 Study 2			✓ (RCT, N=40)
Knoche 2012			✓ (non-random, N=61)
Letourneau 2001			✓ (RCT, N=16)
Liptak 1983	✓ (RCT, N=75)		
Love 2005			✓ (RCT, N=744)
Mayers 2008			✓ (non-random, N=85)
Mendelsohn 2005	✓ (RCT, N=73 controls, N for intervention NR)		
Nurcombe 1984 (Achenbach 1993; Rauh 1990)	✓ (RCT, N=115)		
Olds 2004 Study 1			✓ (RCT, N=301)
Olds 2004 Study 2			✓ (RCT, N=304)
Palfrey 2005	✓ (cohort, N=282)		
Palti 1982	✓ (quasi-experimental, N=355)		
Raikes 2006	✓ (RCT, N=3,001)		
Ramey 1984 (Campbell 2001)	✓ (RCT, N=111)		

Resnick 1987	✓ (RCT, N=255)		
Rodriquez 2010			✓ (RCT, N=522)
St. Pierre 1999	✓ (RCT, N=>4,000)		
Svanberg 2010			✓ (non-random, N=192)
Tallandini 2006	✓ (quasi-experimental, N=40)		
Tomopoulos 2006	✓ (cohort, N=73)		
Wen 2006	✓ (RCT, N=117)		
Wendland-Carro 1999	✓ (RCT, N=38)		
Whipple 2000	✓ (RCT, N=20)		

**Abbreviations:** N: number; RCT: randomised controlled trial

**Table 63: Evidence table for Maulik 2009<sup>43</sup>**

<b>Review ID</b>	Maulik 2009
<b>Search date</b>	Database inceptions to January 2008
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	53 included studies; 29 relevant studies (19 RCTs; 5 quasi-experimental; 1 cross-over trial; 4 cohort studies)
<b>No. participants in relevant studies</b>	Not clearly reported for all studies; estimated > 36,000 in 29 relevant studies (see above)
<b>Location/setting</b>	Brazil: 1 study; Canada: 1 study; China: 2 studies; Colombia: 1 study; Israel: 3 studies; Italy: 1 study; Jamaica: 2 studies; UK: 1 study; USA: 17 studies
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 4/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Not assessed/reported
<b>Review objective</b>	To summarise the evidence regarding the effectiveness of low cost, low-resource intensive community interventions (e.g. play, reading, music, tactile stimulation) in the early childhood period on child development (with a particular focus on techniques that may be transferable to developing countries, and children at risk of developing secondary impairments)
<b>Review eligibility criteria</b>	<u>Designs</u> : systematic reviews, RCTs, quasi-experimental, cohort, case-control, cross sectional studies; <u>participants/outcomes</u> : intervention had to start and measure outcomes any time before 3 years of age; <u>interventions</u> : interventions related to reading, music, play, cognitive/tactile stimulation and parent-child interaction (such that they could be applied in large-scale community-based projects, aiming to optimise neurodevelopment) (including studies in neonatal intensive care units, as long as outcomes were measured using techniques that could be applied in the community)
<b>Participant population</b>	Pregnant women and/or parents of infants (aged 0 to 3 at start of the intervention)
<b>Intervention</b>	Interventions related to reading, music, play, cognitive/tactile stimulation and parent-child interaction; the interventions had to be such that they could be applied in large-scale community-based project (applicable to low- and middle-income countries), aimed to optimise neurodevelopment; where detail provided, intervention durations/intensities varied greatly – e.g. additional 1-hour training in NICU (in feeding, bathing, holding infant) through music therapy (with 1 month post-discharge follow up) vs. centre-based education program until age 3 for 5 days per week (with 21 year follow up)
<b>Comparator</b>	Various (not clearly reported per study)

<sup>43</sup> green shading indicates results significantly in favour of the intervention; pink shading indicates significantly poorer results



<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Studies that used music with/without play and reading as important components</i>	
Stress level	Child's stress level decreased by 50% in intervention group and 8% in control group (1 RCT, N=20)
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Studies that used play as important component</i>	
Problem solving and development quotient	Problem solving ability was better in the intervention group (mothers taught to interact with children using play and songs) at end of 1 <sup>st</sup> phase; improvements in development quotient were seen at 15 and 24 months in the 2 <sup>nd</sup> phase (1 RCT, N=140)
Development quotient	Increase in development quotient; early stimulation affected development (more prominent among children whose mothers had 9-11 years of schooling); coordination and posture score changed more marked than language score changes (1 cohort study, N=4,314 children)
Development quotient	Throughout follow-up, intervention group had development quotient between non-intervention group and normal group; by 14 years, the difference between intervention group and normal group not significant (sub-scores for spelling, reading, arithmetic, global score) (1 cohort study, N=54)
Cognitive development	Infants cognitive development was not significantly affected at 6 months (1 RCT, N=115) After 24 months, cognitive performance and achievement of low birth weight children on intervention improved, and by 9 years matched those of normal controls, in comparison to control infants, whose performance continued to decrease (1 RCT, N=115)
<i>Studies that used play with reading/maternal and child care as important component</i>	
MDI, PDI	MDI in specific vs. regular intervention group was ~14 times higher at 1.5 and 2 years (significant difference); PDI was ~5 times higher. Compared with controls, the specific intervention group had ~6-7 times significantly higher MDI and PDI scores at 2 years (1 RCT, N=156)
MDI, PDI	Gains in parent-infant intervention group were more than developmental programming intervention group; MDI showed greater improvement than PDI (1 RCT, N=59)
Weight; cognitive development; teacher ratings of psychological problems and IQ scores	Both groups (home intervention and clinic only) showed improvements in weight; at follow up IQ scores were not significant different (1 RCT, N=130) Younger children in home intervention group showed less decline in cognitive development and language skills than clinic only group; at follow up, home intervention group had fewer psychological problems and better work habits according to teachers (1 RCT, N=130)
IQ scores, cognitive performance	At end of 5 years, intervention and control groups had similar IQ scores (1 RCT, N=985) At 8 years the heavier low birthweight babies had significantly higher IQ scores (verbal, performance and mathematical abilities) compared with control group (no difference for lighter babies); at 18 years, the heavier children performed better in math scores, and better on cognitive scales compared to control group (no differences for lighter children) (1 RCT, N=985)
Cognitive development; receptive language development; expressive language development	Cognitive development significantly higher in intervention group; expressive language significantly improved in intervention group (higher maternal education had significant impact) (1 RCT, N=unclear) No significant difference in receptive language development (1 RCT, N=unclear)
Educational attainment	Similar across 3 intervention groups (1 cohort study, N=282)
Cognitive and language development, receptive language and fine motor development	Book reading at 18 months associated significantly with cognitive and language development; toys at 18 months predictive of higher language and fine motor development at 21 months (1 cohort study, N=unclear)

<i>Studies that used reading as important component</i>	
Child Centered Literacy Orientation	Intervention group reported 40% vs. 16% increase in control group; intervention group read out more; older children in intervention group had higher language abilities (no difference for younger children) (1 RCT, N=205)
<i>Studies that used reading and basic maternal and child care as important components</i>	
Intellectual development scores	Significant unadjusted differences between treatment and control groups across 3-21 years (age and treatment adjusted effect sizes of Wechsler's IQ scores: 0.74 during treatment; 0.37 during follow up; effect sizes for reading and maths were 0.45 and 0.37) (1 RCT, N=111)
Child functioning	No positive differences in program and control group at any point of assessment (1 RCT, N=>4,000)
<i>Studies that used music with/without play and reading as important components</i>	
Development quotient	Intervention group showed higher development quotient compared with control group (especially when level of intervention was more intense) (1 quasi-experimental intervention, N=355)
Child vocabulary; cognitive development	Reading associated with strong child vocabulary at 14 and 24 months; cognitive development strongly related to book reading between 24-36 months (1 RCT, N=3,001)
<i>Studies that used kangaroo mother care as important component</i>	
Head circumference; developmental index; global IQ	Head circumference larger in intervention group; global IQ significantly more in intervention group (1 RCT, N=unclear (630 at 12 month follow up))
	Development index was "not too different" among groups (1 RCT, N=unclear (630 at 12 month follow up))
<i>Studies that used massage as important component</i>	
Developmental scores	Infants in intervention group had significantly higher developmental scores at 1 and 2 years (1 RCT, N=255)
Developmental scores and social skills	Intervention group showed significant improvement compared to control group; social skills were also significantly different (premature infants) (1 RCT, N=117)
<i>Studies that used basic maternal and/or child care as important component</i>	
Language and psychomotor development	At 4 and 5 years, those in home visitation groups by nurses had higher language and psychomotor development (1 RCT, N=1,139)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Studies that used play as important component</i>	
Less chaos	Mothers reported less chaos compared to comparison group (1 quasi-experimental study; 150 intervention communities (12,575 9 month infants) vs. 50 waiting-list communities (1,509 9 month infants))
Behaviour	Behaviour was better in the intervention group at end of 1 <sup>st</sup> phase (1 RCT, N=140 infants)
Behavioural scores	Behavioural scores were lower at 3 years but not 5 years in intervention group compared with control group; at 18 years, heavier children had reduced risky behaviour in intervention group compared with control group (1 RCT, N=985)
<i>Studies that used basic maternal and/or child care as important component</i>	
Language and psychomotor development	At 4 and 5 years, those in home visitation groups by nursed had fewer behavioural problems (1 RCT, N=1,139)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Studies that used play with reading/maternal and child care as important components</i>	
Health outcomes	Within the urban community, those enrolled in the program performed better at 25 years (1 cohort study, N=282)
<i>Studies that used kangaroo mother care as important component</i>	
Mortality; severe infections	Mortality less "by a non-significant amount" (1 RCT, N=unclear (630 at 12 month follow up))
	Intervention group had less severe infections (1 RCT, N=unclear (630 at 12 month follow up))
Hypothermia	Less with KMC (1 cross-over trial, N=13)

<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Studies that used play as important component</i>	
Interaction	While intervention group spent less time holding their baby at 3 months, they interacted more with the babies (looking at them; talking to them); no differences were statistically significant (1 RCT, N=75)
<i>Studies that used play with reading/maternal and child care as important components</i>	
Mother-infant verbal communication, infant's play and mother's responsiveness	All showed more improvement in normal control and parent-infant intervention group (1 RCT, N=59)
Parent-child interaction	Home intervention group showed more child-centered home atmosphere (1 RCT, N=130)
Parent-child verbal interaction	Books and toys at 18 months predicted better parent-child verbal interaction at 21 months (1 cohort study, N=unclear)
<i>Studies that used music with/without play and reading as important components</i>	
Appropriate parent scores	Intervention group showed significantly more appropriate interactions (1 RCT, N=20)
<i>Studies that used kangaroo mother care as important component</i>	
Children's expression of needs, and responsiveness	Intervention children better at expressing needs and showed higher responsiveness to mother (1 quasi-experimental trial, N=40)
<i>Studies that used massage as important component</i>	
Mother-infant interaction	Mother-infant interaction was increased at 3 months for those who received massage (1 RCT, N=51)
<i>Studies that used basic maternal and/or child care as important component</i>	
Synchronous behaviour	Overall, the intervention group showed more synchronous behaviour (1 RCT, N=38)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Studies that used play as important component</i>	
Mothers psychopathology	At 6 months there was no difference between intervention and control groups (1 RCT, N=115)
<i>Studies that used kangaroo mother care as important component</i>	
Stress	Significantly less stress at discharge in intervention group (1 quasi-experimental trial, N=40)
<i>Studies that used basic maternal and/or child care as important component</i>	
Depression	Depression was more at 30 months ("but this could reflect greater awareness about psychological wellbeing") (1 quasi-experimental study, N=439)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
<i>Studies that used play as important component</i>	
Maternal satisfaction and confidence about mothering; attitudes towards children	At 6 months, mothers in intervention group showed greater satisfaction and confidence, and slightly better attitudes towards children (1 RCT, N=115)
<i>Studies that used play with reading/maternal and child care as important components</i>	
Number of toys and books at home; frequency of book reading	Significant increase between 6 and 18 months (1 cohort study, N=unclear)
<i>Studies that used reading and basic maternal and child care as important components</i>	
Parent functioning	No positive differences in program and control group at any point of assessment (1RCT, N=>4,000)
<i>Studies that used music with/without play and reading as important components</i>	
Visits to NICU	Intervention group showed more visitations to the NICU compared with control group (1 RCT, N=20)
<i>Studies that used kangaroo mother care as important component</i>	
Provision of growth stimulation	Intervention mothers were better at providing social and cognitive growth stimulation (1 quasi-experimental trial, N=40)

<i>Studies that used basic maternal and/or child care as important component</i>	
Physical punishment to discipline children	Lower odds of intervention mothers using physical punishment to discipline children (1 quasi-experimental program, N=2,235 in RCT design, N=3,330 in quasi-experimental design)
Parental knowledge and satisfaction and well-being; immunisations, breastfeeding, risky behaviour leading to childhood injury	At 3 months, both intervention groups showed higher levels of parental knowledge, satisfaction and wellbeing; at 30 months, there were higher levels of immunisation, longer durations of breast feeding and reduced levels of risky behaviour (1 quasi-experimental study, N=439)
Parent/caregiver views of intervention	
Outcome measure used in the review	Results reported in the review
Single study results	
<i>Studies that used kangaroo mother care as important component</i>	
Mother's acceptability	Mother's acceptability with KMC was "more" (1 cross-over trial, N=13)
<i>Studies that used basic maternal and/or child care as important component</i>	
Satisfied with paediatric care; remaining in service for > 20 months; receiving adequate care	Intervention group reported significantly higher odds (1 quasi-experimental program, N=2,235 in RCT design, N=3,330 in quasi-experimental design)
Family relationships	
Outcome measure used in the review	Results reported in the review
NR	NR
Systems outcomes	
Outcome measure used in the review	Results reported in the review
NR	NR
Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?	
Development quotient (15 months to 14 years)	<ul style="list-style-type: none"> <li>Trained community health workers (Gardner 2003 (Walker 2004))</li> <li>Maternal and child care services from one particular care provider (Gofin 1996)</li> <li>Trained nurses (Grantham-McGregor 1980, 1987, 1994)</li> </ul>
Mental and psychomotor development (up to 24 months)	<ul style="list-style-type: none"> <li>NR (Bao 1999)</li> <li>Home interventions were provided by therapists (Barrera 1986)</li> </ul>
Behaviour (up to 5 years)	<ul style="list-style-type: none"> <li>Trained community health workers (Gardner 2003 (Walker 2004))</li> <li>NR (Brooks-Gunn 1992, 1994 (McCarton 1997; McCormick 2006))</li> </ul>
Parent-child interaction (up to 21 months)	<ul style="list-style-type: none"> <li>Home intervention provided by therapists (Barrera 1986)</li> <li>Home intervention provided by lay workers (Black 1995, 2007)</li> <li>NR (Tomopoulos 2006)</li> </ul>
Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Development quotient (15 months to 14 years)	<ul style="list-style-type: none"> <li>Recruited from one particular hospital, Jamaica; delivered at home (Gardner 2003 (Walker 2004))</li> <li>Particular community in Israel; NR where intervention delivered (Gofin 1996)</li> <li>A particular clinic, Jamaica; delivered in hospital and at home (Grantham-McGregor 1980, 1987, 1994)</li> </ul>
Mental and psychomotor development (up to 24 months)	<ul style="list-style-type: none"> <li>A group of hospitals, China (Bao 1999)</li> <li>3 city hospitals, Canada (Barrera 1986)</li> </ul>
Behaviour (up to 5 years)	<ul style="list-style-type: none"> <li>Recruited from one particular hospital, Jamaica; delivered at home (Gardner 2003 (Walker 2004))</li> <li>USA; delivered at home and in centre (Brooks-Gunn 1992, 1994 (McCarton 1997; McCormick 2006))</li> </ul>
Parent-child interaction (up to 21 months)	<ul style="list-style-type: none"> <li>3 city hospitals, Canada; delivered at home (Barrera 1986)</li> <li>recruited from a paediatric clinic, USA; delivered at home (Black 1995, 2007)</li> <li>USA (Tomopoulos 2006)</li> </ul>

<b>To whom</b> could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?	
Development quotient (15 months to 14 years)	<ul style="list-style-type: none"> <li>• Low birthweight term infants (&gt; 36 weeks, singleton, with no severe medical complication, not in a nursery for more than 48 hours, with mothers with less than secondary level education) (Gardner 2003 (Walker 2004))</li> <li>• Mothers of children born 1971-1989, who received maternal and child care services from one particularly care provider; early stimulation affected development: more prominent among children whose mothers had between 9-11 years of schooling (Gofin 1996)</li> <li>• 3 groups of children, all children were between 6-24 months at recruitment, birth weight was &gt; 2.3kg, had no other medical complication other than malnutrition and belonged to a household that was below a certain level of overcrowding and the mothers had less than secondary level education: severely malnourished; adequately nourished; severely malnourished and received psychosocial stimulation (Grantham-McGregor 1980, 1987, 1994)</li> </ul>
Mental and psychomotor development (up to 24 months)	<ul style="list-style-type: none"> <li>• Premature infants at less &lt; 36 months (Bao 1999)</li> <li>• Preterm and normal term infants (Barrera 1986)</li> </ul>
Behaviour (up to 5 years)	<ul style="list-style-type: none"> <li>• Low birthweight term infants (&gt; 36 weeks, singleton, with no severe medical complication, not in a nursery for more than 48 hours, with mothers with less than secondary level education) (Gardner 2003 (Walker 2004))</li> <li>• Infants weighing &lt; 2000 g or between 2000-2500 g at less than 37 weeks (Brooks-Gunn 1992, 1994 (McCarton 1997; McCormick 2006))</li> </ul>
Parent-child interaction (up to 21 months)	<ul style="list-style-type: none"> <li>• Preterm and normal term infants (Barrera 1986)</li> <li>• Children diagnosed as non-organic failure to thrive, below the 5th percentile for weight for age with no severe medical complication (Black 1995, 2007)</li> <li>• Mother-infant dyads; the inclusion criteria were Latino mothers with less than high school education and at least 18 years of age, planned primary care at research centre, normal birth history and one pregnancy, infant had no significant medical complications, parents had no plans for adoption or foster care, and no plans for enrolment in Early Head Start (Tomopoulos 2006)</li> </ul>
<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
Development quotient (15 months to 14 years)	<ul style="list-style-type: none"> <li>• 1<sup>st</sup> phase of intervention: 1 hour/week home visits for 8 weeks; 2<sup>nd</sup> phase of intervention: from 7-24 months of age (Gardner 2003 (Walker 2004))</li> <li>• Intervention lasted 2 years (Gofin 1996)</li> <li>• Intervention group: trained nurses played with them for 1 hour per day for 6 days per week; after discharge home visits were made weekly for 2 years, then bi-weekly for another year (Grantham-McGregor 1980, 1987, 1994)</li> </ul>
Mental and psychomotor development (up to 24 months)	<ul style="list-style-type: none"> <li>• Follow-up of the children's progress was done monthly over the 1<sup>st</sup> year and every alternate month in the 2<sup>nd</sup> year (Bao 1999)</li> <li>• Home interventions were provided initially weekly for 4 months, then every alternate week and then every month for the last 3 months (Barrera 1986)</li> </ul>
Behaviour (up to 5 years)	<ul style="list-style-type: none"> <li>• 1<sup>st</sup> phase of intervention: 1 hour/week home visits for 8 weeks; 2<sup>nd</sup> phase of intervention: from 7-24 months of age (Gardner 2003 (Walker 2004))</li> <li>• Families provided weekly home visits for the 1<sup>st</sup> year and then bi-weekly visits for the next 2 years; children were provided centre-based daily education from age 1-3 years (Brooks-Gunn 1992, 1994 (McCarton 1997; McCormick 2006))</li> </ul>
Parent-child interaction (up to 21 months)	<ul style="list-style-type: none"> <li>• Home interventions were provided initially weekly for 4 months, then every alternate week and then every month for the last 3 months (Barrera 1986)</li> <li>• The home intervention was provided through weekly sessions lasting 1 year; the number of visits ranged from 0-47 and generally lasted less than 1 hour (Black 1995, 2007)</li> </ul>

	<ul style="list-style-type: none"> <li>Recruitment at birth, followed up until 21 months (Tomopoulos 2006)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?</b>	
Development quotient (15 months to 14 years)	<ul style="list-style-type: none"> <li>1<sup>st</sup> phase of intervention: told parents to converse and sing to their children; 2<sup>nd</sup> phase of intervention: mothers were told to play with the children using homemade toys and interact through conversation (Gardner 2003 (Walker 2004))</li> <li>Early stimulation program: early stimulation techniques taught to the mothers; stresses play and verbal interactions with the child; involves age appropriate play and information sharing on child development; mothers had access to books to gain knowledge about child development, parenting and preparation of homemade toys (Gofin 1996)</li> <li>Intervention group: received home-made simple toys and while in hospital, trained nurses played with infants; after discharge home visits made – parents were taught how to make simple toys and play with their children based on standardised curriculum (Grantham-McGregor 1980, 1987, 1994)</li> </ul>
Mental and psychomotor development (up to 24 months)	<ul style="list-style-type: none"> <li>Parents were taught how to stimulate their infants using visual and auditory stimuli; interventions included age-appropriate toys, books, pictorials that were used by the mothers while interacting with their babies; follow-up of the children's progress was done monthly over the 1<sup>st</sup> year and every alternate month in the 2<sup>nd</sup> year and parental education regarding use of these tools was reinforced along with information on child development and their child's progress (Bao 1999)</li> <li>Developmental programming intervention involved special curriculum focused on development of cognitive, communication, motor development, socio-emotional skills and self-help skills based on parent's observation; parent-infant intervention involved increasing parent-infant interaction by helping parents to modify their own behavior based on the skills and abilities of their children, and develop specific interactions with an aim to increase parent-child interaction like feeding habits, etc. (Barrera 1986)</li> </ul>
Behaviour (up to 5 years)	<ul style="list-style-type: none"> <li>1<sup>st</sup> phase of intervention: told parents to converse and sing to their children; 2<sup>nd</sup> phase of intervention: mothers were told to play with the children using homemade toys and interact through conversation (Gardner 2003 (Walker 2004))</li> <li>Mothers were provided support care; age-appropriate games and activities were conducted (Brooks-Gunn 1992, 1994 (McCarton 1997; McCormick 2006))</li> </ul>
Parent-child interaction (up to 21 months)	<ul style="list-style-type: none"> <li>Developmental programming intervention involved special curriculum focused on development of cognitive, communication, motor development, socio-emotional skills and self-help skills based on parent's observation; parent-infant intervention involved increasing parent-infant interaction by helping parents to modify their own behavior based on the skills and abilities of their children, and develop specific interactions with an aim to increase parent-child interaction like feeding habits, etc. (Barrera 1986)</li> <li>The home intervention: provision of knowledge and skills to parents to improve parent-child interaction, improve parenting skill, increase knowledge about child development; used problem solving, age-appropriate toys, handbooks outlining normal child development; other activities focused on nutrition, feeding, family problems and other issues like financing, jobs, housing; standardised curriculum was used to provide the intervention (Black 1995, 2007)</li> <li>Control group of specialist intervention involving books, toys and information on child development (Tomopoulos 2006)</li> </ul>
<b>How could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?</b>	
NR	
<b>What could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?</b>	
NR	

What could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?
NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; IQ: Intelligence Quotient; KMC: kangaroo mother care; MDI: Mental Development Index; N: number; NICU: neonatal intensive care unit; NR: not reported; PDI: Psychomotor Development Index; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; UK: United Kingdom; USA: United States of America

**Table 64: Evidence table for Miller 2011<sup>44</sup>**

<b>Review ID</b>	Miller 2011
<b>Search date</b>	1887 to October 2010
<b>Review method</b>	Meta-analysis and narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	7 included studies; 3 relevant studies (RCTs)
<b>No. participants in relevant studies</b>	415
<b>Location/setting</b>	Canada: 1 RCT; Ireland: 1 RCT; unclear: 1 RCT
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 10/11 ('high' quality)
<b>Quality of relevant studies</b>	High risk of bias: 2 RCT; unclear risk of bias: 1 RCT
<b>Review objective</b>	To assess the effects of home-based program aimed specifically at improving developmental outcomes for preschool children from disadvantaged families
<b>Review eligibility criteria</b>	<u>Designs</u> : RCTs; <u>participants</u> : parents with children up to the age of school entry, who were socially disadvantaged in respect to poverty, lone parenthood or ethnic minority status; <u>interventions</u> : home-based, delivered by trained lay or professional family visitors, designed to improve child intellectual and socio-emotional development through the provision of relevant knowledge and skills to the parent (group-based interventions were excluded); control group had to receive no intervention/standard care (studies comparing 2 interventions or without a control group were excluded)
<b>Participant population</b>	Socially disadvantaged mothers aged 13 to over 40 years e.g. low maternal education
<b>Intervention</b>	Training teenage mothers in infant stimulation (6 months of bi-weekly home visits by psychology graduate and training aide) (1 RCT); providing the mother with simple tools to maximise the quality of the mother-child interaction (3 prenatal visits, and 5 postnatal visits by public health nurse) (1 RCT); supporting and encouraging parents to rear their children (home visits for 1 <sup>st</sup> 12 months of child's life from family visitor) (1 RCT)
<b>Comparator</b>	'Standard care' control
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Carey Infant Temperament Questionnaire	Intervention mothers reported child's temperament as less 'difficult' than control mothers (mean rating: 3.8 vs. 3.4); this difference was significant at mid-term (4 month) (P<0.05) (1 RCT, N=80)
	No difference at post-test (8 months) (1 RCT, N=80)

<sup>44</sup> green shading indicates results significantly in favour of the intervention

<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Cognitive development (BSID)	SMD: 0.11 (95% CI -0.46 to 0.69) (1 RCT, N=47)
Psychomotor development	No statistically significant differences in psychomotor development between groups 7.5 months after the intervention (1 RCT, N=47)
	Better psychomotor development in intervention group vs. control group (statistically significant) at post-test (8 months), 1 year and 2 year follow up. At each time point, intervention children weighed more (statistically significant) than control children (1 RCT, N=80)
	No differences in length (1 RCT, N=80)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Home environment	No statistically significant differences between groups in terms of the quality of the home environment (2 RCTs, N=127)
Mother-infant interaction	At 4 months, significantly better interaction between the mother-infant dyads in the intervention group compared to the control group, intervention mothers talked to their children for a greater proportion of time and intervention infants averted their gaze less than those in the control group (1 RCT, N=80)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Parenting behaviour	(1 RCT, N=262) At post-test (12 months): Mothers who read to their child were more likely to be in the intervention group (RR: 1.81 (95% CI 1.52, 2.16) P<0.0001) Mothers who read to their child daily were more likely to be in the intervention group (RR: 2.13 (95% CI 1.34, 3.38) P<0.0001). Mothers in the intervention group more frequently engaged in developmental stimulation games with their children including cognitive games (MD: 2.13 (95% CI 1.65, 2.60) P<0.01) and nursery rhymes (MD: 4.24 (95% CI 3.59, 4.88) P<0.01)
	At the 7 year follow-up: Intervention children were more likely to visit the library (RR: 1.58 (95% CI 1.10, 2.26) P<0.01) Intervention mothers were more likely to check their child's homework (RR: 1.23 (95% CI 1.05, 1.43) P<0.01)
	There was no difference for motor games at post-test (12 months) (1 RCT, N=262)



Parenting attitudes	(1 RCT, N=262) At post-test (12 months): Mothers in the intervention group reported feeling less tired (RR: 0.86 (95% CI 0.77, 0.97)), less miserable (RR: 0.75 (95% CI 0.63, 0.90)) and less frequently wanting to stay in (RR: 0.58 (95% CI 0.43, 0.79)) Intervention mothers in this study reported more positive feelings (MD: 1.44 (95% CI 1.14, 1.775) P<0.01) and fewer negative feelings (MD: -0.50 (95% CI -0.77, -0.23) P<0.01) towards their child At the 7 year follow-up: Intervention mothers were significantly more likely to disagree with the statement that 'children should be smacked for persistently bad behaviour' (RR: 2.11 (95% CI 1.10, 4.06) P<0.05)
	The differences in maternal self-esteem observed at post-test were no longer evident at the 7 year follow (1 RCT, N=262)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?</b>	
Psychomotor development (7.5-24 months)	Significant <ul style="list-style-type: none"> <li>Field 1982: home visits by a psychology graduate student and a training CETA (Comprehensive Employment Training ACT) aide</li> </ul> Non-significant <ul style="list-style-type: none"> <li>Infante-Rivard 1989: home visits by public health nurse</li> </ul>
<b>Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Psychomotor development (7.5-24 months)	Significant <ul style="list-style-type: none"> <li>Field 1982: mothers were recruited from a large university hospital neonatal nursery; location NR; home visits</li> </ul> Non-significant <ul style="list-style-type: none"> <li>Infante-Rivard 1989: Canada; home visits</li> </ul>
<b>To whom could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?</b>	
Psychomotor development (7.5-24 months)	Significant <ul style="list-style-type: none"> <li>Field 1982: mean maternal age: 16.3 years; the sample was reported as Black; mothers were teenagers with an infant at the neonatal stage recruited from a large university hospital neonatal nursery; infants were delivered at term without obstetric complications; type of social disadvantage: teenage mother, low income and low SES</li> </ul> Non-significant <ul style="list-style-type: none"> <li>Infante-Rivard 1989: mean maternal age: 24.4 years; ethnicity NR; pregnant women with less than 12 years of schooling and/or were living below the poverty line according to the Canadian criteria, had Canadian nationality, were French or English speaking, had no chronic or psychiatrically treated illness and no drug or alcohol abuse, women were excluded is the baby or mother required a hospital stay longer than a week, for congenital malformation or disease of the child requiring regular medical care, or for maternal postpartum depression</li> </ul>

<b>When</b> could be the best time for the intervention, program, or message delivery to occur?	
Psychomotor development (7.5-24 months)	<p>Significant</p> <ul style="list-style-type: none"> <li>Field 1982: recruited mothers with newborn infant; 6 months bi-weekly home visits</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>Infante-Rivard 1989: recruited pregnant women; 3 prenatal visits (28, 30, 36 weeks) and 5 postnatal home visits (1, 2, 5, 12, 30 weeks)</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be delivered?	
Psychomotor development (7.5-24 months)	<p>Home-based preschool child development interventions compared with a 'standard care' control</p> <p>Significant</p> <ul style="list-style-type: none"> <li>Field 1982: training mothers in infant stimulation using care taking, sensorimotor and mother interaction exercises, adapted from developmental assessment scales such as the NBAS, and BSID; demonstration of exercised to mother, provision of illustrate cards of the exercises and toys, and mother demonstrates the exercises; mothers asked to practice each exercise 5 minute per day; 6 exercised per home visit</li> </ul> <p>Non-significant</p> <ul style="list-style-type: none"> <li>Infante-Rivard 1989: teaching and counselling, based on items in the HOME; the aims was to provide the mother with simple tools (through setting simple objectives at each visit) to maximise the quality of the mother-child interaction</li> </ul>
<b>How</b> could the intervention, program or messages regarding infant social and emotional wellbeing and development be framed?	
NR	
<b>What</b> could <b>impede</b> or interfere with engagement with interventions or programs or caregivers enacting upon messages?	
NR	
<b>What</b> could <b>facilitate</b> or drive with engagement with interventions or programs or caregivers enacting upon messages?	
NR	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID: Bayley Scales of Infant Development; CI: confidence interval; MD: mean difference; N: number; NR: not reported; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; SMD: standardised mean difference

**Table 65: Evidence table for Mortensen 2014<sup>45</sup>**

<b>Review ID</b>	Mortensen 2014
<b>Search date</b>	July 2012 (results had to be published 2000 to 2011)
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	In total: 18 articles reporting on 19 interventions; relevant studies: 17 interventions commencing prenatally or < 12 months of age (2 interventions started > 12 months of age) (13 interventions used a random design (RCTs); 4 used a 'non-random' design: this included cluster-randomisation, matched control group, pre-test and post-test designs)
<b>No. participants in relevant studies</b>	6,039
<b>Location/setting</b>	Australia: 1 intervention; Canada: 1 intervention; Netherlands: 2 interventions; South Africa: 2 interventions; UK: 2 interventions; USA: 9 interventions
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 5/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Not formally assessed (only categorised as random (therefore assumed to be RCTs) and non-random)
<b>Review objective</b>	To determine average intervention effectiveness in increasing observed supportive parent-child interactions; and to evaluate child age at the start of the intervention, duration of intervention, breadth of services, professional qualifications of intervenor, type of play task used for assessment and participant randomisation as potential moderators of effectiveness
<b>Review eligibility criteria</b>	<u>Design</u> : RCT or pre-post design; <u>participants</u> : majority (>50%) of the sample had to be characterised by low SES, low parental education, or teenage childbearing; <u>interventions</u> : relationship-based intervention for parents with children between 0 and 48 months (including antenatal interventions), specifically targeting parent-child relational interactions (stand alone, or embedded within a larger program); <u>outcomes</u> : studies had to report quantitative results and include observational measure of parent-child interaction; <u>other</u> : studies with results published in peer-reviewed journals (conference papers, dissertations, books were excluded), between 2000 to 2011 were included
<b>Participant population</b>	Pregnant women and/or parents of children between 0 and 48 months; all interventions targeted the mother-child dyad (one study included 5% of the sample as fathers); the majority of the sample were categorised by low SES, low parental education, or teenage childbearing
<b>Intervention</b>	Parent-child relational interactions (stand-alone or embedded within a larger program e.g. parent counselling); 18/19 interventions took place in the family home; the 19 interventions provided services spanning 1.50 to 36.00 months (mean: 13.93, SD: 11.50); number of intervention sessions ranged from 2.83 to 64.00 (mean: 26.78, SD: 19.75)
<b>Comparator</b>	Not clearly reported for all interventions
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

<sup>45</sup> green shading indicates results significantly in favour of the intervention

Parent-infant relationship																									
Outcome measure used in the review	Results reported in the review																								
<b>Pooled results</b>																									
Observed supportive parent-child interactions (1.5-30 months)	ES (d): 0.23 (95% CI 0.14, 0.33); $I^2$ 59%; $P < 0.001$ (19 interventions (mostly RCTs), $N=6,807$ ) (2 interventions commenced > 12 months)																								
Parent/caregiver psychosocial wellbeing																									
Outcome measure used in the review	Results reported in the review																								
NR	NR																								
Parent/caregiver knowledge, practices and behaviours																									
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Outcome measure used in the review	Results reported in the review																								
NR	NR																								
Who could deliver the intervention, program or messages to optimise infant social and emotional wellbeing and development?																									
Observed supportive parent-child interactions (1.5-30 months)	<p>Overall, 12 interventions used a professional intervention, and 7 used a paraprofessional</p> <p>Mixed-effects moderator analyses for random subsample of interventions:</p> <ul style="list-style-type: none"> <li>Results indicated that interventions that utilised professional intervenors had significantly larger effect sizes</li> <li>Professionals: had a bachelor degree, advanced degree, and/or professional licensure</li> <li>Paraprofessionals: trained in the intervention but did not hold a professional licensure (such as local mothers from the community)</li> </ul> <table border="1"> <thead> <tr> <th>Categorical moderator</th> <th><i>b</i></th> <th>SE <i>b</i></th> <th><math>\tau^2</math></th> <th><i>k</i></th> <th><i>D(Q)</i></th> </tr> </thead> <tbody> <tr> <td>Intervenor</td> <td></td> <td></td> <td>.004</td> <td></td> <td></td> </tr> <tr> <td>1 = Professional</td> <td>-.15 (<math>P &lt; 0.01</math>)</td> <td>.06</td> <td></td> <td>10</td> <td>.11 (14.94)</td> </tr> <tr> <td>0 = Paraprofessional</td> <td></td> <td></td> <td></td> <td>5</td> <td>.26 (2.08)</td> </tr> </tbody> </table>	Categorical moderator	<i>b</i>	SE <i>b</i>	$\tau^2$	<i>k</i>	<i>D(Q)</i>	Intervenor			.004			1 = Professional	-.15 ( $P < 0.01$ )	.06		10	.11 (14.94)	0 = Paraprofessional				5	.26 (2.08)
Categorical moderator	<i>b</i>	SE <i>b</i>	$\tau^2$	<i>k</i>	<i>D(Q)</i>																				
Intervenor			.004																						
1 = Professional	-.15 ( $P < 0.01$ )	.06		10	.11 (14.94)																				
0 = Paraprofessional				5	.26 (2.08)																				
Where could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?																									
Observed supportive parent-child interactions (1.5-30 months)	<ul style="list-style-type: none"> <li>The majority (16/17) of interventions took place in the family home (in 1 study, delivery was to adolescent mothers who were already participating in a childcare program located in their high school) (Mayers 2008)</li> <li>All studies except 2 (Letourneau 2011: hospital; Kemp 2011: clinic) assessed parent-child interactions at home</li> </ul> <p>Country</p> <ul style="list-style-type: none"> <li>USA (Akai 2008; Duggan 2007; Goodson 2000; Knoche 2012; Love 2005; Mayers 2008; Olds 2004 (Study 1 and 2); Rodriguez 2010)</li> <li>South Africa (Cooper 2002; Cooper 2009)</li> <li>Netherlands (Klein Velderman 2006 (Study 1 and 2))</li> <li>UK (Barlow 2007; Svanberg 2010)</li> <li>Canada (Letourneau 2011)</li> <li>Australia (Kemp 2011)</li> </ul>																								

To whom could the intervention, program or messages be delivered to optimise infant social and emotional wellbeing and development?																																																							
Observed supportive parent-child interactions (1.5-30 months)	<p>Inclusion criterion: the majority (&gt;50%) of the sample had to be characterised by low SES, low parental education or teenage childbearing</p> <ul style="list-style-type: none"> <li>All interventions targeted the mother-child dyad (1 intervention had 5% of the sample as fathers (Knoche 2012))</li> </ul>																																																						
When could be the best time for the intervention, program, or message delivery to occur?																																																							
Observed supportive parent-child interactions (1.5-30 months)	<ul style="list-style-type: none"> <li>In total 19 interventions spanned 1.50 to 36.00 months (mean 13.93, SD: 11.50 months); Number of sessions ranged from 2.83 to 64.00 (mean: 26.78, SD: 19.75)</li> <li>Random interventions: number of sessions, mean: 40.37, SD: 19.11; months: mean: 26.15, SD: 12.17</li> <li>Time lag: interventions assessed supportive parenting anywhere from 0 to 35.50 months (mean: 7.68, SD: 10.82) after the intervention</li> </ul> <p>Mixed-effects moderator analyses for random subsample of interventions:</p> <ul style="list-style-type: none"> <li>Results indicated that interventions that were <b>shorter</b> in duration in both the <b>number of sessions and months</b> had significantly larger effect sizes</li> </ul> <table border="1"> <thead> <tr> <th>Categorical moderator</th> <th><i>b</i></th> <th><i>SE b</i></th> <th><math>\tau^2</math></th> <th><i>k</i></th> <th><i>D(Q)</i></th> </tr> </thead> <tbody> <tr> <td>Child age at start</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1 = &gt; 12 months</td> <td>.07</td> <td>.09</td> <td>.006</td> <td>2</td> <td>.27 (0.02)</td> </tr> <tr> <td>1 = &lt; 12 months</td> <td>.04</td> <td>.03</td> <td></td> <td>7</td> <td>.24 (16.69) (P&lt;0.01)</td> </tr> <tr> <td>0 = prenatal</td> <td></td> <td></td> <td></td> <td>6</td> <td>.20 (2.91)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Continuous moderator</th> <th><i>b</i></th> <th><i>SE b</i></th> <th><math>\tau^2</math></th> <th><i>M</i></th> <th><i>d at M</i></th> </tr> </thead> <tbody> <tr> <td>No. sessions (control for time lag)</td> <td>-.003 (P&lt;0.05)</td> <td>.002</td> <td>.003</td> <td>40.37</td> <td>.14</td> </tr> <tr> <td>Months</td> <td>-.009 (P&lt;0.001)</td> <td>.001</td> <td>.000</td> <td>26.15</td> <td>.11</td> </tr> <tr> <td>Time lag</td> <td>.007 (P&lt;0.05)</td> <td>.003</td> <td>.003</td> <td></td> <td></td> </tr> </tbody> </table>	Categorical moderator	<i>b</i>	<i>SE b</i>	$\tau^2$	<i>k</i>	<i>D(Q)</i>	Child age at start						1 = > 12 months	.07	.09	.006	2	.27 (0.02)	1 = < 12 months	.04	.03		7	.24 (16.69) (P<0.01)	0 = prenatal				6	.20 (2.91)	Continuous moderator	<i>b</i>	<i>SE b</i>	$\tau^2$	<i>M</i>	<i>d at M</i>	No. sessions (control for time lag)	-.003 (P<0.05)	.002	.003	40.37	.14	Months	-.009 (P<0.001)	.001	.000	26.15	.11	Time lag	.007 (P<0.05)	.003	.003		
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	<p>as one component within a broader intervention (e.g. mental/physical health services for parents and children, parent educational/employment assistance, economic assistance, community source referrals)</p> <ul style="list-style-type: none"> <li>○ In addition to parent training, participants in the home visiting component of Early Head Start were provided with a case manager that helped coordinate developmental screenings, health care visits, parenting educational opportunities and referrals for economic assistance (Love 2005)</li> <li>○ Nurse Family Partnerships targeted mothers' health behaviours, future pregnancy delay, and educational attainment (Olds 2004)</li> </ul> <p>12 interventions assessed interactions during free play; 7 assessed during structured ply</p> <ul style="list-style-type: none"> <li>● After accounting for the moderating effect of time lag, play task became a significant moderator – interventions that assessed supportive parent-child interactions in the context of <b>free play</b> showed significantly higher effect sizes than those that used structured play</li> <li>● Free play <ul style="list-style-type: none"> <li>○ Akai 2008: My Baby and Me</li> <li>○ Barlow 2007: Family Partnership</li> <li>○ Cooper 2009: Social Baby, World Health Organization</li> <li>○ Kemp 2011: Miller Early Childhood Sustained Home-Visiting</li> <li>○ Klein Velderman Study 1 and 2: Video Feedback Intervention to Enhance Positive Parenting, plus Parental Attachment Representation</li> <li>○ Love 2005: Early Health Start – home visiting</li> <li>○ Olds Study 1 and Study 2: Nurse Family Partnerships – paraprofessional/nurses</li> </ul> </li> <li>● Structured: <ul style="list-style-type: none"> <li>○ Duggan 2007: Health Families Alaska</li> <li>○ Gardner 2007: Family Check-Up</li> <li>○ Goodson 2000: Comprehensive Child Development Program</li> <li>○ Letourneau 2001: Keys to Caregiving</li> <li>○ Lukenheimer 2008: Family Check-Up</li> <li>○ Rodriguez 2010: Healthy Families New York</li> </ul> </li> <li>● Structured play: strict direction and a specific goal, and/or performing a series of tasks in a certain order, e.g. some parents were instructed to teach their child something that was intentionally above the child's abilities (Caldera 2007; Duggan 2007; Goodson 2000) or engaged in a specific</li> <li>● Free play: parents and children instructed to play together as they normally would (with toys provided by the researcher or with objects in the home, e.g. Love 2005; Klein Velderman 2006)</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Categorical moderator</th> <th style="text-align: center;"><i>B</i></th> <th style="text-align: center;"><i>SE b</i></th> <th style="text-align: center;"><math>\tau^2</math></th> <th style="text-align: center;"><i>k</i></th> <th style="text-align: center;"><i>D(Q)</i></th> </tr> </thead> <tbody> <tr> <td>Breadth of services</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1 = direct</td> <td style="text-align: center;">.19 (P&lt;0.01)</td> <td style="text-align: center;">.06</td> <td style="text-align: center;">.002</td> <td style="text-align: center;">7</td> <td style="text-align: center;">.27 (2.27)</td> </tr> <tr> <td>0 = comprehensive</td> <td></td> <td></td> <td></td> <td style="text-align: center;">8</td> <td style="text-align: center;">.08 (9.56)</td> </tr> <tr> <td>Play task</td> <td></td> <td></td> <td style="text-align: center;">.007</td> <td></td> <td></td> </tr> <tr> <td>1 = structured play</td> <td style="text-align: center;">-.03</td> <td style="text-align: center;">.08</td> <td></td> <td style="text-align: center;">6</td> <td style="text-align: center;">.16 (19.54) (P&lt;0.01)</td> </tr> <tr> <td>0 = free play</td> <td></td> <td></td> <td></td> <td style="text-align: center;">9</td> <td style="text-align: center;">.19 (3.97)</td> </tr> <tr> <td>(control for time lag)</td> <td style="text-align: center;">(-.12 (P&lt;0.001))</td> <td style="text-align: center;">.03</td> <td style="text-align: center;">.000</td> <td></td> <td></td> </tr> </tbody> </table>	Categorical moderator	<i>B</i>	<i>SE b</i>	$\tau^2$	<i>k</i>	<i>D(Q)</i>	Breadth of services						1 = direct	.19 (P<0.01)	.06	.002	7	.27 (2.27)	0 = comprehensive				8	.08 (9.56)	Play task			.007			1 = structured play	-.03	.08		6	.16 (19.54) (P<0.01)	0 = free play				9	.19 (3.97)	(control for time lag)	(-.12 (P<0.001))	.03	.000		
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Mortensen 2014 discuss: "Working with socioeconomically disadvantaged families may pose an additional set of challenges for which shorter interventions may be more suitable. Sample attrition tends to be systematic... with the highest risk participants generally being the most difficult to retain... The lives of high-risk families tend to be marked by unstable living arrangements and varied conditions... making compliance the lengthy intervention protocol more challenging"																																																	

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; CI: confidence interval; ES: effect size; N: number; NR: not reported; P: P value; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SES: socio-economic status; SD: Standard deviation; UK: United Kingdom; USA: United States of America

## Interventions for parents with alcohol or drug problems

**Table 66: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review*			
		Bowie 2005	Niccols 2012~	Suchman 2006	Turnbull 2012
Study ID	Bartu 2006				✓ (RCT, N=154)
	Belcher 2005		✓ (cohort, N=80)		
	Black 1994	✓ (RCT, N=60)		✓ (RCT, N=60)	✓ (RCT, N=60)
	Butz 1998				✓ (RCT, N=204)
	Camp 1995, 1997`	✓` (quasi-experimental with repeated measures, N=170)	✓ (cohort, N=35)		
	Dakof 2003				✓ (RCT, N=103)
	Field 1998	✓ (RCT, N=126)	✓ (quasi-experimental, N=126)	✓ (non-random assignment, N=126)	
	French 1998	✓ (RCT, N=60)			
	Grant 1996 (Ernst 1999`)	✓` (5 year research demonstration project, N=61)		✓` (RCT, N=65)	✓ (qRCT, N=66)
	Huebner 2002			✓ (non-random assignment, N=200)	
	Jansson 1996		✓ (cohort, N=24)		
	Quinlivan 2000				✓ (RCT, N=136)
	Schuler 2000	✓ (RCT, N=171)		✓ (RCT, N=127)	✓ (RCT, N=227)
Whiteside-Mansell 1999		✓ (quasi-experimental, N=19)			

\*Note discrepancies in descriptions of study designs, and Ns

~Ns not clearly reported

**Abbreviations:** N: number; qRCT: quasi-randomised controlled trial; RCT: randomised controlled trial

**Table 67: Evidence table for Bowie 2005<sup>46</sup>**

<b>Review ID</b>	Bowie 2005
<b>Search date</b>	1980 to June 2003
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	6 studies (4 RCTs; 1 '5 year research demonstration project'; 1 'quasi-experimental study with repeated measures')
<b>No. participants in relevant studies</b>	648
<b>Location/setting</b>	NR
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 3/11 ('low' quality)
<b>Quality of relevant studies</b>	Not assessed/reported
<b>Review objective</b>	To ascertain what are the most effective interventions for enhancing mother-infant interactions of drug-abusing mothers
<b>Review eligibility criteria</b>	<u>Participants/interventions:</u> studies focused on implementing an intervention aimed at enhancing the mother-infant interactions of drug-abusing mother and their infants; <u>other:</u> articles in English; published from 1980 to June 2003

<sup>46</sup> green shading indicates results significantly in favour of the intervention

<b>Participant population</b>	Alcohol and/or drug-abusing mothers and their infants
<b>Intervention</b>	Home visitation (3 studies); institution based interventions (3 studies: school-based program (1 study); residential treatment program (1 study); in hospital postnatal program (1 program)); intervention durations/intensities varied greatly, e.g. from a short intervention within 48 hours of birth (with no follow up), to home visits for 18 months postpartum, or 36 months of paraprofessional support
<b>Comparator</b>	Not clear
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
ESCS at 12 months	Superior scores in intervention group (P=0.05) (1 RCT, N=126)
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
BSID at 6, 12 and 18 months	Slightly higher cognitive scores at 6 months (1 RCT, N=60) No differences at 12 and 18 months (1 RCT, N=60)
BSID – MDI and PDI (age NR)	Significantly higher scores for intervention infants (1 RCT, N=108 in follow up)
BSID – MDI at 12 months	Superior scores in intervention group (P=0.05) (1 RCT, N=126)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Mother-infant interactions during feeding (Cowan and Cowan 1992 rating scale) at 6 months and 18 months	No direct effect of intervention (1 RCT, N=171; N=131 for follow up)
Emotionally responsive, and providing more opportunities for stimulation: HOME Scale	Favours intervention group (P=0.033); intervention group “marginally” more opportunities (P=0.065) (1 RCT, N=60)
NCAFS Scale 48 to 72 hours after hospital discharge	Intervention group showed significant improvement in score (P=0.0058) (1 RCT, N=60)
NCAFS Scale (% positive interactions) (6 weeks, 6 months, 12 months of age)	Significant improvement between 1 <sup>st</sup> and 3 <sup>rd</sup> assessment (27% to 100%) (1 quasi-experimental study, N=170)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
BDI Score at 12 months	Significantly lower in intervention group (1 RCT, N=126)
Maternal self-esteem (Hudson ISE) at 12 months	Significant improvement between 1 <sup>st</sup> and 3 <sup>rd</sup> assessment t = 5.98 (1 quasi-experimental study, N=170)
AAPI Scale	Significant improvement between 1 <sup>st</sup> and 3 <sup>rd</sup> assessment P < 0.01 (1 quasi-experimental study, N=170)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study result</b>	
Women being drug free at 18 months	Intervention group “marginally” more likely (P=0.059) (1 RCT, N=60)
Continued drug use at 12 months	Lower incidence in intervention group (1 RCT, N=126)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR



Systems outcomes	
Outcome measure used in the review	Results reported in the review
<i>Single study results</i>	
Children in appropriate custody situation at end of 36 months	Intervention: 69% vs. control: 29% (1 RCT, N=61)

**Abbreviations:** AAPI: Adult-Adolescent Parenting Inventory; AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BDI: Beck Depression Inventory; BSID: Bayley Scales of Infant Development; ESCS: Early Social Communication Scale; HOME: Home Observation Measurement of the Environment; ISE: Index of Self-Esteem; MDI: Mental Development Index; N: number; NCAFS: Nursing Child Assessment Feeding Scale; NR: not reported; P: P value; PDI: Psychomotor Development Index; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews

**Table 68: Evidence table for Niccols 2012<sup>47</sup>**

<b>Review ID</b>	Niccols 2012
<b>Search date</b>	1990 to May 2011
<b>Review method</b>	Narrative synthesis
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	5 relevant studies (2 quasi-experimental studies; 3 cohort studies)
<b>No. participants in relevant studies</b>	Unclear reporting in table, >284 in relevant studies
<b>Location/setting</b>	USA
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 7/11 ('moderate' quality)
<b>Quality of relevant studies</b>	Review authors' summary: 4 studies had 'low' quality score, 1 study had 'moderate' quality score (Newcastle Ottawa scale)
<b>Review objective</b>	To examine the impact and effects of integrated programs for women with substance abuse issues and their children
<b>Review eligibility criteria</b>	<u>Designs</u> : randomised, quasi-experimental or cohort studies; <u>participants</u> : women who were pregnant or parenting; all participants had substance abuse problems at baseline (any drug or alcohol); <u>interventions</u> : treatment program included at least 1 specific substance use treatment (e.g. individual or group therapy, methadone) and at least 1 parenting or child treatment service (e.g. prenatal care, child care, parenting classes); <u>outcomes</u> : quantitative data on child or other outcomes (e.g. length of treatment stay, treatment completion, maternal substance use, wellbeing or parenting)
<b>Participant population</b>	General summary from review authors: women were pregnant or parenting, were typically poly-substance users with a primary substance problem: cocaine, methadone, heroin, alcohol or cannabis; their average age was 27-31 years, and most had experience trauma, had mental health problems were unemployed, single mothers
<b>Intervention</b>	Integrated outpatient program (3 studies) or integrated residential program (2 studies); general summary from review authors: programs were 6 to 12 months
<b>Comparator</b>	No treatment
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
Outcome measure used in the review	Results reported in the review
<i>Single study results</i>	
ESCS – Responding (12 months)	MD: 0.5 (1 quasi-experimental study, N=126)
ESCS – Initiating (12 months)	MD: 0.4 (1 quasi-experimental study, N=126)
ESCS – Maintaining (12 months)	MD: 0.3 (1 quasi-experimental study, N=126)

<sup>47</sup> green shading indicates results significantly in favour of the intervention

<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
BSID – MDI (12 months)	MD: 10.3 (1 quasi-experimental study, N=126)
BSID – PDI (12 months)	MD: 0.9 (1 quasi-experimental study, N=126)
INFANIB (3 months, 6 months)	MD: -0.6 (3 months); 1.5 (6 months) (1 quasi-experimental study, N=126)
BSID – MDI (6 months, 12 months)	ES (SE): -0.17 (0.63) (P=0.77) (6 months) (N=19); -0.43 (0.45) (P=0.45) (12 months) (1 quasi-experimental study, N=14)
BSID – PDI (6 months, 12 months)	ES (SE): -0.37 (0.63) (P=0.56) (6 months) (N=19); 0.96 (0.59) (P=0.10) (12 months) (1 quasi-experimental study, N=14)
BSID – MDI (6 months, 6-12 months, 12-18 months)	M (SD): 100.9 (21.5) (6 months); 103.2 (14.6) (6-12 months); 92.8 (6.5) (12-18 months) (1 cohort study, N=80)
BSID – MDI (6 months, 12 months, 24 months)	M (SD): 100 (13.8) (6 months) (1 cohort study, N=24); 107 (17.0) (12 months) (1 cohort study, N=19); 98 (6.8) (24 months) (1 cohort study, N=2)
BSID – PDI (6 months, 12 months, 24 months)	M (SD): 110 (13.3) (6 months) (1 cohort study, N=24); 107 (10.5) (12 months) (1 cohort study, N=19); 119 (11.5) (24 months) (1 cohort study N=2)
BSID – MDI > 1 SD above Mean (6 months, 12 months)	97% (6 months) (N=33); 92% (12 months) (1 cohort study, N=26)
BSID – PDI > 1 SD above Mean (6 months, 12 months)	91% (6 months) (N=35); 96% (12 months) (1 cohort study, N=35)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Length (cm) (3 months, 6 months, 12 months)	MD: -0.7 (3 months); 2.0 (6 months); 0.9 (12 months) (1 quasi-experimental study, N=126)
Weight (g) (3 months, 6 months, 12 months)	MD: -103.4 (3 months); 220.7 (6 months); 302.1 (12 months) (1 quasi-experimental study, N=126)
Head circumference (cm) (3 months, 6 months, 12 months)	MD: -0.9 (3 months); 2.5 (6 months); 3.5 (12 months) (1 quasi-experimental study, N=126)
Length percentile (6 months)	ES (SE): 1.16 (0.85) (P=0.17) (1 quasi-experimental study, N=9)
Weight percentile (6 months, 12 months)	ES (SE): 1.16 (0.85) (P=0.17) (6 months) (1 quasi-experimental study, N=9); 2.48 (0.97) (P=0.01) (12 months) (1 quasi-experimental study, N=7)
Head circumference percentile (6 months, 12 months)	ES (SE): 1.82 (0.91) (P=0.05) (6 months) (1 quasi-experimental study, N=9); 2.36 (1.05) (P=0.02) (12 months) (1 quasi-experimental study, N=7)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver psychosocial wellbeing</b>	
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<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID: Bayley Scales of Infant Development; cm: centimetres; ES: effect size; ESCS: Early Social Communication Scale; g: grams; INFANIB: Infant Neurological International Battery; M: mean; MD: mean difference; MDI: Mental Development Index; N: number; NR: not reported; P: P value; PDI: Psychomotor Development Index; ROBIS: Risk of Bias in Systematic Reviews; SD: standard deviation; SE: standard error; USA: United States of America

**Table 69: Evidence table for Suchman 2006<sup>48</sup>**

<b>Review ID</b>	Suchman 2006	
<b>Search date</b>	NR (“completed within the last 10 years”)	
<b>Review method</b>	Narrative synthesis	
<b>Ongoing studies</b>	NR	
<b>No. studies of relevance to this Overview and their design(s)</b>	5 relevant studies (3 RCTs; 2 studies with “nonrandom assignment”)	
<b>No. participants in relevant studies</b>	578	
<b>Location/setting</b>	USA	
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 1/11 (‘low’ quality)	
<b>Quality of relevant studies</b>	Not assessed/reported	
<b>Review objective</b>	To review published evaluations of outpatient and home-visit parenting intervention conducted with drug-abusing and dependent mothers; specifically to review the interventions in terms of their impact on drug abuse, maternal adjustment, parent-child interactions and child outcomes	
<b>Review eligibility criteria</b>	<u>Designs:</u> quasi-experimental as well as experimental designs; <u>participants/interventions:</u> programs (outpatient and home-visiting parenting interventions with drug-abusing and dependent mothers) for parents of young children (birth to 5 years); <u>other:</u> conducted/published within the past 10 years (no restrictions on sample size)	
<b>Participant population</b>	Drug abusing and dependent mothers	
<b>Intervention</b>	Outpatient (2 studies) and home-visiting (3 studies) parenting interventions; interventions varied in duration/intensity, e.g.: from weekly 2 hour group sessions for 8 weeks, to 1 home visit weekly from birth to 6 weeks plus 2 home visits per week from 6 weeks to 36 months	
<b>Comparator</b>	Not clear: assumed no intervention	
<b>Outcome domain</b>		
<b>Infant social and emotional wellbeing or development up to one year of age</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<i>Single study results</i>		
ESCS at 12 months	Intervention group scored higher than control group (1 study with non-random assignment, N=126)	
Infant stress (salivary cortisol) at 3 and 6 months postpartum	Intervention group had lower levels than control group (1 study with non-random assignment, N=126)	
<b>Development for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<i>Single study results</i>		
BSID at 6, 12, 18 months postpartum	No group differences (1 RCT, N=60)	
BSID at 36 months	Both groups below clinical norms (1 RCT, N=65)	
BSID Mental Health Scale at 12 months	Intervention group had better scores than control group (1 study with non-random assignment, N=126)	
<b>Behaviour for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
NR	NR	
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>		
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>	
<i>Single study results</i>		
Adequate health care at 36 months for children	Both group had adequate care (1 RCT, N=65)	

<sup>48</sup> green shading indicates results significantly in favour of the intervention

<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Mother-infant feeding interaction ratings (Cowan and Cowan 1992) at 6 and 18 months postpartum	No group differences (1 RCT, N=127)
Maternal sensitivity: HOME Scales (emotional and verbal responsivity; opportunity for variety in daily stimulation)	Intervention group scored higher on 2/6 subscales (1 RCT, N=60)
Feeding and Play Interactions (Field 1980) at 3 months postpartum	Intervention group had higher ratings than control group (1 study with non-random assignment, N=126)
Maternal sensitivity: NCATS at 8 weeks post-enrolment	Children more expressive with cues and more responsive to mothers (1 study with non-random assignment, N=57 in intervention group)
	Mothers showed no improvement in sensitivity to child cues (1 study with non-random assignment, N=57 in intervention group)
Maternal sensitivity: HOME	No improvement in maternal avoidance of punishment or opportunities for stimulation (1 study with non-random assignment, N=57 in intervention group)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Parental adjustment: CAPI at 18 month postpartum	Intervention group elevated scores on 2/6 subscales; control group elevated on 6/6 subscales (1 RCT, N=60)
Parental adjustment: PSI at 3 months postpartum	Both groups report elevated stress (1 RCT, N=60)
Maternal stress (salivary cortisol) at 6 months postpartum	Intervention group had lower levels than control group (1 study with non-random assignment, N=126)
Parental adjustment: BDI at 12 months postpartum	Intervention group scored lower than control group (1 study with non-random assignment, N=126)
Parental adjustment: PSI at 8 weeks post-enrolment	Intervention mothers reported lower levels of distress (1 study with non-random assignment, N=57 in intervention group)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Maternal drug use at 18 months postpartum	No group differences (1 RCT, N=60)
Maternal drug use at 6 and 18 months postpartum	No group differences (1 RCT, N=127)
Maternal drug use	Lower rates in intervention group (1 study with non-random assignment, N=126)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BDI: Beck Depression Inventory; BSID: Bayley Scales of Infant Development; CAPI: Child Abuse Potential Inventory; ESCS: Early Social Communication Scale; HOME: Home Observation Measurement of the Environment; N: number; NR: not reported; NCATS: Nursing Child Assessment Teaching Scale; PSI: Parenting Stress Index; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; USA: United States of America

**Table 70: Evidence table for Turnbull 2012<sup>49</sup>**

<b>Review ID</b>	Turnbull 2012
<b>Search date</b>	1966 to November 2011
<b>Review method</b>	Meta-analysis
<b>Ongoing studies</b>	None
<b>No. studies of relevance to this Overview and their design(s)</b>	7 studies (6 RCTs, 1 qRCT)
<b>No. participants in relevant studies</b>	950 mother-infant pairs enrolled; outcomes for 803 mother-infant pairs reported
<b>Location/setting</b>	Australia: 1 trial; unclear: 4 trials; USA: 2 trials
<b>Quality of review</b>	ROBIS: low risk of bias AMSTAR: 10/11 ('high' quality)
<b>Quality of relevant studies</b>	Review authors' summary: substantial methodological limitations with the studies incorporated in the review; 2 trials had adequate allocation concealment and randomisation procedures, and had < 10% losses post-randomisation; the others had substantial methodological limitations (particularly large losses); no study was able to blind personnel/participants
<b>Review objective</b>	To assess the effects of home visits commencing during pregnancy and after birth for women with an alcohol or other drug problem
<b>Review eligibility criteria</b>	<u>Designs</u> : studies that compared home visits to no home visits or a different type of home visiting intervention; using random or quasi methods of participant allocation, where the unit of allocation was the individual or a group (cluster); <u>participants</u> : pregnant or postpartum women with an alcohol or drug problem (or trials that enrolled high-risk women which reported > 50% of women used drugs or alcohol); <u>interventions</u> : home visits that commenced during pregnancy and/or after birth by teams or individuals consisting of doctors, nurses, social workers, counsellors or trained lay people; <u>outcomes</u> : drug and alcohol related; pregnancy and puerperium; infant/child; or psychosocial outcomes
<b>Participant population</b>	All studies enrolled pregnant (3 trials) or postpartum (4 trials) women. The enrolled women were generally at high psychosocial risk and had a high rate of alcohol and drug use (> 50%). 4 trials enrolled women of largely African-American origin
<b>Intervention</b>	All trials were predominately postpartum home visits (1 trial provided 2 antenatal home visits for 2 weeks before delivery; 6 commenced in postpartum period only); 4 trials continued visits beyond 6 months; 4 scheduled visits at least weekly for some of the home visiting period. Visitors included community health nurses, paediatric nurses, trained counsellors, paraprofessional advocates, midwives, and lay African American women
<b>Comparator</b>	No home visits (5 trials), 1 telephone contact and 1 home visit (1 trial), short monthly home visit (1 trial)
<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Cognitive development (BSID – MDI) at latest time measured (18-36 months)	MD (F): 2.89 (95% CI -1.17, 6.95); I <sup>2</sup> 11%; P=0.29 (2 RCTs, 1 qRCT, N=199)
Psychomotor delay (BSID – PDI) at latest time measured (18-36 months)	MD (F): 3.14 (95% CI -0.03, 6.32); I <sup>2</sup> 0%; P=0.053 (2 RCTs, 1 qRCT, N=199)
<b>Single study results</b>	
Significant cognitive delay (BSID – MDI ≥ 2 SD below population mean)	RR (F): 1.36 (95% CI 0.41, 4.45) (1 qRCT, N=48)
Significant psychomotor delay (BSID – PDI ≥ 2 SD below population mean)	RR (F): 3.26 (95% CI 1.00, 10.59) (1 qRCT, N=48)

<sup>49</sup> green shading indicates results significantly in favour of the intervention

<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
Clinically significant perceived emotional or behavioural problems (CBCL total score of 60 or greater) (2-3 years)	RR (F): 0.46 (95% CI 0.21, 1.01) (1 RCT, N=100)
CBCL total score at 2-3 years	MD (F): -3.10 (95% CI -7.26, 1.06) (1 RCT, N=100)
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Incomplete vaccination schedule (at 6 months)	RR (F): 1.09 (95% CI 0.91, 1.32); I <sup>2</sup> 0%; P=0.36 (2 RCTs, N=260)
Infant death (up to 6 months)	RR (F): 0.70 (95% CI 0.12, 4.16); I <sup>2</sup> 0%; P=0.70 (2 RCTs, N=228)
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
HOME score	MD (F): 3.70 (95% CI -0.06, 7.46) (1 RCT, N=43)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b>	
EPDS ≥ 12 at 6 months	RR (F): 1.22 (95% CI 0.63, 2.38) (1 RCT, N=136)
Child domain of PSI at 18 months (z score)	MD (F): -0.50 (95% CI -0.78, -0.22) (1 RCT, N=43)
CAPI (z score)	MD (F): -0.90 (95% CI -1.61, -0.19) (1 RCT, N=43)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Continued illicit drug use (6-36 months)	RR (F): 1.05 (95% CI 0.89, 1.24); I <sup>2</sup> 64%; P=0.58 (3 RCTs, N=384)
Continued alcohol use (6-36 months)	RR (F): 1.18 (95% CI 0.96, 1.46); I <sup>2</sup> 0%; P=0.12 (3 RCTs, N=384)
Failure to enrol in drug treatment program (time of outcome measure NR)	RR (R): 0.45 (95% CI 0.10, 1.94); I <sup>2</sup> 92%; P=0.28 (2 RCTs, N=211)
Failure to remain in drug treatment program at latest time measured (3-18 months)	RR (F): 0.92 (95% CI 0.69, 1.23); I <sup>2</sup> 62%; P=0.58 (3 RCTs, N=315)
Not breastfeeding (at 6 months)	RR (F): 0.95 (95% CI 0.83, 1.10); I <sup>2</sup> 0%; P=0.51 (2 RCTs, N=260)
<b>Single study results</b>	
Failure to remain in drug treatment at 4 weeks	RR (F): 0.54 (95% CI 0.35, 0.84) (1 RCT, N=103)
Failure of retention in program at 90 days	RR (F): 0.93 (95% CI 0.69, 1.25) (1 RCT, N=103)
Failure to keep scheduled appointments (infant primary care clinic)	RR (F): 0.84 (95% CI 0.42, 1.66) (1 RCT, N=43)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Pooled results</b>	
Infant not in care of biological mother (12-36 months)	RR (F): 0.83 (95% CI 0.50, 1.39); I <sup>2</sup> 63%; P=0.48 (2 RCTs, N=253)
<b>Single study results</b>	
Involvement with child protective services	RR (F): 0.38 (95% CI 0.20, 0.74) (1 RCT, N=171)
Non-accidental injury and non-voluntary foster care	RR (F): 0.16 (95% CI 0.02, 1.23) (1 RCT, N=136)
Child abuse or neglect: non-accidental injury	RR (F): 0.36 (95% CI 0.02, 8.77) (1 RCT, N=136)

**Abbreviations:** AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID: Bayley Scales of Infant Development; CAPI: Child Abuse Potential Inventory; CBCL: Child Behaviour Checklist; CI: confidence interval; EPDS: Edinburgh Postnatal Depression Score; (F): fixed effect; HOME: Home Observation Measurement of the Environment; MD: mean difference; MDI: Mental Development Index; N: number; NR: not reported; PDI: Psychomotor Development Index;

PSI: Parenting Stress Index; qRCT: quasi-randomised controlled trial; (R): random effects; RCT: randomised controlled trial  
ROBIS: Risk of Bias in Systematic Reviews; RR: risk ratio; SD: standard deviation; USA: United States of America

## Interventions for fathers

**Table 71: Matrix indicating the studies that were included in the systematic reviews**

		Systematic review
		Magill-Evans 2006
Study ID	Beal 1989	✓ (cohort, N=44)
	Belsky 1985	✓ (RCT, N=67)
	Cullen 2000	✓ (RCT, N=22)
	Culp 1989	✓ (cohort, N=14)
	Feldman 2002	✓ (cohort, N=146)
	Pfannenstiel 1991, 1995	✓ (RCT, N=67)
	Scholz 1992	✓ (RCT, N=32)
	Westreich 1991	✓ (cohort, N=114)

Abbreviations: N: number; RCT: randomised controlled trial

**Table 72: Evidence table for Magill-Evans 2006<sup>50</sup>**

<b>Review ID</b>	Magill-Evans 2006
<b>Search date</b>	1983 to 2003
<b>Review method</b>	Narrative synthesis ( <i>"There were an inadequate number of studies to conduct a meta-analysis of findings due to the diversity of interventions"</i> )
<b>Ongoing studies</b>	NR
<b>No. studies of relevance to this Overview and their design(s)</b>	14 interventions in 12 studies included; 8 relevant studies (4 RCTs; 4 cohort studies with control)
<b>No. participants in relevant studies</b>	506
<b>Location/setting</b>	Unclear for individual studies (Australia: 1 intervention; Canada: 1 intervention; Israel: 1 intervention; USA: 11/14 interventions)
<b>Quality of review</b>	ROBIS: high risk of bias AMSTAR: 5/11 ('moderate' quality)
<b>Quality of relevant studies</b>	3 'weak' studies; 4 'moderate' studies; 1 'strong' study
<b>Review objective</b>	To identify, categorise and evaluation interventions for fathers with infants or toddlers, considering: the content, timing and method of delivery of the interventions, and the influence of the interventions of fathers and their children
<b>Review eligibility criteria</b>	<u>Designs</u> : studies had to include a control group or use a pre-test and post-test design; <u>participants</u> : fathers of young children 5 years or younger; <u>interventions</u> : interventions with fathers of young children; <u>outcomes</u> : studies had to measure an aspect of father-child interaction, and analyse father outcomes separately from mother outcomes; <u>other</u> : studies had to have a sample greater than 1, and be published in English between 1983 and 2003; (conference abstracts, unpublished reports and dissertations were excluded)
<b>Participant population</b>	Fathers of newborns or infants. Sample predominately middle class families recruited from community or health service; 1 study targeted low income families. Mothers were included as a separate group or jointly with the father in 6 studies. Most studies included healthy infants; 2 included premature infants
<b>Intervention</b>	Interventions for fathers of newborns/infants: promoting awareness of or sensitivity to infant behaviour in prenatal period or infancy (4 studies); teaching specific skills, infant massage (2 studies), kangaroo care (1 study); addressing the social and physical environment for labour and birth (1 study). Intervention durations ranged from 1 encounter (3 studies), to daily for 1 month (1 study)
<b>Comparator</b>	Varied – usual care/no intervention/brief intervention (i.e. information only)

<sup>50</sup> green shading indicates results significantly in favour of the intervention



<b>Outcome domain</b>	
<b>Infant social and emotional wellbeing or development up to 1 year of age</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results (interventions teaching specific skills: kangaroo care)</i>	
Infant temperament (Bates ICQ) 3 months post-intervention	NS difference in infant fussy-difficult temperament (1 cohort, N=146)
<b>Development for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results (interventions teaching specific skills: infant massage)</i>	
Child sleep latency time (nightly diary) post-intervention	NS difference (1 RCT, N=22)
<i>Single study results (interventions teaching specific skills: kangaroo care)</i>	
Infant development (BSID MDI) 6 months post-intervention	Cognitive development higher in intervention infants (SS) (1 cohort, N=133)
Infant development (BSID PDI) 6 months post-intervention	Positive impact on motor development of infants at high medical risk (SS) (1 cohort, N=133) (not for those at low risk)
<b>Behaviour for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Physical wellbeing and safety for the infant, as a child, and up to 18 years</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Parent-infant relationship</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<i>Single study results (interventions to promote awareness of or sensitivity to infant behaviour (e.g. NBAS-based interventions))</i>	
Mother-child interaction (observation) 1, 3, 9 months	NS difference (1 RCT, N=60)
Mother-father-child interaction (observation) 1, 3, 9 months	NS difference (1 RCT, N=60)
Father-infant interaction during a feeding (AFIS) in hospital and 1 month later	Immediately after class, fathers in intervention group and infants interacted more sensitively than control dyads (SS) (1 RCT, N=67) NS difference at 1 month (1 RCT, N=67)
Involvement in caretaking (questionnaire: unnamed) 8 weeks post-intervention	NS difference (1 cohort, N=44)
Interaction with child (observation) 8 weeks post-intervention	More mutuality and eye contact between infant and intervention fathers (SS) (1 cohort, N=44)
<i>Single study results (interventions teaching specific skills: infant massage)</i>	
Infant greeting response (observation) 8 weeks post-intervention	Infants of intervention fathers showed more positive behaviours to their fathers (SS) (1 RCT, N=32)
Time in activities (diary) 8 weeks post-intervention	Intervention fathers gave infants more baths and massages (SS) (1 RCT, N=32)
Family dynamics (observation) 8 weeks post-intervention	Infants of intervention fathers made more positive overtures to their fathers, showed more positive moods; their fathers had more involvement with the infant (SS) (1 RCT, N=32)
Father involvement in caregiving (CCS) post-intervention	Fathers in massage group did not decrease involvement in care; control fathers became less involved in play/caregiving (SS) (1 RCT, N=22)
Father-child play interaction (MBRS-R) post-intervention	Fathers in massage group increased in expressiveness, enjoyment, warmth, acceptance (not responsivity); control fathers decreased in expressiveness, warmth, responsivity (SS) (1 RCT, N=22)
<i>Single study results (interventions teaching specific skills: kangaroo care)</i>	
Mother-infant interaction (CBI) 6 months-post intervention	Maternal sensitivity higher among intervention mothers (SS) (1 cohort, N=133)
Home environment (HOME) at 3 months post-intervention	Intervention mothers and fathers had better scores on emotional and verbal responsiveness and were more adept at organising the child's environment (SS) (1 cohort, N=146)

<b>Single study results</b> (interventions addressing the social and physical environment for labour and birth: birthing room with restrictions on staff and parental behaviour)	
Father involvement in feeding (observation) at 3 months	NS difference (1 cohort, N=114 couples)
Father involvement in play (observation) at 12 months	NS difference (1 cohort, N=114 couples)
Father participation in child care, mutual support and parental competence (questionnaire unnamed) at 3 and 12 months	No group comparisons reported (1 cohort, N=114 couples)
<b>Parent/caregiver psychosocial wellbeing</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b> (interventions to promote awareness of or sensitivity to infant behaviour (e.g. NBAS-based interventions))	
Anxiety (STAI) 2 weeks post-intervention	Intervention fathers less anxious; NS for mothers (SS) (1 cohort, N=14 couples)
<b>Parent/caregiver knowledge, practices and behaviours</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
<b>Single study results</b> (interventions to promote awareness of or sensitivity to infant behaviour (e.g. NBAS-based interventions))	
Knowledge of infant capabilities (KIS) 12-20 weeks post-intervention	Intervention fathers gave more correct responses to questions on infant capabilities (SS) (1 RCT, N=67)
Attitude to parenting (PAS) 8 weeks post-intervention	NS difference (1 cohort, N=44)
Perception of infant (Bates ICQ) 8 weeks post-intervention	Fathers in control group reported child more unpredictable (SS) (1 cohort, N=44)
Perception of infant (NPI) 2 weeks post-intervention	Parents in intervention group had more realistic perceptions (SS) (1 cohort, N=14 couples)
Knowledge of infant behaviour (response to noise and light) (questionnaire unnamed) 2 weeks post-intervention	NS difference (1 cohort, N=14 couples)
<b>Parent/caregiver views of intervention</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Family relationships</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR
<b>Systems outcomes</b>	
<b>Outcome measure used in the review</b>	<b>Results reported in the review</b>
NR	NR

**Abbreviations:** AFIS: Assessment of Father Infant Sensitivity; AMSTAR: Assessing the Methodological Quality of Systematic Reviews; BSID: Bayley Scales of Infant Development; CBI: Coding Interactive Behaviour; CCS: Child Care Scale; HOME: HOME Observation for Measurement of the Environment Inventory; KIS: Knowledge of Infant Scale; ICQ: Infant Characteristics Questionnaire; MBRS-R: Maternal Behaviour Rating Scale-revised; MDI: Mental Development Index; N: number; NBAS: Neonatal Behavioural Assessment Scale; NPI: Neonatal Perception Inventory; NR: not reported; NS: non-significant; PAS: Parenting Attitudes Scale; PDI: Psychomotor Development Index; RCT: randomised controlled trial; ROBIS: Risk of Bias in Systematic Reviews; SS: statistically significant; STAI: State-Trait Anxiety Inventory; USA: United States of America

## Relevant but excluded reviews

No.	Relevant review reference	Reason not included
1	Abdulwadud OA, Snow ME. Interventions in the workplace to support breastfeeding for women in employment. <i>Cochrane Database Syst Rev</i> 2012; <b>10</b> : CD006177.	No included studies
2	Akinbami L, Cheng T, Kornfeld D. A review of teen-tot programs: comprehensive clinical care for young parents and their children. <i>Adolescence</i> 2001; <b>36</b> (142): 381-93.	Of 4 included studies, only 1 reported on 'infant development'; none report on infant social/emotional wellbeing/development
3	Allin H, Wathen C, MacMillan H. Treatment of child neglect: a systematic review. <i>Can J Psychiatry</i> 2005; <b>50</b> (8): 497-504.	Unclear ages of children in included studies
4	Arborelius E, Hallberg AC, Hakansson A. How to prevent exposure to tobacco smoke among small children: a literature review. <i>Acta Paediatrica</i> 2000; <b>89</b> (S434): 65-70.	Does not report on infant social/emotional wellbeing/development; focused on tobacco exposure
5	Arkan B, Ustun B, Guvenir T. An analysis of two evidence-based parent training programmes and determination of the characteristics for a new programme model. <i>J Psychiatr Ment Health Nurs</i> 2013; <b>20</b> (2): 176-85.	No included studies in infants <12 months of age on average at study/intervention onset
6	Austin MP, Priest SR, Sullivan EA. Antenatal psychosocial assessment for reducing perinatal mental health morbidity. <i>Cochrane Database Syst Rev</i> 2008; <b>4</b> : CD005124.	Does not report on infant social/emotional wellbeing/development; focused on parental mental health outcomes (additional relevant outcomes are pre-specified, e.g. maternal-infant relationships variables, but no outcome data from included trials)
7	Bakermans-Kranenburg MJ, van IJzendoorn MH, Bradley RH. Those who have, receive: the Matthew effect in early childhood intervention in the home environment. <i>Rev Educ Res</i> 2005; <b>75</b> (1): 1-26.	Substantial overlap with Bakermans-Kranenburg 2003 review; relevant studies included in other included reviews in this overview (more comprehensively covered)
8	Barlow J, Coren E, Stewart-Brown S. Meta-analysis of the effectiveness of parenting programmes in improving maternal psychosocial health. <i>Br J Gen Pract</i> 2002; <b>52</b> (476): 223-33.	Does not report on infant social/emotional wellbeing/development; focused on maternal psychosocial health (no infant outcomes)
9	Barlow J, Johnston I, Kendrick D, Polnay L, Stewart-Brown S. Individual and group-based parenting programmes for the treatment of physical child abuse and neglect. <i>Cochrane Database Syst Rev</i> 2006; <b>3</b> : CD005463.	Unclear ages of children in included studies
10	Barlow J, McMillan A, Kirkpatrick S, Ghate D, Barnes J, Smith M. Health-led interventions in the early years to enhance infant and maternal mental health: a review of reviews. <i>Child Adolesc Ment Health</i> 2010; <b>15</b> (4): 178-85.	Overview of reviews

11	Barlow J, Schrader McMillan A, Kirkpatrick S, Ghate D, Smith M, Barnes J. Health-led Parenting Interventions in Pregnancy and Early Years: Department for Children, Schools and Families; 2008.	Overview of reviews
12	Barlow J, Simkiss D, Stewart Brown S. Interventions to prevent or ameliorate child physical abuse and neglect: findings from a systematic review of reviews. <i>J Child Serv</i> 2006; <b>1</b> : 6-28.	Overview of reviews
13	Barlow J, Smailagic N, Ferriter M, Bennett C, Jones H. Group-based parent-training programmes for improving emotional and behavioural adjustment in children from birth to three years old. <i>Cochrane Database Syst Rev</i> 2010; <b>3</b> : CD003680.	No included studies in infants <12 months of age on average at study/intervention onset
14	Barlow J, Smailagic N, Huband N, Roloff V, Bennett C. Group-based parent training programmes for improving parental psychosocial health. <i>Cochrane Database Syst Rev</i> 2014; <b>5</b> : CD002020.	Does not report on infant social/emotional wellbeing/development; focused on parental outcomes only
15	Barrett H, Chang YS, Walker J. Improving children's outcomes by supporting parental and carer-couple relationships and reducing conflict within families, including domestic violence. London: Centre for Excellence and Outcomes on Children and Young People's Services; 2010.	Unclear ages of children in included studies (characteristics of included studies not presented); narrative summaries of results only
16	Baxi R, Sharma M, Roseby R, Polnay A, Priest N, Waters E, et al. Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke. <i>Cochrane Database Syst Rev</i> 2014; <b>3</b> : CD001746.	Does not report on infant social/emotional wellbeing/development; focused on smoking related health outcomes for the child
17	Baxter S, Blank L, Everson-Hock ES, Burrows J, Messina J, Guillaume L, et al. The effectiveness of interventions to establish smoke-free homes in pregnancy and in the neonatal period: a systematic review. <i>Health Educ Res</i> 2011; <b>26</b> (2): 265-82.	Does not report on infant social/emotional wellbeing/development; focused on smoking related health outcomes for the child
18	Bayer J, Hiscock H, Scalzo K, Mathers M, McDonald M, Morris A, et al. Systematic review of preventive interventions for children's mental health: what would work in Australian contexts? <i>Aust N Z J Psychiatry</i> 2009; <b>43</b> (8): 695-710.	This review reports outcome data for 2 studies in infants <12 months of age (Olds 1995, 1998, 1999 and Fergusson 2005, 2006) ('effective programs' applicable for Australia) (though additional studies in infants <12 months of age are mentioned in the review ('effective' (high risk of bias) and 'ineffective' programs) no outcome data are reported for those studies); these studies covered in other reviews in this overview

19	Beake S, Pellowe C, Dykes F, Schmied V, Bick D. A systematic review of structured versus non-structured breastfeeding programmes to support the initiation and duration of exclusive breastfeeding in acute and primary healthcare settings. <i>The JBI Database of Systematic Reviews and Implementation Reports</i> 2011; <b>9</b> (36): 38.	Does not report infant on social/emotional wellbeing/development; focused on breastfeeding and other infant morbidities
20	Beelmann A, Raabe T. The effects of preventing antisocial behavior and crime in childhood and adolescence: results and implications of research reviews and meta-analyses. <i>Int J Dev Sci</i> 2009; <b>3</b> (3): 260-81.	Overview of reviews
21	Bennett C, Barlow J, Huband N, Smailagic N, Roloff V. Group-based parenting programs for improving parenting and psychosocial functioning: a systematic review. <i>J Soc Social Work Res</i> 2013; <b>4</b> (4): 300-32.	Does not report on infant social/emotional wellbeing/development; focused on parental outcomes
22	Benzies K, Magill-Evans J, Hayden K, Ballantyne M. Key components of early intervention programs for preterm infants and their parents: a systematic review and meta-analysis. <i>BMC Pregnancy Childbirth</i> 2013; <b>13</b> (Suppl 1): S10.	Included studies and content overlaps with the other preterm reviews included in this overview; this review focuses on maternal outcomes
23	Bilukha O, Hahn RA, Crosby A, Fullilove MT, Liberman A, Moscicki E, et al. The effectiveness of early childhood home visitation in preventing violence: a systematic review. <i>Am J Prev Med</i> 2005; <b>28</b> (2 Suppl 1): 11-39.	This review does not systematically report outcomes relating to infant social/emotional wellbeing/development; "As noted, the Community Guide review of home visitation did not systematically assess the effects of this intervention on other outcomes (e.g., on mother-infant attachment, physical and cognitive development, school achievement, substance abuse, or other behavior problems). However, we mention some of the benefits noted in the studies that we have reviewed"
24	Blauw-Hospers C, Hadders-Algra M. A systematic review of the effects of early intervention on motor development. <i>Dev Med Child Neurol</i> 2005; <b>47</b> (06): 421-32.	Does not report on social/emotional wellbeing/development; focused on motor development (and overlaps particularly with preterm reviews already included in overview)
25	Blok H, Fukkink R, Gebhardt E, Leseman P. The relevance of delivery mode and other programme characteristics for the effectiveness of early childhood intervention. <i>Int J Behav Dev</i> 2005; <b>29</b> (1): 35-47.	Though 8/34 comparisons reported in the review are in infants <12 months of age in this review, the results are pooled across all studies
26	Blondel B, Breart G. Home visits during pregnancy: consequences on pregnancy outcome, use of health services, and women's situations. <i>Semin Perinatol</i> 1995; <b>19</b> (4): 263-71.	Does not report on infant social/emotional wellbeing/development; reports on pregnancy outcomes (e.g. preterm birth), and maternal mental health outcomes (e.g. depression)

27	Bond C, Woods K, Humphrey N, Symes W, Green L. Practitioner Review: The effectiveness of solution focused brief therapy with children and families: a systematic and critical evaluation of the literature from 1990-2010. <i>J Child Psychol Psychiatry</i> 2013; <b>54</b> (7): 707-23.	No included studies in infants <12 months of age on average at study/intervention onset
28	Bowes J, Grace R. Review of early childhood parenting, education and health intervention programs for Indigenous children and families in Australia. Canberra, Australia: Australian Institute of Health and Welfare; Australian Institute of Family Studies; 2014.	Though there appear to be included studies in infants <12 months of age, these studies do not have study designs eligible for inclusion (e.g. with no control group; case studies; focus group interviews), and/or did not report on infant social/emotional wellbeing/development
29	Bratton S, Ray D, Rhine T, Jones L. The efficacy of play therapy with children: a meta-analytic review of treatment outcomes. <i>Prof Psychol Res Pr</i> 2005; <b>36</b> (4): 376-90.	Unclear ages of children in included studies; across the 93 studies, "The average age of a child receiving play therapy was 7.0 years"
30	Brecht C, Shaw R, Horwitz S, John N. Effectiveness of therapeutic behavioral interventions for parents of low birth weight premature infants: A review. <i>Infant Ment Health J</i> 2012; <b>33</b> (6): 651-65.	Relevant included studies and content overlaps with the other preterm reviews included in this overview
31	Breitenstein S, Gross D, Christophersen R. Digital delivery methods of parenting training interventions: a systematic review. <i>Worldviews Evid Based Nurs</i> 2014; <b>11</b> (3): 168-76.	Unclear ages of children in included studies
32	Bröning S, Kumpfer K, Kruse K, Sack PM, Schaunig-Busch I, Ruths S, et al. Selective prevention programs for children from substance-affected families: a comprehensive systematic review. <i>Subst Abuse Treat Prev Policy</i> 2012; <b>7</b> : 23.	No included studies in infants <12 months of age on average at study/intervention onset
33	Brown F, Whittingham K, Boyd R, Sofronoff K. A systematic review of parenting interventions for traumatic brain injury: child and parent outcomes. <i>Journal of Head Trauma and Rehabilitation</i> 2013; <b>28</b> (5): 349-60.	No included studies in infants <12 months of age on average at study/intervention onset
34	Brownlee K, Rawana J, Franks J, Harper J, Bajwa J, O'Brien E, et al. A systematic review of strengths and resilience outcome literature relevant to children and adolescents. <i>Child Adolesc Soc Work J</i> 2013; <b>30</b> (5): 435-59.	No included studies in infants <12 months of age on average at study/intervention onset
35	Bruce B, McGrath P. Group interventions for the prevention of injuries in young children: a systematic review. <i>Inj Prev</i> 2005; <b>11</b> (3): 143-7.	Does not report on infant social/emotional wellbeing/development; focused on injury prevention
36	Bryant D, Herndon Vizzard L, Willoughby M, Kupersmidt J. A review of interventions for preschoolers with aggressive and disruptive behavior. <i>Early Educ Dev</i> 1999; <b>10</b> (1): 47-68.	No included studies in infants <12 months of age on average at study/intervention onset
37	Bull J, McCormick G, Swann C, Mulvihill C. Ante- and post-natal home-visiting programmes: a review of reviews evidence briefing. London: Health Development Agency; 2004.	Overview of reviews

38	Carfoot S, Williamson P, Dickson R. A systematic review of randomised controlled trials evaluating the effect of mother/baby skin-to-skin care on successful breast feeding. <i>Midwifery</i> 2003; <b>19</b> (2): 148-55.	This review was prior to the included Cochrane review (Moore 2012)
39	Casady A, Van Egeren L. A meta-analysis of home visitor programs: moderators of improvements in maternal behavior. Head Start Conference 2002. Michigan State University, USA; 2002.	Does not report on infant social/emotional wellbeing/development; focused on 'maternal behaviour,' reporting pooled effect sizes only (i.e. not possible to determine results for studies in infants < than 12 months of age only)
40	Case-Smith J. Systematic review of interventions to promote social-emotional development in young children with or at risk for disability. <i>Am J Occup Ther</i> 2013; <b>67</b> (4): 395-404.	Only 2 of the 23 included studies (Olafsen 2006; Tessier 2003) were in infants <12 months of age; both are included in other reviews in this overview (e.g. Maulik 2009; Wallace 2010)
41	Centre PR. Evidence review: An analysis of the evidence for parenting interventions in Australia Melbourne: Parenting Research Centre; 2012.	Overview of reviews, and rapid evidence assessment
42	Charles JM, Bywater T, Edwards RT. Parenting interventions: a systematic review of the economic evidence. <i>Child Care Health Dev</i> 2011; <b>37</b> (4): 462-74.	Does not report on infant social/emotional wellbeing/development; focused on economic outcomes
43	Chung M, Raman G, Trikalinos T, Lau J, Ip S. Interventions in primary care to promote breastfeeding: an evidence review for the U.S Preventive Services Task Force. <i>Ann Intern Med</i> 2008; <b>149</b> (8): 565-82.	Does not report on infant social/emotional wellbeing/development; focused on breastfeeding outcomes
44	Ciliska D, Hayward S, Thomas H, Mitchell A, Dobbins M, Underwood J, et al. A systematic overview of the effectiveness of home visiting as a delivery strategy for public health nursing interventions. <i>Can J Public Health</i> 1996; <b>87</b> (3): 193-8.	Of the 108 articles deemed potentially relevant by authors, 77 were classed as relevant; of these, 9 were judged to be strong, 5 moderate and 63 weak: characteristics are only presented for strong and moderate studies (i.e. 14 of 77); of those 11 (Field 1980; Holden 1989; Gross 1993; Brooten 1986; Hardy 1989; Barth 1988; Olds 1986, 86, 88, 93; Seitz 1985) were relevant, but already included in across other reviews in this overview (e.g. Elkan 2000; Peacock 2013; Pinquart 2010; Bakermans-Kranenburg 2003; Bee 2014; Segal 2012; Yoshikawa 1995)
45	Clark J. Parent-focused interventions: a meta-analytic consideration of risk and outcome categories. Annual Meeting of the American Psychological Association; San Francisco, California: American Psychologist; 2001.	Unclear ages of children in included studies/meta-analysis

46	Coker T, Windon A, Moreno C, Schuster M, Chung P. Well-child care clinical practice redesign for young children: a systematic review of strategies and tools. <i>Pediatrics</i> 2013; <b>131</b> (Suppl 1): S5-25.	The included studies in this review in infants <12 months of age on average either do not report outcomes relating to infant social/emotional wellbeing/development, or are already included in other reviews in this overview (e.g. Regalado 2001; Piotrowski 2009)
47	Cooley M, Veldorale-Griffin A, Petren R, Mullis A. Parent-child interaction therapy: a meta-analysis of child behavior outcomes and parent stress. <i>J Fam Soc Work</i> 2014; <b>17</b> (3): 191-208.	No included studies in infants <12 months of age on average at study/intervention onset
48	Corcoran J, Pillai V. A meta-analysis of parent-involved treatment for child sexual abuse. <i>Res Soc Work Pract</i> 2008; <b>18</b> (5).	No included studies in infants <12 months of age on average at study/intervention onset
49	Coren E, Hutchfield J, Thomae M, Gustafsson C. Parent training support for intellectually disabled parents. <i>Cochrane Database Syst Rev</i> 2010; <b>6</b> : CD007987.	For the one included study in infants <12 months of age on average, this review reports only on 'home precautions'
50	Darbyshire L, Stenfert Kroese B. Psychological well-being and social support for parents with intellectual disabilities: risk factors and interventions. <i>J Policy Pract Intellect Disabil</i> 2012; <b>9</b> (1): 40-52.	Only 2 of the 8 included studies were intervention studies (the other 6 were cross-sectional); unclear ages of children in included studies; does not report on infant social/emotional wellbeing/development
51	Day P. Providing the best for our parents: a systematic review. <i>Br J Sch Nurs</i> 2008; <b>3</b> (3): 125-32.	There are 14 included articles in this review, including 5 controlled trials (3 in infants <12 months of age); the review is focused predominately on the qualitative content of studies, which is reported narratively in themes
52	de Arellano MA, Lyman DR, Jobe-Shields L, George P, Dougherty RH, Daniels AS, et al. Trauma-focused cognitive-behavioral therapy for children and adolescents: assessing the evidence. <i>Psychiatr Serv</i> 2014; <b>65</b> (5): 591-602.	No included studies in infants <12 months of age on average at study/intervention onset
53	De Graaf I, Speetjens P, Smit F, De Wolff M, Tavecchio L. Effectiveness of the Triple P Positive Parenting Program on Parenting: A Meta-Analysis. <i>Fam Relat</i> 2008; <b>57</b> (5): 553-66.	No included studies in infants <12 months of age on average at study/intervention onset
54	Dekovic M, Slagt M, Asscher J, Boendermaker L, Eichelsheim V, Prinzie P. Effects of early prevention programs on adult criminal offending: a meta-analysis. <i>Clin Psychol Rev</i> 2011; <b>31</b> (4): 532-44.	Of the 9 included studies 3 were in infants <12 months of age (Eckenrode 2010; McCormick 2006; Campbell 2002); this review reports on 'later criminal offending' only; the relevant studies are included in other reviews in this overview (e.g. Pinquart 2010)



55	Dennis C, Ross L, Grigoriadis S. Psychosocial and psychological interventions for treating antenatal depression. <i>Cochrane Database Syst Rev</i> 2007; <b>3</b> : CD006309.	Does not report on infant social/emotional wellbeing/development; focused on antenatal depression
56	Dennis C. Psychosocial and psychological interventions for prevention of postnatal depression: systematic review. <i>BMJ</i> 2005; <b>331</b> (7507):15.	Does not report on infant social/emotional wellbeing/development; focused on postnatal depression
57	Dennis C. Treatment of postpartum depression, part 2: a critical review of nonbiological interventions. <i>J Clin Psychiatr</i> 2004; <b>65</b> (9): 1252-65.	Does not report on infant social/emotional wellbeing/development; focused on maternal depression
58	Dimond C, Hyde C. Parent education programmes for children's behaviour problems: medium to long term effectiveness. Birmingham; 1999.	Participants in this review were "Children 0-16 years with behavioural, anti-social or conduct disorders"; while 2 of the 19 included studies (Britner 1997; Van den boom 1995) were in infants <12 months of age, these studies included in other reviews in this overview (e.g. Coren 2003; Pinquart 2010)
59	Dixon D, Kurtz P, Chin M. A systematic review of challenging behaviors in children exposed prenatally to substances of abuse. <i>Res Dev Disabil</i> 2008; <b>29</b> (6): 483-502.	Unclear ages of children in included studies; only 3/37 included studies assessed interventions
60	Dretzke J, Davenport C, Frew E, Barlow J, Stewart-Brown S, Bayliss S, et al. The clinical effectiveness of different parenting programmes for children with conduct problems: a systematic review of randomised controlled trials. <i>Child Adolesc Psychiatry Ment Health</i> 2009; <b>3</b> (1):7.	Unclear ages of children in included studies
61	Dretzke J, Frew E, Davenport C, Barlow J, Stewart-Brown S, Sandercock J, et al. The effectiveness and cost-effectiveness of parent training/education programmes for the treatment of conduct disorder, including oppositional defiant disorder, in children. <i>Health Technol Assess</i> 2005; <b>9</b> (50): iii, ix-x, 1-233.	No included studies in infants <12 months of age on average at study/intervention onset
62	Dufour S, Chamberland C. The effectiveness of selected interventions for previous maltreatment: enhancing the well-being of children who live at home. <i>Child Fam Soc Work</i> 2004; <b>9</b> (1): 39-56.	Unclear ages of children in included studies
63	Durlak J, Wells A. Primary prevention mental health programs for children and adolescents: a meta-analytic review. <i>Am J Community Psychol</i> 1997; <b>25</b> (2): 115-52.	Though this review includes a variety of interventions and majority are not 'parenting' (e.g. 129/177 delivered in school setting); though characteristics of individual studies not reported consistently, majority of included studies do not appear to be in infants <12 months of age: "the mean age of participants was 9.3 years (SD = 7.78)"
64	Dyches T, Smith T, Korth B, Roper S, Mandlco B. Positive parenting of children with developmental disabilities: a meta-analysis. <i>Res Dev Disabil</i> 2012; <b>33</b> (6): 2213-20	No included studies in infants <12 months of age on average at study/intervention onset

65	Dyson L, McCormick F, Renfrew M. Interventions for promoting the initiation of breastfeeding. <i>Cochrane Database Syst Rev</i> 2005; <b>2</b> : CD001688.	Does not report on social/emotional wellbeing/development; reports on breastfeeding only
66	Eccleston C, Palermo T, Fisher E, Law E. Psychological interventions for parents of children and adolescents with chronic illness. <i>Cochrane Database Syst Rev</i> 2012; <b>8</b> : CD009660.	No included studies in infants <12 months of age on average at study/intervention onset
67	Eshel N, Daelmans B, de Mello M, Martines J. Responsive parenting: interventions and outcomes. <i>Bull World Health Organ</i> 2006; <b>84</b> (12): 991-8.	Included studies in infants <12 months of age on average in this review (Achenbach 1990, 1999; Cooper 2002; Gardner 2003; Heinicke 1991; Olds 1986; Super 1990; van den Boom 1994, 1995; Waber 1981; Walker 2004; Wendland-Carro 1999) are included across a range of the included reviews in this overview
68	Fackrell T, Hawkins A, Kay N. How effective are court-affiliated divorcing parent education programs? A meta-analytic study. <i>Fam Court Rev</i> 2011; <b>49</b> (1): 107-19.	Unclear ages of children in included studies
69	Fallon A, Van der Putten D, Dring C, Moylett E, Fealy G, Devane D. Baby-led compared with scheduled (or mixed) breastfeeding for successful breastfeeding. <i>Cochrane Database Syst Rev</i> 2014; <b>7</b> : CD009067.	No included studies
70	Feldman M. Parenting education for parents with intellectual disabilities: A review of outcome studies. <i>Res Dev Disabil</i> 1994; <b>15</b> (4): 299-332.	This review precedes the Cochrane review (classified as 'Relevant'), and does not report on infant social/emotional wellbeing/development for the included studies in infants <12 months of age
71	Filene J, Kaminski J, Valle L, Cachat P. Components associated with home visiting program outcomes: a meta-analysis. <i>Pediatrics</i> 2013; <b>132</b> (Supplement 2): S100-S9.	Unclear ages of children in included studies; individual study characteristics/list of included studies not provided
72	Fink N, Urech C, Cavelti M, Alder J. Relaxation during pregnancy: what are the benefits for mother, fetus, and the newborn? A systematic review of the literature. <i>J Perinat Neonatal Nurs</i> 2012; <b>26</b> (4): 296-306.	Does not report on infant social/emotional wellbeing/development; focused on maternal wellbeing, obstetric and neonatal outcomes
73	Fletcher R, Freeman E, Matthey S. The impact of behavioural parent training on fathers' parenting: a meta-analysis of the Triple P - Positive Parenting Program. <i>Fathering</i> 2011; <b>9</b> (3): 291-312.	Ages of children in included studies within this review are unclear; does not report on infant social/emotional wellbeing/development; focused on parenting outcomes (i.e. Parenting Scale)

74	Fraser C, James E, Anderson K, Lloyd D, Judd F. Intervention programs for children of parents with a mental illness: a critical review. <i>Int J Ment Health Promot</i> 2006; <b>8</b> (1): 9-20.	This review focuses on characteristics of studies rather than effectiveness outcomes; 4 of the 11 included studies identified as methodologically strong/moderate (Gelfand 1996; Horowitz 2001; Murray 2003; Onozawa 2001) were relevant; these studies are included in other reviews in this overview (e.g. Bee 2014; Poobalan 2007)
75	Fraser JG, Lloyd S, Murphy R, Crowson M, Zolotor AJ, Coker-Schwimmer E, et al. A comparative effectiveness review of parenting and trauma-focused interventions for children exposed to maltreatment. <i>J Dev Behav Pediatr</i> 2013; <b>34</b> (5): 353-68.	No included studies in infants <12 months of age on average at study/intervention onset
76	Frolek Clark G, Schlabach T. Systematic review of occupational therapy interventions to improve cognitive development in children ages birth-5 years. <i>Am J Occup Ther</i> 2013; <b>67</b> (4): 425-30.	Does not report on infant social/emotional wellbeing/development; focused on cognitive development; not all studies included in this review are parenting interventions
77	Fukkink R. Video feedback in widescreen: A meta-analysis of family programs. <i>Clin Psychol Rev</i> 2008; <b>28</b> (6): 904-16.	Though there are some included studies in infants <12 months of age, results are pooled across all studies, and it is not clear which studies contribute outcome data to the meta-analyses; "The children in the families had an average age of 2.3 years (SD = 2.7), varying from 0 to 8 years old"
78	Furey A. Are support and parenting programmes of value for teenage parents? Who should provide them and what are the main goals? <i>Public Health</i> 2004; <b>118</b> (4): 262-7.	This review includes a description of the reviews already included/considered for this overview (Coren 2003; Kendrick 2000), as well as individual studies (Field 1982; Johnson 2000; Kitzman 1997; Klerman 2001; Koniak-Griffin 1992; Koniak-Griffin 2003; Olds 1986; Quinlivan 2003; Stevens-Simon 2001) that are already included in more detail in other reviews in this overview
79	Gamble J, Creedy D, Webster J, Moyle W. A review of the literature on debriefing or non-directive counselling to prevent postpartum emotional distress. <i>Midwifery</i> 2002; <b>18</b> (1): 72-9.	Does not report on infant social/emotional wellbeing/development; focused on maternal outcomes
80	Gavita O, Joyce M. A review of the effectiveness of group cognitively enhanced behavioral based parent programs designed for reducing disruptive behavior in children. <i>J Cog Behav Psychother</i> 2008; <b>8</b> (2).	No included studies in infants <12 months of age on average at study/intervention onset

81	Gearing R, Alonzo D, Marinelli C. Maternal schizophrenia: psychosocial treatment for mothers and their children. <i>Clin Schizophr Relat Psychoses</i> 2012; <b>6</b> (1): 27-33B.	Unclear ages of children in included studies; study characteristics (including study designs) are not clearly reported; narrative summaries of results are reported, and do not focus on infant social/emotional wellbeing/development
82	Geeraert L, Van den Noortgate W, Grietens H, Onghena P. The effects of early prevention programs for families with young children at risk for physical child abuse and neglect: a meta-analysis. <i>Child Maltreatment</i> 2004; <b>9</b> (3): 277-91.	Included studies/content overlaps with that of the included home visiting and maltreatment reviews in this overview
83	Gilmore B, McAuliffe E. Effectiveness of community health workers delivering preventive interventions for maternal and child health in low- and middle-income countries: a systematic review. <i>BMC Public Health</i> 2013; <b>13</b> : 847.	Of the 17 included studies, 2 (Cooper 2009; Rahman 2008) were in infants <12 months of age in the "Mother psychosocial well-being interventions" section of this review; these studies are covered in other reviews in this overview (e.g. Knerr 2013; Mejia 2012; Rahman 2013)
84	Gjerdingen D. The effectiveness of various postpartum depression treatments and the impact of antidepressant drugs on nursing infants. <i>J Am Board Fam Pract</i> 2003; <b>16</b> (5): 372-82.	Does not report on infant social/emotional wellbeing/development; reports on maternal depression only
85	Goodman J, Santangelo G. Group treatment for postpartum depression: a systematic review. <i>Arch Womens Ment Health</i> 2011; <b>14</b> (4): 277-93.	Does not report on infant social/emotional wellbeing/development; focused on maternal depression
86	Guo Y. Filial therapy for children's behavioral and emotional problems in mainland China. <i>J Child Adolesc Psychiatr Nurs</i> 2005; <b>18</b> (4): 171-80.	No included studies in infants <12 months of age on average at study/intervention onset
87	Guterman N. Early prevention of physical child abuse and neglect: existing evidence and future directions. <i>Child Maltreatment</i> 1997; <b>2</b> (1): 12-34.	Included studies/content overlaps with that of the included home visiting reviews in this overview
88	Guterman N. Enrollment strategies in early home visitation to prevent physical child abuse and neglect and the "universal versus targeted" debate: a meta-analysis of population-based and screening-based programs. <i>Child Abuse Negl</i> 1999; <b>23</b> (9): 863-90.	Unclear ages of children in included studies (i.e. not clearly reported in this review) (relevant studies included in home visiting reviews included in the overview)
89	Hahn RA, Bilukha OO, Crosby A, Fullilove MT, Liberman A, Moscicki EK, et al. First reports evaluating the effectiveness of strategies for preventing violence: early childhood home visitation. Findings from the Task Force on Community Preventive Services. <i>MMWR Recomm Rep</i> 2003; <b>52</b> (RR-14): 1-9.	Characteristics of included studies not reported; therefore unclear ages of infants in all of the included studies (many of the included studies included in the included home visiting and preventing maltreatment reviews in this overview)
90	Hall Moran V, Edwards J, Dykes F, Downe S. A systematic review of the nature of support for breast-feeding adolescent mothers. <i>Midwifery</i> 2007; <b>23</b> (2): 157-71.	Does not report on infant social/emotional wellbeing/development; focused on breastfeeding outcomes

91	Handmaker N, Wilbourne P. Motivational interventions in prenatal clinics. <i>Alcohol Res Health</i> 2001; <b>25</b> (3): 219-21-9.	Does not report on infant social/emotional wellbeing/development; focused on drinking related outcomes
92	Haskett M, Loehman J, Burkhart K. Parenting interventions in shelter settings: a qualitative systematic review of the literature. <i>Child Fam Soc Work</i> 2014: Article first published online: 11 MAR 2014 DOI: 10.1111/cfs.12147	Unclear ages of children in included studies (e.g. 'young children'); review includes predominately qualitative studies
93	Heneghan A, Horwitz S, Leventhal J. Evaluating intensive family preservation programs: a methodological review. <i>Pediatrics</i> 1996; <b>97</b> (4): 535-42.	No included studies in infants <12 months of age on average at study/intervention onset
94	Hickman L, Setodji C, Jaycox L, Kofner A, Schultz D, Barnes-Proby D, et al. Assessing programs designed to improve outcomes for children exposed to violence: Results from nine randomized controlled trials. <i>J Exp Criminol</i> 2013; <b>9</b> (3): 301-31.	No included studies in infants <12 months of age on average at study/intervention onset
95	Higgins R, Bromfield L, Richardson N, Higgins D. Child abuse prevention: what works? The effectiveness of home visiting programs for preventing child maltreatment: Australian Institute of Family Studies, Child Family Community Australia; 2006.	Limited study detail provided in this research brief; included studies/content overlaps with that of the included home visiting reviews in this overview
96	Hoagwood K. Family-based services in children's mental health: a research review and synthesis. <i>J Child Psychol Psychiatr</i> 2005; <b>46</b> (7): 690-713.	Unclear ages of children in many of the included 41 studies (majority appear to be in infants >12 months of age); this review includes IHDP 1990 which is covered in a number of reviews in this overview (Elkan 2000; Brett 2011; Goyal 2013; Spittle 2012; Vanderveen 2009; Wallace 2010)
97	Holzer P, Bomfield L, Richardson N. The effectiveness of parent education programs for preventing child maltreatment. In: Holzer P, Bomfield L, Richardson N, Higgins D, eds. <i>Child Abuse Prevention: What Works?</i> Melbourne, Victoria: Australian Institute of Family Studies, National Child Protection Clearinghouse; 2006.	Unclear ages of children in included studies
98	Horowitz J, Garber J. The prevention of depressive symptoms in children and adolescents: A meta-analytic review. <i>J Consult Clin Psychol</i> 2006; <b>74</b> (3): 401-15.	No included studies in infants <12 months of age on average at study/intervention onset
99	Ibanez G, de Reynal de Saint Michel C, Denantes M, Saurel-Cubizolles MJ, Ringa V, Magnier AM. Systematic review and meta-analysis of randomized controlled trials evaluating primary care-based interventions to promote breastfeeding in low-income women. <i>Fam Pract</i> 2012; <b>29</b> (3): 245-54.	Does not report on infant social/emotional wellbeing/development; focused on breastfeeding outcomes only
100	Jaafar S, Lee K, Ho J. Separate care for new mother and infant versus rooming-in for increasing the duration of breastfeeding. <i>Cochrane Database Syst Rev</i> 2012; <b>9</b> : CD006641.	Does not report on infant social/emotional wellbeing/development; reports on breastfeeding and other outcomes for the mother including confidence

101	Jahanfar S, Howard L, Medley N. Interventions for preventing or reducing domestic violence against pregnant women. <i>Cochrane Database Syst Rev</i> 2014; <b>11</b> : CD009414.	Does not report on infant social/emotional wellbeing/development; focused on reducing domestic violence against pregnant women
102	Jayarathne K, Kelaher M, Dunt D. Child Health Partnerships: a review of program characteristics, outcomes and their relationship. <i>BMC Health Serv Res</i> 2010; <b>10</b> : 172.	Unclear ages of children in (some) included studies; does not report on infant social/emotional wellbeing/development (mostly focused on characteristics, and outcomes such as: 'improved partnerships')
103	Johnston J, Cyne J, Durieux-Smith A, Bloom K. Teaching gestural signs to infants to advance child development: A review of the evidence. <i>First Lang</i> 2005; <b>25</b> (2): 235-51.	Does not report on infant social/emotional wellbeing/development; focused on language development outcomes
104	Jongen C, McCalman J, Bainbridge R, Tsey K. Aboriginal and Torres Strait Islander maternal and child health and wellbeing: a systematic search of programs and services in Australian primary health care settings. <i>BMC Pregnancy Childbirth</i> 2014; <b>14</b> (1): 251.	Does not report on infant social/emotional wellbeing/development; focused on obstetric and neonatal outcomes including health service use
105	Joy C, Saylan M. Mother and baby units for schizophrenia. <i>Cochrane Database Syst Rev</i> 2007; <b>1</b> : CD006333.	No included studies
106	Kaminski J, Valle L, Filene J, Boyle C. A meta-analytic review of components associated with parent training program effectiveness. <i>J Abnorm Child Psychol</i> 2008; <b>36</b> (4): 567-89.	Of the 77 included studies, only 3 (Gelfand 1996; Lyons-Ruth 1990; Vines 1994) clearly include infants <12 months of age on average (for many studies child age 'NR'); results not reported separately for these studies; (2 of the studies included in other reviews in this overview: Bakermans-Kranenburg 2003; Bernazzani 2001; Bee 2014)
107	Kaufman J, Synnot A, Ryan R, Hill S, Horey D, Willis N, et al. Face to face interventions for informing or educating parents about early childhood vaccination. <i>Cochrane Database Syst Rev</i> 2013; <b>5</b> : CD010038.	Does not report on infant social/emotional wellbeing/development; focused exclusively on early vaccination outcomes
108	Kearney M, York R, Deatrick J. Effects of home visits to vulnerable young families. <i>J Nurs Scholarsh</i> 2000; <b>32</b> (4): 369-76.	The studies/content of this review overlaps with the other home visiting reviews already included in this overview
109	Kendrick D, Elkan R, Hewitt M, Dewey M, Blair M, Robinson J, et al. Does home visiting improve parenting and the quality of the home environment? A systematic review and meta analysis. <i>Arch Dis Childhood</i> 2000; <b>82</b> (6): 443-51.	This review reports on a subset of outcomes from the Elkan 2000 review (which is included in this overview)
110	Kendrick D, Mulvaney C, Ye L, Stevens T, Mytton J, Stewart-Brown S. Parenting interventions for the prevention of unintentional injuries in childhood. <i>Cochrane Database Syst Rev</i> 2013; <b>3</b> : CD006020.	Does not report on infant social/emotional wellbeing/development; focused on injury prevention

111	Kendrick D, Smith S, Sutton AJ, Mulvaney C, Watson M, Coupland C, et al. The effect of education and home safety equipment on childhood thermal injury prevention: meta-analysis and meta-regression. <i>Inj Prev</i> 2009; <b>15</b> (3): 197-204.	Does not report on infant social/emotional wellbeing/development; focused on injury prevention
112	Kersten-Alvarez L, Hosman CM, Riksen-Walraven J, Van Doesum K, Hoefnagels C. Which preventive interventions effectively enhance depressed mothers' sensitivity? A meta-analysis. <i>Infant Ment Health J</i> 2011; <b>32</b> (3): 362-76.	Does not report on infant social/emotional wellbeing/development; reports on depressed mothers sensitivity only
113	Klasen H, Crombag AC. What works where? A systematic review of child and adolescent mental health interventions for low and middle income countries. <i>Soc Psychiatry Psychiatr Epidemiol</i> 2013; <b>48</b> (4): 595-611.	This review includes a mixture of interventions ("some focus on training parents, while others are school-based addressing children and/or teachers and others again test pharmacotherapies"); study characteristics (including ages) not clear for all included studies; the section on 'preventative interventions' summarises findings from Maulik 2009 review, and studies already in this overview (Tessier 2009; Ramanathan 2001)
114	Kodituwakku P, Kodituwakku EL. From research to practice: an integrative framework for the development of interventions for children with fetal alcohol spectrum disorders. <i>Neuropsychol Rev</i> 2011; <b>21</b> (2): 204-23.	No included studies in infants <12 months of age on average at study/intervention onset
115	Koh T, Budge D, Butow P, Renison B, Woodgate P. Audio recordings of consultations with doctors for parents of critically sick babies. <i>Cochrane Database Syst Rev</i> 2005; <b>1</b> : CD004502.	No included studies
116	Kraljevic M, Warnock F. Early educational and behavioral RCT interventions to reduce maternal symptoms of psychological trauma following preterm birth: a systematic review. <i>J Perinat Neonatal Nurs</i> 2013; <b>27</b> (4): 311-27.	Does not report on infant social/emotional wellbeing/development; focused on maternal mental health outcomes
117	Lassi ZS, Haider BA, Bhutta ZA. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. <i>Cochrane Database Syst Rev</i> 2010; <b>11</b> : CD007754.	Does not report on infant social/emotional wellbeing/development; focused on neonatal morbidity and mortality
118	Lavender T, Richens Y, Milan SJ, Smyth RM, Dowswell T. Telephone support for women during pregnancy and the first six weeks postpartum. <i>Cochrane Database Syst Rev</i> 2013; <b>7</b> : CD009338.	Though this review pre-specifies the outcome maternal-infant attachment, none of the included trials report on this outcome; the review does not report on infant social/emotional wellbeing/development
119	Law J, Garrett Z, Nye C. Speech and language therapy interventions for children with primary speech and language delay or disorder: a systematic review. <i>Cochrane Database Syst Rev</i> 2003; <b>3</b> : CD004110.	Does not report on infant social/emotional wellbeing/development; focused exclusively on language development outcomes

120	Law J, Plunkett C, Taylor J, Gunning M. Developing policy in the provision of parenting programmes: integrating a review of reviews with the perspectives of both parents and professionals. <i>Child Care Health Dev</i> 2009; <b>35</b> (3): 302-12.	Overview of reviews (realist synthesis that included systematic reviews)
121	Lawn JE, Mwansa-Kambafwile J, Horta B, Barros F, Cousens S. 'Kangaroo mother care' to prevent neonatal deaths due to preterm birth complications. <i>Int J Epidemiol</i> 2010; <b>39</b> (Suppl 1): i144-54.	Does not report on social/emotional wellbeing/development; focused on mortality and morbidity
122	Layzer J, Goodson B, Bernstein L, Price C. National Evaluation of Family Support Programs. Final Report Volume A: The Meta-Analysis. Cambridge, Massachusetts: DHHS/ACYF; 2001.	This meta-analysis included evaluation studies of 260 programs (from a database); unclear ages of children within these studies and characteristics of the individual evaluation studies/programs are not reported (although "Half targeted children from birth (or before birth) to three years of age")
123	Leijten P, Raaijmakers M, de Castro B, Matthys W. Does socioeconomic status matter? A meta-analysis on parent training effectiveness for disruptive child behavior. <i>J Clin Child Adolesc Psychol</i> 2013; <b>42</b> (3): 384-92.	Unclear ages of children in included studies
124	Letourneau N, Stewart M, Barnfather A. Adolescent mothers: support needs, resources, and support-education interventions. <i>J Adolesc Health</i> 2004; <b>35</b> (6): 509-25.	Unclear ages of children in included studies
125	Leve L, Harold G, Chamberlain P, Landsverk J, Fisher P, Vostanis P. Practitioner Review: Children in foster care – vulnerabilities and evidence-based interventions that promote resilience processes. <i>J Child Psychol Psychiatr</i> 2012; <b>53</b> (12): 1197-211.	No included studies in infants <12 months of age on average at study/intervention onset
126	Lewin S, Munabi-Babigumira S, Glenton C, Daniels K, Bosch-Capblanch X, van Wyk BE, et al. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. <i>Cochrane Database Syst Rev</i> 2010; <b>3</b> : CD004015.	Does not report on infant social/emotional wellbeing/development; focused on management of infectious diseases
127	Lieberman K, Le H, Perry D. A systematic review of perinatal depression interventions for adolescent mothers. <i>J Adolesc</i> 2014; <b>37</b> (8): 1227-35.	Does not report on infant social/emotional wellbeing/development; focused on maternal depression outcomes
128	Logsdon M, Davis D. Paraprofessional support for pregnant & parenting women. <i>MCN Am J Matern Child Nurs</i> 2004; <b>29</b> (2): 92-7; quiz 8-9.	Does not report on infant social/emotional wellbeing/development; unclear ages of children in all included studies (characteristics of studies incompletely reported)



129	London Economics. Cost benefit analysis of interventions with parents: Department for Children, Schools and Families, UK; 2007.	The characteristics of studies included in this review are not reported in detail (child age often reported as 'n/a'); this cost benefit analysis also includes reviews/meta-analyses, and includes a number of the reviews and primary studies included in this overview
130	Lucas P, McIntosh K, Petticrew M, Roberts H, Shiell A. Financial benefits for child health and well-being in low income or socially disadvantaged families in developed world countries. <i>Cochrane Database Syst Rev</i> 2008; <b>2</b> : CD006358.	Unclear ages of children in included studies; "The ages of the children at randomisation varied from 5 months to 18 years, but most were between 3 and 10 years at randomisation." For studies in infants <12 months of age, infant social/emotional wellbeing/development outcomes are not reported
131	Lumley J, Chamberlain C, Dowswell T, Oliver S, Oakley L, Watson L. Interventions for promoting smoking cessation during pregnancy. <i>Cochrane Database Syst Rev</i> 2009; <b>3</b> : CD001055.	Does not report on infant social/emotional wellbeing/development; focused on smoking cessation outcomes
132	Lundahl B, Nimer J, Parsons B. Preventing child abuse: a meta-analysis of parent training programs. <i>Res Soc Work Pract</i> 2006; <b>16</b> (3): 251-62.	Unclear ages of children in included studies
133	Lundahl B, Risser H, Lovejoy M. A meta-analysis of parent training: moderators and follow-up effects. <i>Clin Psychol Rev</i> 2006; <b>26</b> (1): 86-104.	Unclear ages of children in included studies (Table 1 reports that the third moderator is child age (1 = less than 60 months; 2 = 78/120 months; 3 = 144 months and over)
134	Lundahl B, Tollefson D, Risser H, Lovejoy MC. A meta-analysis of father involvement in parent training. <i>Res Soc Work Pract</i> 2007: doi: 10.1177/1049731507309828.	Unclear ages of children in included studies (where reported, in Table 1, appears all studies are in children >12 months)
135	MacLeod J, Nelson G. Programs for the promotion of family wellness and the prevention of child maltreatment: a meta-analytic review. <i>Child Abuse Negl</i> 2000; <b>24</b> (9): 1127-49.	Unclear ages of children in included studies; (i.e. described as prenatal and/or preschool; prenatal and/or preschool and school-age; school-age or not reported; and only as a summary across all included studies in the meta-analysis)
136	MacMillan H. Preventive health care, 2000 update: prevention of child maltreatment. <i>Can Med Assoc J</i> 2000; <b>163</b> (11): 1451-8.	The included studies in infants <12 months (Olds 1994; Marcenko 1994, 1996; Center on Child Abuse Prevention Research 1996; Britner 1997; Huxley 1993) are already included in other reviews in this overview (e.g. Elkan 2000; Reynolds 2009); review also summarises findings from systematic reviews

137	McLennan J, Lavis J. What is the evidence for parenting interventions offered in a Canadian community? <i>Can J Public Health</i> 2006; <b>97</b> (6): 454-8.	Does not report on infant social/emotional wellbeing/development; focused on the characteristics of included programs, rather than effectiveness outcomes
138	McNaughton D. Measuring parent satisfaction with early childhood intervention programs. <i>Topics Early Child Spec Educ</i> 1994; <b>14</b> (1): 26-48.	Does not report on infant social/emotional wellbeing/development; focused on parental satisfaction
139	Menting A, Orobio de Castro B, Matthys W. Effectiveness of the Incredible Years parent training to modify disruptive and prosocial child behavior: a meta-analytic review. <i>Clin Psychol Rev</i> 2013; <b>33</b> (8): 901-13.	No included studies in infants <12 months of age on average at study/intervention onset
140	Mikton C, Butchart A. Child maltreatment prevention: a systematic review of reviews. <i>Bull World Health Organ</i> 2009; <b>87</b> (5): 353-61.	Overview of reviews
141	Milligan K, Niccols A, Sword W, Thabane L, Henderson J, Smith A, et al. Maternal substance use and integrated treatment programs for women with substance abuse issues and their children: a meta-analysis. <i>Subst Abuse Treat Prev Policy</i> 2010; <b>5</b> : 21.	Does not report on infant social/emotional wellbeing/development; focused substance abuse outcomes
142	Miniati M, Callari A, Calugi S, Rucci P, Savino M, Mauri M, et al. Interpersonal psychotherapy for postpartum depression: a systematic review. <i>Arch Womens Ment Health</i> 2014; <b>17</b> (4): 257-68.	Does not report on infant social/emotional wellbeing/development; focused on maternal depression measures
143	Montgomery P, Bjornstad G, Dennis J. Media-based behavioural treatments for behavioural problems in children. <i>Cochrane Database Syst Rev</i> 2006; <b>1</b> : CD002206.	No included studies in infants <12 months of age on average at study/intervention onset
144	Nelson G, Westhues A, MacLeod J. A meta-analysis of longitudinal research on preschool prevention programs for children. <i>Prev Treat</i> 2003; <b>6</b> (1).	Unclear ages of children in included studies; (e.g. reported as 'birth to 3' or '4 or more' across all studies)
145	Newman C, Fowler C, Cashin A. The development of a parenting program for incarcerated mothers in Australia: A review of prison-based parenting programs. <i>Contemp Nurse</i> 2011; <b>39</b> (1): 2-11.	Unclear ages of children in included studies
146	Ni PK, Koh SSL. The role of family and friends in providing social support towards enhancing the wellbeing of postpartum women: a comprehensive systematic review. <i>JBI Database Syst Rev</i> 2011; <b>9</b> (10): 58.	Does not report on infant social/emotional wellbeing/development; focused on maternal mental health, breastfeeding and infant care
147	Niccols A, Milligan K, Sword W, Thabane L, Henderson J, Smith A, et al. Maternal mental health and integrated programs for mothers with substance abuse issues. <i>Psychol Addict Behav</i> 2010; <b>24</b> (3): 466-74.	Does not report on infant social/emotional wellbeing/development; focused on maternal mental health
148	Niccols A, Milligan K, Sword W, Thabane L, Henderson J, Smith A. Integrated programs for mothers with substance abuse issues: A systematic review of studies reporting on parenting outcomes. <i>Harm Reduct J</i> 2012; <b>9</b> : 14.	Does not report on infant social/emotional wellbeing/development; focused on parental outcomes

149	Niela-Vilén H, Axelin A, Salanterä S, Melender HL. Internet-based peer support for parents: A systematic integrative review. <i>Int J Nurs Stud</i> 2014; <b>51</b> (11): 1524-37.	Does not report on infant social/emotional wellbeing/development; focused on parenting outcomes; many of the included studies are qualitative
150	Nieuwboer C, Fukkink R, Hermanns J. Peer and professional parenting support on the Internet: a systematic review. <i>Cyberpsychol Behav Soc Netw</i> 2013; <b>16</b> (7): 518-28.	This review focused on describing characteristics of interventions, rather than reporting on effectiveness outcomes relating to infant social/emotional wellbeing/development
151	Nieuwboer C, Fukkink R, Hermanns JMA. Online programs as tools to improve parenting: A meta-analytic review. <i>Child Youth Serv Rev</i> 2013; <b>35</b> (11): 1823-9.	This review focused on describing characteristics of interventions, rather than reporting on effectiveness outcomes relating to infant social/emotional wellbeing/development (reports aggregated result for "Child outcomes"); unclear ages of children in some studies
152	Nievar A, Van Egeren L. More Is better: a meta-analysis of home visiting programs for at-risk families. Biennial Conference of the Society for Research in Child Development, Tampa, FL, Apr 24-27, 2003; ERIC 2005.	Does not report on infant social/emotional wellbeing/development; focused on maternal behaviour
153	Nievar M, Van Egeren L, Pollard S. A meta-analysis of home visiting programs: Moderators of improvements in maternal behavior. <i>Infant Ment Health J</i> 2010; <b>31</b> (5): 499-520.	Does not report on infant social/emotional wellbeing/development; focused on maternal outcomes
154	Nowak C, Heinrichs N. A comprehensive meta-analysis of Triple P-Positive Parenting Program using hierarchical linear modeling: effectiveness and moderating variables. <i>Clin Child Fam Psychol Rev</i> 2008; <b>11</b> (3): 114-44.	No included studies in infants <12 months of age on average at study/intervention onset
155	Ohlsson A, Jacobs S. NIDCAP: a systematic review and meta-analyses of randomized controlled trials. <i>Pediatrics</i> 2013; <b>131</b> (3): e881-e93.	Does not report on infant social/emotional wellbeing/development; focused on death and neurosensory disability, and short-term 'medical' outcomes e.g. chronic lung disease, sepsis
156	Osterling K, Austin M. Substance abuse interventions for parents involved in the child welfare system: evidence and implications. <i>J Evid Based Soc Work</i> 2008; <b>5</b> (1-2): 157-89.	Does not report on infant social/emotional wellbeing/development; focused on outcomes relating to substance abuse - retention in programs, abstinence etc.
157	Panther-Brick C, Burgess A, Eggerman M, McAllister F, Pruett K, Leckman J. Practitioner Review: Engaging fathers – recommendations for a game change in parenting interventions based on a systematic review of the global evidence. <i>J Child Psychol Psychiatry</i> 2014; <b>55</b> (11): 1187-212.	This review focuses on describing the characteristics of the interventions (i.e. provides descriptions of the outcomes reported in studies with fathers, without reporting outcome data/results)

158	Petrie J, Bunn F, Byrne G. Parenting programmes for preventing tobacco, alcohol or drugs misuse in children <18: a systematic review. <i>Health Educ Res</i> 2007; <b>22</b> (2): 177-91.	No included studies in infants <12 months of age on average at study/intervention onset
159	Poole M, Seal D, Taylor C. A systematic review of universal campaigns targeting child physical abuse prevention. <i>Health Educ Res</i> 2014; <b>29</b> (3): 388-432.	Does not report on infant social/emotional wellbeing/development; focused on child physical abuse
160	Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A, et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. <i>Lancet</i> ; <b>381</b> (9879): 1736-46.	Does not report on infant social/emotional wellbeing/development; focused on maternal/neonatal mortality etc.
161	Ray D, Bratton S, Rhine T, Jones L. The effectiveness of play therapy: Responding to the critics. <i>Int J Play Ther</i> 2001; <b>10</b> (1): 85-108.	No included studies in infants <12 months of age on average at study/intervention onset
162	Reichow B, Servili C, Yasamy M, Barbui C, Saxena S. Non-specialist psychosocial interventions for children and adolescents with intellectual disability or lower-functioning autism spectrum disorders: a systematic review. <i>PLoS Med</i> 2013; <b>10</b> (12): e1001572; discussion e.	Only 1 of the 29 included studies is in infants <12 months of age on average (Del Giudice 2006)
163	Renfrew MJ, Craig D, Dyson L, McCormick F, Rice S, King SE, et al. Breastfeeding promotion for infants in neonatal units: a systematic review. <i>Child Care Health Dev</i> 2010; <b>36</b> (2): 165-78.	Does not report on infant social/emotional wellbeing/development; focused on breastfeeding outcomes
164	Renfrew M, McCormick F, Wade A, Quinn B, Dowswell T. Support for healthy breastfeeding mothers with healthy term babies. <i>Cochrane Database Syst Rev</i> 2012; <b>5</b> : CD001141.	Does not report on infant social/emotional wellbeing/development; focused on breastfeeding outcomes
165	Reyno S, McGrath P. Predictors of parent training efficacy for child externalizing behavior problems-a meta-analytic review. <i>J Child Psychol Psychiatry</i> 2006; <b>47</b> (1): 99-111.	No included studies in infants <12 months of age on average at study/intervention onset
166	Rizo C, Macy R, Ermentrout D, Johns N. A review of family interventions for intimate partner violence with a child focus or child component. <i>Aggress Violent Behav</i> 2011; <b>16</b> (2): 144-66.	No included studies in infants <12 months of age on average at study/intervention onset
167	Roberts I, Kramer M, Suissa S. Does home visiting prevent childhood injury? A systematic review of randomised controlled trials. <i>BMJ</i> 1996; <b>312</b> (7022): 29-33.	Does not report on infant social/emotional wellbeing/development; focused on child injury
168	Robertson J, Hatton C, Wells E, Collins M, Langer S, Welch V, et al. The impacts of short break provision on families with a disabled child: an international literature review. <i>Health Soc Care Community</i> 2011; <b>19</b> (4): 337-71.	No included studies in infants <12 months of age on average at study/intervention onset
169	Rork K, McNeil C. Evaluation of foster parent training programs: a critical review. <i>Child Fam Behav Ther</i> 2011; <b>33</b> (2): 139-70.	No included studies in infants <12 months of age on average at study/intervention onset

170	Sanders M, Kirby J, Tellegen C, Day J. The Triple P-Positive Parenting Program: A systematic review and meta-analysis of a multi-level system of parenting support. <i>Clin Psychol Rev</i> 2014; <b>34</b> (4): 337-57.	2/101 studies in infants <12 months of age; results not reported separately for these studies
171	Schrader McMillan A, Barlow J, Stewart Brown S, Carter Y, Sidebotham P, Paul M. Systematic review of interventions for the secondary prevention and treatment of emotional abuse of children by primary carers. Coventry: Warwick Medical School; 2008.	Of the 21 included studies, infants were either >12 months of age, or unclear ages of children; the review includes Bakermans-Kranenburg 2003 review which is included in this overview, and Black 1995 which is included in other reviews (Elkan 2000; Peakcock 2013; Wade 1999; Maulik 2009)
172	Serketich W, Dumas J. The effectiveness of behavioral parent training to modify antisocial behavior in children: A meta-analysis. <i>Behav Ther</i> 1996; <b>27</b> (2): 171-86.	Unclear ages of children in included studies; average age of children in meta-analysis: 6.05 years
173	Sherr L, Croome N, Bradshaw K, Parra Castaneda K. A systematic review examining whether interventions are effective in reducing cognitive delay in children infected and affected with HIV. <i>AIDS Care</i> 2014; <b>26</b> Suppl 1: S70-7.	No included studies in infants <12 months of age on average at study/intervention onset
174	Shields L, Zhou H, Pratt J, Taylor M, Hunter J, Pascoe E. Family-centred care for hospitalised children aged 0-12 years. <i>Cochrane Database Syst Rev</i> 2012; <b>10</b> : CD004811.	No included studies in infants <12 months of age on average at study/intervention onset
175	Shields L, Zhou H, Taylor M, Hunter J, Munns A, Watts R. Family-centred care for hospitalised children aged 0-12 Years: A systematic review of quasi-experimental studies. <i>JBI Library Syst Rev</i> 2012; <b>10</b> (39): 34.	No included studies in infants <12 months of age on average at study/intervention onset
176	Shilling V, Morris C, Thompson-Coon J, Ukoumunne O, Rogers M, Logan S. Peer support for parents of children with chronic disabling conditions: a systematic review of quantitative and qualitative studies. <i>Dev Med Child Neurol</i> 2013; <b>55</b> (7): 602-9.	No included studies in infants <12 months of age on average
177	Siegenthaler E, Munder T, Egger M. Effect of preventive interventions in mentally ill parents on the mental health of the offspring: systematic review and meta-analysis. <i>J Am Acad Child Adolesc Psychiatr</i> 2012; <b>51</b> (1): 8-17 e8.	2 of the 13 included studies were in infants <12 months of age; both studies (Hart 1998; Forman 2007) are included in other reviews in this overview (e.g. Poobalan 2007; Bee 2004)
178	Singer G, Ethridge B, Aldana S. Primary and secondary effects of parenting and stress management interventions for parents of children with developmental disabilities: A meta-analysis. <i>Ment Retard Dev Disabil Res Rev</i> 2007; <b>13</b> (4): 357-69.	Does not report on social/emotional wellbeing/development; focused on parental outcomes (i.e. stress)
179	Skowron E, Reinemann D. Effectiveness of psychological interventions for child maltreatment: a meta-analysis. <i>Psychother Theory Res Pract Train</i> 2005; <b>43</b> (1): 51-71.	No included studies in infants <12 months of age on average at study/intervention onset; in the 21 included studies "Child participants averaged 6.28 (SD 4.25) years of age"

180	Smith T, Duggan A, Bair-Merritt M, Cox G. Systematic review of fathers' involvement in programmes for the primary prevention of child maltreatment. <i>Child Abuse Rev</i> 2012; <b>21</b> (4): 237-54.	4 of the 16 included studies are in infants <12 months of age, but only 2 (Duggan 2004; Huebner 2002) had eligible study designs (the other 2 studies were single group surveys); both of these studies are included in other reviews in this overview (e.g. Peacock 2013; Wade 1999; Pinquart 2010; Reynolds 2009; Suchman 2006)
181	Stade B, Bailey C, Dzendoletas D, Sgro M, Dowswell T, Bennett D. Psychological and/or educational interventions for reducing alcohol consumption in pregnant women and women planning pregnancy. <i>Cochrane Database Syst Rev</i> 2009; <b>2</b> : CD004228.	Does not report on social/emotional wellbeing/development; focused on alcohol consumption (i.e. abstinence)
182	Stewart-Brown S, Schrader-McMillan A. Parenting for mental health: what does the evidence say we need to do? Report of Workpackage 2 of the DataPrev project. <i>Health Promot Int</i> 2011; <b>26</b> Suppl 1: i10-28.	Overview of reviews
183	Sweet M, Appelbaum M. Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. <i>Child Dev</i> 2004; <b>75</b> (5): 1435-56.	Of the 60 included programs in this review, 75% began and ended between birth and 3 years of age; however, only aggregate results are reported for all studies, and individual study characteristics are not reported
184	Tellegen C, Sanders M. Stepping Stones Triple P-Positive Parenting Program for children with disability: a systematic review and meta-analysis. <i>Res Dev Disabil</i> 2013; <b>34</b> (5): 1556-71.	No included studies in infants <12 months of age on average at study/intervention onset
185	Tennant R, Goens C, Barlow C, Day C, Stewart-Brown S. A systematic review of reviews of interventions to promote mental health and prevent mental health problems in children and young people. <i>J Public Ment Health</i> 2007; <b>6</b> (1): 25-31.	Overview of reviews
186	Terplan M, Lui S. Psychosocial interventions for pregnant women in outpatient illicit drug treatment programs compared to other interventions. <i>Cochrane Database Syst Rev</i> 2007; <b>4</b> : CD006037.	Does not report on social/emotional wellbeing/development; focused on obstetric/neonatal and abstinence outcomes
187	Thomas H, Camiletti Y, Cava M, Feldman L, Underwood J, Wade K. Effectiveness of parenting groups with professional involvement in improving parent and child outcomes, Effective Public Health Practice Project. Public Health Branch, Ontario Ministry of Health; 1999.	31 studies included in the review; characteristics only presented for 4 strong and 10 moderate quality studies (unclear ages of children in many of the included studies); the 2 studies in infants <12 months of age (Ramey 1993; Wolfson 1992) are included in other reviews in this overview (e.g. Brett 2011; Regaldo 2001)

188	Thomas R, Zimmer-Gembeck M. Behavioral outcomes of Parent-Child Interaction Therapy and Triple P-Positive Parenting Program: a review and meta-analysis. <i>J Abnorm Child Psychol</i> 2007; <b>35</b> (3): 475-95.	No included studies in infants < 12 months of age on average at study/intervention onset
189	Trivette C, Dunst C, Hamby D. Influences of family-systems intervention practices on parent-child interactions and child development. <i>Topics Early Child Spec Educ</i> 2010; <b>30</b> (1): 3-19.	This was not clearly a systematic review; “participants’ children were, on average, 27 months of age (range = 1–89)”
190	Turner W, Macdonald G, Dennis J. Cognitive-behavioural training interventions for assisting foster carers in the management of difficult behaviour. <i>Cochrane Database Syst Rev</i> 2005; <b>1</b> : CD003760.	No included studies in infants <12 months of age on average at study/intervention onset
191	Turner W, Macdonald G. Treatment foster care for improving outcomes in children and young people: a systematic review. <i>Res Soc Work Pract</i> 2011; <b>21</b> (5): 501-27.	No included studies in infants <12 months of age on average at study/intervention onset
192	Underdown A, Barlow J, Stewart-Brown S. Tactile stimulation in physically healthy infants: results of a systematic review. <i>J Reprod Infant Psychol</i> 2010; <b>28</b> (1): 11-29.	The content of this review is covered in the included Cochrane review (Bennett 2013)
193	Van Andel H, Grietens H, Strijker J, Van der Gaag R, Knorth E. Searching for effective interventions for foster children under stress: a meta-analysis. <i>Child Fam Soc Work</i> 2014; <b>19</b> (2): 149-55.	No included studies in infants <12 months of age on average at study/intervention onset
194	van IJzendoorn MD, Juffer F, Duyvesteyn M. Breaking the intergenerational cycle of insecure attachment: a review of the effects of attachment-based interventions on maternal sensitivity and infant security. <i>J Child Psychol Psychiatry</i> 1995; <b>36</b> (2): 225-48.	Bakermans-Kranenburg 2003 provides update of this review
195	Vesely C, Ewaida M, Anderson E. Cultural competence of parenting education programs used by Latino families: a review. <i>Hisp J Behav Sci</i> 2014; <b>36</b> (1): 27-47.	Unclear ages of children in many of the included studies; review focuses predominately on program characteristics rather than effectiveness outcomes
196	Vickers A, Ohlsson A, Lacy J, Horsley A. Massage for promoting growth and development of preterm and/or low birth-weight infants. <i>Cochrane Database Sys Rev</i> 2004; <b>2</b> : CD000390.	In only 2 of the 14 included studies (Rice 1979; White Traut 1983) was the intervention reported to be a 'parenting' intervention (i.e. in the other studies it was delivered by nurses, not the carers); these studies are included in other reviews in this overview (e.g. Spittle 2012; Mercer 2006)
197	Waddell C, Hua J, Garland O, Peters R, McEwan K. Preventing mental disorders in children: a systematic review to inform policy-making. <i>Can J Public Health</i> 2007; <b>98</b> (3): 166-73.	Only 1 of the 15 included trials is in infants <12 months of age on average (Nurse Visitation: Olds 1993, 1998, 1999); this study is included in other reviews in this overview (e.g. Elkan 2000)

198	Wade C, Llewellyn G, Matthews J. Review of parent training interventions for parents with intellectual disability. <i>J Appl Res Intellect Disabil</i> 2008; <b>21</b> (4): 351-66.	No included studies in infants <12 months of age on average (with a control group) at study/intervention onset
199	Whittingham K. Parents of children with disabilities, mindfulness and acceptance: a review and a call for research. <i>Mindfulness</i> 2014; <b>5</b> (6): 704-9.	No included studies in infants <12 months of age on average at study/intervention onset
200	Wilson P, Rush R, Hussey S, Puckering C, Sim F, Allely CS, et al. How evidence-based is an 'evidence-based parenting program'? A PRISMA systematic review and meta-analysis of Triple P. <i>BMC Med</i> 2012; <b>10</b> : 130.	No included studies in infants <12 months of age on average at study/intervention onset
201	Wilson S, McKenzie K, Quayle E, Murray G. A systematic review of interventions to promote social support and parenting skills in parents with an intellectual disability. <i>Child Care Health Dev</i> 2014; <b>40</b> (1): 7-19.	Only 1 of the 7 of the included studies (Feldman 1999) was in infants <12 months of age; this study does not report on social/emotional wellbeing/development
202	Winokur M, Holtan A, Batchelder K. Kinship care for the safety, permanency, and well-being of children removed from the home for maltreatment. <i>Cochrane Database Syst Rev</i> 2014; <b>1</b> : CD006546.	Unclear ages of children in many of the included studies; "For age at entry into the specific placement, there was an overall unweighted mean age at placement of 7 years 11 months based on eight studies"
203	Yonemoto N, Dowswell T, Nagai S, Mori R. Schedules for home visits in the early postpartum period. <i>Evid Based Child Health</i> 2014; <b>9</b> (1): 5-99.	Does not report on infant social/emotional wellbeing/development; focused on maternal/infant morbidities, including maternal mental health outcomes
204	Yu ZB, Han SP, Xu YQ, Weng L. Maternal satisfaction and clinical effect of kangaroo mother care in preterm infants: a meta-analysis. <i>Chinese J Evid Based Med</i> 2008; <b>8</b> (4): 277-83.	Does not report on infant social/emotional wellbeing/development; focused on maternal satisfaction
205	Zaza S, Sleet D, Thompson R, Sosin D, Bolen J. Reviews of evidence regarding interventions to increase use of child safety seats. <i>Am J Prev Med</i> 2001; <b>21</b> (4 Suppl): 31-47.	Does not report on infant social/emotional wellbeing/development; focused child safety outcomes



## Excluded reviews

No.	Excluded review reference	Reason for exclusion
1	Aarthun A, Akerjordet K. Parent participation in decision-making in health-care services for children: an integrative review. <i>J Nurs Manag</i> 2014; <b>22</b> (2): 177-91.	Wrong study design: review of predominately qualitative studies
2	Albernaz E, Victora CG. Impacto do aconselhamento face a face sobre a duração do aleitamento exclusivo: um estudo de revisão. <i>Rev Panam Salud Publica</i> [Pan American Journal of Public Health] 2003; <b>14</b> (1): 17-24.	Wrong language: not in English
3	Anderson DW. A meta-analysis of cognitive intervention, parent management training, and psychopharmacological intervention in the treatment of conduct disorder. Virginia, USA: Virginia Polytechnic Institute and State University; 1996.	Wrong participants: participants were children with conduct problems (all older than 2 years)
4	Ashford KB, Hahn E, Hall L, Rayens MK, Noland M. Postpartum smoking relapse and secondhand smoke. <i>Public Health Rep</i> 2009; <b>124</b> (4): 515-26.	Wrong intervention: review of postpartum smoking relapse programs
5	Australia Department of Family and Community Services. Parenting information project. Volume two, Literature review. Canberra, ACT: Department of Family and Community Services; 2004.	Wrong study design: not a systematic review
6	Australian Human Rights Commission. Supporting working parents: pregnancy and return to work national review - Report 2014. Sydney: Commonwealth of Australia; 2014.	Wrong study design: not a systematic review
7	Baer JC, Martinez CD. Child maltreatment and insecure attachment: a meta-analysis. <i>J Reprod Infant Psychol</i> 2006; <b>24</b> (3): 187-97.	Wrong scope: not a review of parenting interventions
8	Banwell C, Denton B, Bammer G. Programmes for the children of illicit drug-using parents: issues and dilemmas. <i>Drug Alcohol Rev</i> 2002; <b>21</b> (4): 381-6.	Wrong study design: not a systematic review
9	Barlow J, Bennett C, Midgley N. Parent-infant psychotherapy for improving parental and infant mental health: protocol for a systematic review. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2013.	Wrong publication type: protocol
10	Barlow J, Coren E. Parent-training programmes for improving maternal psychosocial health. <i>Cochrane Database Syst Rev</i> 2004; <b>1</b> : CD002020.	Other version: old version of a Cochrane review (classified as 'Relevant')
11	Barlow J, Ellard D. Psycho-educational interventions for children with chronic disease, parents and siblings: an overview of the research evidence base. <i>Child Care Health Dev</i> 2004; <b>30</b> (6): 637-45.	Wrong intervention: review of psycho-educational interventions for children and adolescents with chronic disease, their parents and their siblings

12	Barlow J, Parsons J, Stewart-Brown S. Preventing emotional and behavioural problems: the effectiveness of parenting programmes with children less than 3 years of age. <i>Child Care Health Dev</i> 2005; <b>31</b> (1): 33-42.	Duplicate publication: duplicate (co-registration) of Cochrane review (classified as 'Relevant')
13	Barlow J, Parsons J. Group-based parent-training programmes for improving emotional and behavioural adjustment in 0-3 year old children: a systematic review. <i>Campbell Syst Rev</i> 2005; <b>2</b> .	Duplicate publication: duplicate (co-registration) of Cochrane review (classified as 'Relevant')
14	Barlow J, Shaw RJ, Stewart-Brown S, Unit RE. Parenting programmes and minority ethnic families: experiences and outcomes. London, UK: Jessica Kingsley Publishers; 2004.	No access to full text: does not appear to be a systematic review
15	Barlow J, Smailagic N, Bennett C, Huband N, Jones H, Coren E. Individual and group based parenting for improving psychosocial outcomes for teenage parents and their children. <i>Campbell Syst Rev</i> 2011; <b>7</b> .	Duplicate publication: duplicate (co-registration) of Cochrane review (classified as 'Included')
16	Barlow J, Smailagic N, Huband N, Roloff V, Bennett C. Parent-training programmes for improving parental psychosocial health. <i>Campbell Syst Rev</i> 2012; <b>8</b> .	Duplicate publication: duplicate (co-registration) of Cochrane review (classified as 'Relevant')
17	Barlow J, Stewart-Brown S. Behavior problems and group-based parent education programs. <i>J Dev Behav Pediatr</i> 2000; <b>21</b> (5): 356-70.	Wrong participants: participants were children 3 to 10 years
18	Barlow J, Stewart-Brown S. Behavior problems and group-based parent education programs. <i>J Dev Behav Pediatr</i> 2000; <b>21</b> (5): 356-70.	Wrong participants: participants were children 3 to 10 years
19	Barlow J. Systematic review of the effectiveness of parent-training programmes in improving behaviour problems in children aged 3-10 years - a review of the literature on parent-training programmes and child behaviour outcome measures. Oxford, UK: Health Services Research Institute; 1999.	Wrong participants: participants were children 3 to 10 years
20	Barnes H, Day P, Cronin N. Trial and error - a review of UK child support policy. London, UK: Family Policy Studies Centre; 1998.	Wrong study design: not a systematic review
21	Barnes J, Freude-Lagevardi A. From pregnancy to early childhood: early interventions to enhance the mental health of children and families. London, UK: Mental Health Foundation London; 2003.	Wrong study design: not a systematic review
22	Barrett H. Parenting programmes for families at risk: a source book: National Family and Parenting Institute; 2003.	Wrong study design: not a systematic review
23	Priest N, Roseby R, Waters E, Polnay A, Campbell R, Spencer N, Webster P, Ferguson-Thorne G. Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke. <i>Cochrane Database Syst Rev</i> 2008; <b>4</b> : CD001746.	Other version: old version of a Cochrane review (classified as 'Relevant')

24	Beake S, Pellowe C, Dykes F, Schmied V, Bick D. A systematic review of structured compared with non-structured breastfeeding programmes to support the initiation and duration of exclusive and any breastfeeding in acute and primary health care settings. <i>Matern Child Nutr</i> 2012; <b>8</b> (2): 141-61.	Duplicate publication: based on Joanna Briggs Institute (JBI) review (classified as 'Relevant')
25	Beardslee W, Gladstone T. Prevention of childhood depression: Recent findings and future prospects. <i>Biol Psychiatry</i> 2001; <b>49</b> (12): 1101-10.	Wrong study design: not a systematic review
26	Beeber L, Shandor Miles M. Maternal mental health and parenting in poverty. <i>Annu Rev Nurs Res</i> 2003; <b>21</b> (1): 303-31.	Wrong study design: not a systematic review
27	Bennett C, Macdonald GM, Dennis J, Coren E, Patterson J, Astin M, et al. Home-based support for disadvantaged adult mothers. <i>Cochrane Database Syst Rev</i> 2007; <b>3</b> : CD003759.	Other version: old version of a withdrawn Cochrane review
28	Benzies K, Mychasiuk R. Fostering family resiliency: A review of the key protective factors. <i>Child Fam Soc Work</i> 2009; <b>14</b> (1): 103-14.	Wrong scope: not a review of parenting interventions; review of protective factors
29	Bird E. Adjustment in adoptive parenthood: University of Oxford; 2011.	Wrong scope: not a review of parenting interventions
30	Black M, Dewey K. Promoting equity through integrated early child development and nutrition interventions. <i>Ann NY Acad Sci</i> 2014; <b>1308</b> (1): 1-10.	Wrong study design: not a systematic review
31	Bond C, Burns L. Investing in parents' development as an investment in primary prevention. <i>J Ment Health</i> 1998; <b>7</b> (5): 493-503.	Wrong study design: not a systematic review
32	Bowes J. Response of parents to parent education and support programs: A review of evaluation research on some key USA programs. 7th Australian Institute of Family Studies Conference, Sydney, Australia; 2000.	Wrong publication type: conference presentation
33	Bradley R, Vandell D. Child care and the well-being of children. <i>Arch Pediatr Adolesc Med</i> 2007; <b>161</b> (7): 669-76.	Wrong study design: not a systematic review
34	Bratton S, Landreth G, Lin YWD. Child parent relationship therapy: a review of controlled-outcome research. In: Baggerly JN, Ray DC, Bratton S, eds. <i>Child-Centered Play Therapy Research: the Evidence Base for Effective Practice</i> . Hoboken, New Jersey: John Wiley & Sons, Inc.; 2010: 265-93.	Wrong publication type: book chapter, summarising a review (Bratton 2005) which includes studies of children 3 to 10 years old
35	Braveman P, Egerter S, Pearl M, Marchi K, Miller C. Early discharge of newborns and mothers: a critical review of the literature. <i>Pediatrics</i> 1995; <b>96</b> (4): 716-26.	Wrong study design: not a systematic review
36	Brendel K. A systematic review and meta-analysis of the effectiveness of child-parent interventions for children and adolescents with anxiety disorders. Chicago, USA: Loyola University Chicago; 2011.	Wrong participants: participants were children with anxiety: "The age of participants ranged from 4 to 17 years"

37	Brendel KE, Maynard B. Child–parent interventions for childhood anxiety disorders a systematic review and meta-analysis. <i>Res Soc Work Pract</i> 2014; <b>24</b> (3): 287-95.	Wrong participants: participants were children with anxiety (over 6 years of age in all studies)
38	Britton C, McCormick FM, Renfrew MJ, Wade A, King SE. Support for breastfeeding mothers. <i>Cochrane Database Syst Rev</i> 2007; <b>1</b> : CD001141.	Other version: old version of a Cochrane review (classified as 'Relevant')
39	Broberg A. A review of interventions in the parent-child relationship informed by attachment theory. <i>Acta Paediatrica</i> 2000; <b>89</b> (s434): 37-42.	Wrong study design: not a systematic review
40	Brown T, van Urk F, Waller R, Mayo-Wilson E. Centre-based day care for children younger than five years of age in low-and middle-income countries. <i>Cochrane Database Syst Rev</i> 2014; <b>9</b> : CD010543.	Wrong intervention: review excluded interventions with a parenting component
41	Brunette M, Dean W. Community mental health care for women with severe mental illness who are parents. <i>Community Ment Health J</i> 2002; <b>38</b> (2): 153-65.	Wrong study design: not a systematic review
42	Bunting L. Parenting programmes: The best available evidence. <i>Child Care Pract</i> 2004; <b>10</b> (4): 327-43.	Wrong study design: not a systematic review
43	Burgess A. Fathers and parenting interventions: what works? Preliminary research findings and their application. Abergavenny, UK: Fatherhood Institute; 2009.	Wrong study design: not a systematic review
44	Buston K, Parkes A, Thomson H, Wight D, Fenton C. Parenting interventions for male young offenders: A review of the evidence on what works. <i>J Adolesc</i> 2012; <b>35</b> (3): 731-42.	Wrong study design: review focused on qualitative studies (interviews, questionnaires)
45	Carr A. The evidence base for family therapy and systemic interventions for child-focused problems. <i>J Fam Ther</i> 2014; <b>36</b> (2): 107-57.	Wrong study design: not a systematic review
46	Carroli G, Villar J, Piaggio G, Khan-Neelofur D, Gülmezoglu M, Mugford M, et al. WHO systematic review of randomised controlled trials of routine antenatal care. <i>Lancet</i> 2001; <b>357</b> (9268): 1565-70.	Wrong intervention: review of routine antenatal care
47	Casto G, White K. The efficacy of early intervention programs with environmentally at-risk infants. <i>J Child Contemp Soci</i> 1985; <b>17</b> (1): 37-50.	Published prior to 1994
48	Rossi, C. Parent Training Programs: Insight for Practitioners, Atlanta: Centers for Disease Control and Prevention; 2009.	Wrong study design: not a systematic review
49	Centre C. Closing the quality chasm in child abuse treatment: identifying and disseminating best practices - the findings of the Kauffman Best Practices Project to help children heal from child abuse. San Diego, California: Chadwick Center for Children and Families Children’s Hospital–San Diego; 2004.	Wrong study design: not a systematic review

50	Chaimay B, Thinkhamrop B, Thinkhamrop J. Risk factors associated with language development problems in childhood - a literature review. <i>Journal of the Medical Association of Thailand = Chotmaihet Thangphaet</i> 2006; <b>89</b> : 1080-6.	Wrong scope: not a review of parenting interventions
51	Christoffersen MN, Corcoran J, Daining C, DePanfilis D. Cognitive-behavioral therapy for parents who have physically abused their children [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2009.	Wrong publication type: protocol
52	Clark JW. A meta-analytic look at parent-focused interventions for young families in high-risk circumstances: Pennsylvania State University; 2000.	No access to full text: thesis
53	Close J. Does accident prevention education reduce the incidence of childhood accidents in the home? <i>Br J Community Nurs</i> 2002; <b>7</b> (12): 639-44.	Wrong study design: not a systematic review ('mini review')
54	Coley R, Chase-Lansdale P. Adolescent pregnancy and parenthood: recent evidence and future directions. <i>Am Psychol</i> 1998; <b>53</b> (2): 152-66.	Wrong study design: not a systematic review
55	Combs-Orme T, Reis J, Ward L. Effectiveness of home visits by public health nurses in maternal and child health: an empirical review. <i>Public Health Rep</i> 1985; <b>100</b> (5): 490-9.	Published prior to 1994
56	Corcoran J. Family interventions with child physical abuse and neglect: A critical review. <i>Child Youth Serv Rev</i> 2000; <b>22</b> (7): 563-91.	Wrong study design: not a systematic review
57	Coren E, Hutchfield J, Thomae M, Gustafsson C. Parent-training interventions to support intellectually disabled parents: a systematic review. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2010.	Duplicate publication: duplicate (co-registration) of Cochrane review (classified as 'Relevant')
58	Coren E, Thomae M, Hutchfield J. Parenting training for intellectually disabled parents: a Cochrane systematic review. <i>Res Soc Work Pract</i> 2011; <b>21</b> (4): 432-41.	Duplicate publication: publication based on a Cochrane review (classified as 'Relevant')
59	Cornell T, Hamrin V. Clinical interventions for children with attachment problems. <i>J Child Adolesc Psychiatr Nurs</i> 2008; <b>21</b> (1): 35-47.	Wrong study design: not a systematic review
60	Cowan P, Cowan C. Controversies in couple relationship education (cre): overlooked evidence and implications for research and policy. <i>Psychol Public Policy Law</i> 2014; <b>20</b> (4): 361-83.	Wrong scope: not a review of parenting interventions
61	Craig E. Parenting programs for women with mental illness who have young children: a review. <i>Aust N Z J Psychiatr</i> 2004; <b>38</b> (11-12): 923-8.	Wrong study design: not a systematic review
62	Cusson R, Lee A. Parental interventions and the development of the preterm infant. <i>J Obstet Gynecol Neonatal Nurs</i> 1994; <b>23</b> (1): 60-8.	Wrong study design: not a systematic review
63	Dabney J. Exploring fatherhood from a man's perspective: Universit of Warwick; 2004.	Wrong study design: not a systematic review

64	Daley D, Van der Oord S, Ferrin M, et al. Behavioral interventions in attention-deficit/hyperactivity disorder: a meta-analysis of randomized controlled trials across multiple outcome domains. <i>J Am Acad Child Adolesc Psychiatr</i> 2014; <b>53</b> (8): 835-47.	Wrong participants: participants were children with attention deficit hyperactivity disorder
65	Daro D, McCurdy K. Interventions to prevent child maltreatment. In: Doll L, Bonzo S, Sleet D, Mercy J, Haas EN, eds. <i>Handbook of Injury and Violence Prevention</i> . New York, NY: Springer Science & Business Media; 2007: 137-55.	Wrong study design: not a systematic review
66	Davis MK, Gidycz C. Child sexual abuse prevention programs: a meta-analysis. <i>J Clin Child Psychol</i> 2000; <b>29</b> (2): 257-65.	Wrong intervention: review focused on school-based sexual abuse prevention programs
67	Davis R, Weisburd D. Effects of second responder programs on repeat incidents of family abuse. <i>Campbell Systematic Reviews</i> 2008; <b>4</b> (15).	Wrong intervention: review of second responder programs
68	Dawson K, Berry M. Engaging families in child welfare services: an evidence-based approach to best practice. <i>Child Welfare</i> 2001; <b>81</b> (2): 293-317.	Wrong study design: not a systematic review
69	de Graaf I, Speetjens P, Smit F, de Wolff M, Tavecchio L. Effectiveness of the Triple P Positive Parenting Program on behavioral problems in children: a meta-analysis. <i>Behav Mod</i> 2008; <b>32</b> (5): 714-35.	Wrong participants: "In the current meta-analysis, we examine the effectiveness of Triple P interventions in the management of behavioral problems among children, aged 2 to 12 years old, by pooling the evidence from the pertinent studies."
70	de Oliveira M, Camacho L, Tedstone A. Extending breastfeeding duration through primary care: a systematic review of prenatal and postnatal interventions. <i>J Hum Lact</i> 2001; <b>17</b> (4): 326-43.	Wrong scope: not a review of parenting interventions
71	Deding M, Stage S, Ottesen M, Klint Jørgensen A-M. Shared living arrangements after divorce and the wellbeing of children [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2010.	Wrong publication type: title registration
72	Department of Family and Community Services. Parenting Information Project final report [electronic resource]. Canberra: Department of Family and Community Services, Commonwealth of Australia; 2004.	Wrong study design: not a systematic review
73	Dinkevich E, Ozuah P. Well-child care: effectiveness of current recommendations. <i>Clin Pediatr</i> 2002; <b>41</b> (4): 211-7.	Wrong study design: not a systematic review
74	Donovan C, Spence S. Prevention of childhood anxiety disorders. <i>Clinical Psychology Review</i> 2000; <b>20</b> (4): 509-31.	Wrong study design: not a systematic review
75	Dowell K, Ogles B. The effects of parent participation on child psychotherapy outcome: a meta-analytic review. <i>J Clin Child Adolesc Psychol</i> 2010; <b>39</b> (2): 151-62.	Wrong participants: participants were children undergoing psychotherapy (mean age: 12 years, with majority of studies in adolescents)

76	Dunford E. Understanding and treating postnatal depression: University of Oxford; 2013.	No access to full text: thesis
77	Dunst C, Trivette C, Hamby D. Research synthesis and meta-analysis of studies of family-centered practices: ERIC; 2008.	No access to full text: thesis
78	Elmquist D. A systematic review of parent-oriented programs to prevent children's use of alcohol and other drugs. <i>J Drug Educ</i> 1995; <b>25</b> (3): 251-79.	Wrong participants
79	Emshoff J, Price A. Prevention and intervention strategies with children of alcoholics. <i>Pediatrics</i> 1999; <b>103</b> (Suppl 2): 1112-21.	Wrong intervention: review not focused on parenting interventions; focused predominately on school-based interventions for children
80	Erickson S, Gerstle M, Feldstein S. Brief interventions and motivational interviewing with children, adolescents, and their parents in pediatric health care settings: a review. <i>Arch Pediatr Adolesc Med</i> 2005; <b>159</b> (12): 1173-80.	Wrong study design: not a systematic review
81	Fabiano G. Father participation in behavioral parent training for ADHD: review and recommendations for increasing inclusion and engagement. <i>J Fam Psychol</i> 2007; <b>21</b> (4): 683-93.	Wrong participants: participants were children with attention deficit hyperactivity disorder
82	Farrington D. The developmental evidence base: Prevention. In: Towl GJ, Crighton DA, eds. <i>Forensic Psychology</i> : John Wiley & Sons; 2010: 95-112.	Wrong study design: not a systematic review
83	Foley K. A comparison of parent-child interaction therapy and treatment as usual with families with a history of child abuse and neglect and intimate partner violence: West Virginia University; 2010.	Wrong study design: not a systematic review
84	Garmy P. Aktuellt kunskapsläge om spädbarnsmassage—systematisk litteraturöversikt 2006-2011 "Infant massage: state of knowledge - a systematic review." <i>Vård Nord</i> 2012; <b>32</b> (4): 29-33.	Wrong language: not in English
85	Gavidia-Payne S. Determining the effectiveness of parenting programs: getting there. <i>Victorian Parenting Centre News</i> 1999; <b>2</b> (1): 2-3.	No access to full text
86	Glenton C, Colvin CJ, Carlsen B, Swartz A, Lewin S, Noyes J, et al. Barriers and facilitators to the implementation of lay health worker programmes to improve access to maternal and child health: qualitative evidence synthesis. <i>Cochrane Database Syst Rev</i> 2013; <b>10</b> : CD010414.	Wrong study design: review focused on qualitative studies
87	Gomby D, Culross P, Behrman R. Home visiting: Recent program evaluations: Analysis and recommendations. <i>Future Child</i> 1999; <b>9</b> (1): 4-26.	Wrong study design: not a systematic review
88	Gorin S. Parental mental health problems: messages from research, policy and practice. <i>Child Soci</i> 2006; <b>20</b> (1): 78-9.	Wrong publication type: book review

89	Granger R, Cytron R. Teenage parent programs a synthesis of the long-term effects of the new chance demonstration, Ohio's learning, earning, and parenting program, and the teenage parent demonstration. <i>Evaluation Rev</i> 1999; <b>23</b> (2): 107-45.	Wrong study design: not a systematic review
90	Green C. Mother support groups: a review of experience in developing countries. Arlington, Virginia: Basic Support for Institutionalizing Child Survival (BASICS) Project; 1998.	Wrong study design: not a systematic review
91	Gunlicks M, Weissman M. Change in child psychopathology with improvement in parental depression: a systematic review. <i>J Am Acad Child Adolesc Psychiatr</i> 2008; <b>47</b> (4): 379-89.	Wrong intervention: review excluded parenting interventions: "Studies that included only treatments that targeted parenting or parent-child relationships were also excluded"
92	Guralnick M. Preventive interventions for preterm children: effectiveness and developmental mechanisms. <i>J Dev Behav Pediatr</i> 2012; <b>33</b> (4): 352-64.	Wrong study design: not a systematic review
93	Hammarberg K, Fisher J, Wynter K. Psychological and social aspects of pregnancy, childbirth and early parenting after assisted conception: a systematic review. <i>Hum Reprod Update</i> 2008; <b>14</b> (5): 395-414.	Wrong scope: not a review of parenting interventions
94	Harden A, Brunton G, Fletcher A, Oakley A. Teenage pregnancy and social disadvantage: systematic review integrating controlled trials and qualitative studies. <i>BMJ</i> 2009; <b>339</b> : b4254.	Wrong scope: not a review of parenting interventions (focused on preventing teenage pregnancy)
95	Harding K, Galano J, Martin J, Huntington L, Schellenbach C. Healthy Families America® Effectiveness: A comprehensive review of outcomes. <i>J Prev Interv Community</i> 2007; <b>34</b> (1-2): 149-79.	Wrong study design: not a systematic review
96	Harris-Waller J. Understanding parenting stress and enhancing adoptive parenting: University of Oxford; 2012.	No access to full text: thesis
97	Hastings R, Robertson J, Yasamy M. Interventions for children with pervasive developmental disorders in low and middle income countries. <i>J App Res Intellect Disabil</i> 2012; <b>25</b> (2): 119-34.	Wrong participants: participants were children with pervasive developmental disorders
98	Hawes D, Price M, Dadds M. Callous-unemotional traits and the treatment of conduct problems in childhood and adolescence: A comprehensive review. <i>Clin Child Fam Psychol Rev</i> 2014; <b>17</b> (3): 248-67.	Wrong participants: participants were children with conduct problems (all older than 2 years)
99	Hayes S, Watson S. The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. <i>J Autism Dev Disord</i> 2013; <b>43</b> (3): 629-42.	Wrong scope: not a review of parenting interventions



100	Research and Training Center for Family Support and Children's Mental Health. Do Fathers Benefit from Parent Training Programs? Data Trends #155. Portland; 2008.	Wrong study design: not a systematic review
101	Heidemann G, Soydan H, Xie B. Re-entry programs for formerly incarcerated women [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2008.	Wrong publication type: protocol
102	Hendricks AK, Balakrishnan R, Commission F. Review of parenting programmes: a report by the Families Commission. Wellington, New Zealand: Families Commission; 2005.	Wrong study design: not a systematic review
103	Hobbs K. An investigation into the relationships between psychological functioning, engagement with obstetric services, and prenatal attachment: University of Sheffield; 2010.	Wrong scope: not a review of parenting interventions
104	Hogan B, Linden W, Najarian B. Social support interventions: Do they work? <i>Clin Psychol Rev</i> 2002; <b>22</b> (3): 381-440.	Wrong intervention
105	Hogue A, Liddle H. Family-based preventive intervention: an approach to preventing substance use and antisocial behavior. <i>Am J Orthopsychiatry</i> 1999; <b>69</b> (3): 278-93.	Wrong study design: not a systematic review
106	Holopainen A, Hakulinen-Viitanen T. New parents' experiences of postpartum depression-a systematic review of qualitative evidence. <i>JBIM Database Syst Rev Implement Rep</i> 2012; <b>10</b> (56 Suppl): 249-58.	Wrong publication type: protocol
107	Holzer P, Higgins J, Bromfield L, Richardson N, Higgins D. The effectiveness of parent education and home visiting child maltreatment prevention programs: Australian Institute of Family Studies; 2006.	Wrong study design: not a systematic review
108	Hosley C. Early childhood education programs: a review of program models and effectiveness: Wilder Research Center; 2000.	Wrong study design: not a systematic review
109	Iriarte Roteta A, Carrion Torre M. [Experiences of the parents of extremely premature infants on the Neonatal Intensive Care Unit: systematic review of the qualitative evidence.]. [Experiencias de los padres de grandes prematuros en la Unidad de Cuidado Intensivo Neonatal: revision sistematica de la evidencia cualitativa. <i>Metas de Enfermeria</i> 2013; <b>16</b> (2): 20-5.	Wrong language: not in English
110	Ivec M. A necessary engagement: an international review of parent and family engagement in child protection. Hobart, Tasmania: Social Action and Research Centre, Anglicare Tasmania; 2013.	Wrong study design: not a systematic review

111	James A, James G, Cowdrey F, Soler A, Choke A. Cognitive behavioural therapy for anxiety disorders in children and adolescents. <i>Cochrane Database Syst Rev</i> 2013; <b>6</b> : CD004690.	Wrong participants: participants were "Children and adolescents older than four years and younger than 19 years."
112	Jané-Llopis E, Anderson P. Mental health promotion and mental disorder prevention: a policy for Europe. Netherlands: Radboud University Nijmegen; 2005.	Wrong study design: not a systematic review
113	Kalisiak B, Spitznagle T. What effect does an exercise program for healthy pregnant women have on the mother, fetus, and child? <i>PM R</i> 2009; <b>1</b> (3): 261-6.	Wrong intervention
114	Kamiyama T, Ueno A, Noro F. Parenting interventions for parents of children with developmental disabilities: a review and future directions. <i>Jpn Spec Educ</i> 2011; <b>49</b> (4): 361-75.	Wrong language: not in English
115	Kane G, Wood V, Barlow J. Parenting programmes: a systematic review and synthesis of qualitative research. <i>Child Care Health Dev</i> 2007; <b>33</b> (6): 784-93.	Wrong study design: review focused on qualitative studies
116	Kanesathasan A, McCleary-Sills J, Vujovic M, Brakarsh J, Dlamini K, Namisango E, et al. Equipping parents and health providers to address the psychological and social challenges of caring for children living with HIV in Africa. Arlington, Virginia: USAID; 2011.	Wrong study design: not a systematic review
117	Karreman A, van Tuijl C, van Aken M, Deković M. Parenting and self-regulation in preschoolers: a meta-analysis. <i>Infant Child Dev</i> 2006; <b>15</b> (6): 561-79.	Wrong participants: participants were children 2 to 5 years
118	Kearvell H, Grant J. Getting connected: how nurses can support mother/infant attachment in the neonatal intensive care unit. <i>Aust J Adv Nurs</i> 2010; <b>27</b> (3): 75-82.	Wrong study design: review focused on qualitative studies
119	Keeley-Jones K. Fathers' experiences of maternal depression in the postnatal period: connecting with the child in the middle: University of Leicester; 2012.	Wrong scope: not a review of parenting interventions
120	Keller G, Gottlieb D. Reducing major depression in children at high risk: Opportunities for prevention. <i>Int J Psychiatry Med</i> 2012; <b>44</b> (3): 271-90.	No access to full text
121	Kendrick D, Barlow J, Hampshire A, Stewart-Brown S, Polnay L. Parenting interventions and the prevention of unintentional injuries in childhood: systematic review and meta-analysis. <i>Child Care Health Dev</i> 2008; <b>34</b> (5): 682-95.	Duplicate publication: based on a Cochrane review (classified as 'Relevant')
122	Kendrick D, Smith S, Sutton A, Watson M, Coupland C, Mulvaney C, et al. The effect of education and safety equipment on poisoning prevention practices and poisoning: systematic review, meta-analysis and meta-regression. <i>Arch Dis Child</i> 2008; <b>93</b> (7): 599-608.	Duplicate publication: based on a Cochrane review (classified as 'Relevant')
123	Kennedy A, Pigott T. Social competence interventions for preschool-aged children with special needs in general and inclusive early childhood settings [title registration for a systematic review]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2012.	Wrong publication type: title registration

124	King E, De Silva M, Stein A, Patel V. Interventions for improving the psychosocial well-being of children affected by HIV and AIDS. <i>Cochrane Database Syst Rev</i> 2009; <b>2</b> : CD006733.	Wrong intervention: not a review of parenting interventions; no included studies
125	King G, Currie M, Petersen P. Child and parent engagement in the mental health intervention process: a motivational framework. <i>Child Adolesc Ment Health</i> 2014; <b>19</b> (1): 2-8.	Wrong study design: not a systematic review
126	Kingsley K, Mailloux Z. Evidence for the effectiveness of different service delivery models in early intervention services. <i>Am J Occup Ther</i> 2013; <b>67</b> (4): 431-6.	No access to full text
127	Kiselica M, Kiselica A. The complicated worlds of adolescent fathers: Implications for clinical practice, public policy, and research. <i>Psychol Men Masc</i> 2014; <b>15</b> (3): 260-74.	Wrong study design: not a systematic review
128	Klevens J. Prevention of inflicted childhood neurotrauma: what we know, what we don't, and what we need to know, In: Reece R, Nicholson C, editors. <i>Inflicted Childhood Neurotrauma</i> ; 2002; Elk Grove Village, IL: American Academy of Pediatrics; 2002: 269-79.	Wrong study design: not a systematic review
129	Koerting J, Smith E, Knowles MM, Latter S, Eley H, McCann DC, et al. Barriers to, and facilitators of parenting programmes for childhood behaviour problems: a qualitative synthesis of studies of parents' and professionals' perceptions. <i>Eur Child Adolesc Psychiatry</i> 2013; <b>22</b> (11): 653-70.	Wrong study design: review focused on qualitative studies
130	Korja R, Latva R, Lehtonen L. The effects of preterm birth on mother–infant interaction and attachment during the infant's first two years. <i>Acta Obstet Gynecol Scand</i> 2012; <b>91</b> (2): 164-73.	Wrong scope: not a review of parenting interventions
131	Kristjansson E, Francis DK, Liberato S, Jandu MB, Welch VA, Batal M, et al. Feeding interventions for improving the physical and psychosocial health of disadvantaged children aged three months to five years: protocol for a systematic review. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2013.	Wrong publication type: protocol
132	Krugman S, Lane W, Walsh C. Update on child abuse prevention. <i>Curr Opin Pediatr</i> 2007; <b>19</b> (6): 711-8.	Wrong study design: not a systematic review
133	Lagerberg D. Secondary prevention in child health: effects of psychological intervention, particularly home visitation, on children's development and other outcome variables. <i>Acta Paediatrica</i> 2000; <b>89</b> (s434): 43-52.	Wrong study design: not a systematic review
134	Lambert V, Zubrick S, Silburn S. Prevention and intervention in parenting: a policy and literature review - Reviewing the evidence. Perth, W.A: TVW Telethon Institute for Child Health Research Family and Children's Services; 1999.	No access to full text
135	Law J, Garrett Z, Nye C. The efficacy of treatment for children with developmental speech and language delay/disorder - a meta-analysis. <i>J Speech Lang Hear Res</i> 2004; <b>47</b> (4): 924-43.	Wrong participants: participants were children with language disorders (all over 2 years on average)

136	Lee C, Horvath C, Hunsley J. Does it work in the real world? The effectiveness of treatments for psychological problems in children and adolescents. <i>Prof Psychol Res Pract</i> 2013; <b>44</b> (2): 81-8.	Wrong participants: participants were children and adolescents with psychological problems (all studies are in children 2 years or older)
137	Lee PC, Niew WI, Yang HJ, Chen VCH, Lin KC. A meta-analysis of behavioral parent training for children with attention deficit hyperactivity disorder. <i>Res Dev Disabil</i> 2012; <b>33</b> (6): 2040-9.	Wrong participants: participants were children with attention deficit hyperactivity disorder
138	Leslie J, Gunn L, Car J, Felix L, Knowles S, Head R, et al. Effects of behaviour change communication strategies embedded in social marketing programs on health behaviours and related health and welfare outcomes in low and middle income countries. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2013.	Wrong publication type: title registration
139	Liberto T. Screening for depression and help-seeking in postpartum women during well-baby pediatric visits: an integrated review. <i>J Pediatr Health Care</i> 2012; <b>26</b> (2): 109-17.	Wrong scope: not a review of parenting interventions
140	Licence K. Promoting and protecting the health of children and young people. <i>Child Care Health Dev</i> 2004; <b>30</b> (6): 623-35.	Wrong study design: not a systematic review
141	Lieberman K, Le HN, Perry DF. Systematic review of perinatal depression interventions for teen mothers. <i>Arch Womens Ment Health</i> 2013; <b>16</b> : S19.	Wrong publication type: abstract only
142	Logsdon MC, Davis DW. Social and professional support for pregnant and parenting women. <i>MCN Am J Matern Child Nurs</i> 2003; <b>28</b> (6): 371-6.	Wrong study design: not a systematic review
143	Long C. 0-5 early intervention: home visits and parenting centres. Children, Young People and Their Communities: The Future is in our Hands 27-28 March 2001 at Launceston Tramsheds Complex, Launceston, Tasmania; 2001.	Wrong publication type: conference presentation
144	Lu M, Tache V, Alexander G, Kotelchuck M, Halfon N. Preventing low birth weight: is prenatal care the answer? <i>J Matern Fetal Neonatal Med</i> 2003; <b>13</b> (6): 362-80.	Wrong scope: not a review of parenting interventions
145	Macdonald G, Bennett C, Dennis J, Coren E, Patterson J, Astin M, et al. Home-based support for disadvantaged teenage mothers. <i>Cochrane Database Syst Rev</i> 2007; <b>3</b> : CD006723	Wrong publication type: withdrawn Cochrane review
146	Macdonald G, Higgins JP, Ramchandani P, Valentine JC, Bronger LP, Klein P, et al. Cognitive-behavioural interventions for children who have been sexually abused. <i>Cochrane Database Syst Rev</i> 2012; <b>5</b> : CD001930	Wrong intervention: intervention was delivered to children (i.e. not a parenting intervention); no included studies in infants <12 months on average at study/intervention onset
147	MacDonald G. Efficacy of group interventions with seriously mentally ill parents: a literature review. In: Lindsay J, Turcotte D, Hopmeyer E, eds. Crossing Boundaries and Developing Alliances Through Group Work. New York: Haworth Press; 2003: 167-92.	Wrong study design: not a systematic review

148	MacIntyre D, Carr A. Prevention of child sexual abuse: Implications of programme evaluation research. <i>Child Abuse Rev</i> 2000; <b>9</b> (3): 183-99.	Wrong participants: "Children targeted for prevention programmes ranged from pre-schoolers to 6th grade"
149	MacMillan HL, Wathen CN, CTFPHC. Prevention and treatment of violence against women: systematic review and recommendations. London, Ontario: Canadian Task Force on Preventive Health Care; 2001.	Wrong scope: not a review of parenting interventions
150	MacVicar S, Kirkpatrick P. The effectiveness and maternal satisfaction of breast-feeding support for women from disadvantaged groups: a comprehensive systematic review. <i>JBI Database Syst Rev Implement Rep</i> 2014; <b>12</b> (6): 420-76.	Wrong study design: review focused on qualitative studies
151	Mahoney G, Boyce G, Fewell R, Spiker D, Wheeden CA. The relationship of parent-child interaction to the effectiveness of early intervention services for at-risk children and children with disabilities. <i>Topics Early Child Spec Educ</i> 1998; <b>18</b> (1): 5-17.	Wrong study design: not a systematic review
152	Masilo G. Support program to mothers of sexually abused children in North West Province in South Africa: a literature review. <i>J Human Ecol</i> 2011; <b>36</b> (1): 13-21.	Wrong study design: review focused on predominately qualitative studies
153	Maughan D, Christiansen E, Jenson W, Olympia D, Clark E. Behavioral parent training as a treatment for externalizing behaviors and disruptive behavior disorders: a meta-analysis. <i>School Psychol Rev</i> 2005; <b>34</b> (3): 267-86.	Wrong participants: participants were children 3 to 16 years
154	Maxwell C, Aggleton P, Warwick I, Yankah E, Hill V, Mehmedbegovic D. Supporting children's emotional wellbeing and mental health in England: a review. <i>Health Educ</i> 2008; <b>108</b> (4): 272-86.	Wrong participants: participants were children 3 to 18 years
155	McAllister F, Burgess A, Kato J, Barker G. Fatherhood: Parenting Programmes and Policy - a Critical Review of Best Practice. London/Washington D.C.: Fatherhood Institute Promundo MenCare; 2012.	Wrong study design: not a systematic review
156	McIntosh J, Deacon-Wood H. Education and group interventions for separated parents in conflict: a review of research and leading programs. Melbourne, Victoria: La Trobe University; 2002.	No access to full text
157	Melvin C, Dolan-Mullen P, Windsor R, Whiteside Jr. H, Goldenberg R. Recommended cessation counselling for pregnant women who smoke: a review of the evidence. <i>Tobacco Control</i> 2000; <b>9</b> (Suppl 3): III80-4.	Wrong scope: recommendations for smoking cessation based on a systematic review
158	Mengistu T, Tafere T. Effect of antenatal care on institutional delivery in developing countries: a systematic review. <i>JBI Database Syst Rev Implement Rep</i> 2011; <b>9</b> (Suppl 64): 440-54.	Wrong intervention
159	Mentore J. The effectiveness of early intervention with young children "at risk": a decade in review: Fordham University; 1999.	No access to full text: thesis

160	Miah R. Does transitional care improve neonatal and maternal health outcomes? A systematic review. <i>Br J Midwifery</i> 2013; <b>21</b> (9): 634-46.	Wrong study design: review of audit studies/reports
161	Michelson D, Davenport C, Dretzke J, Barlow J, Day C. Do evidence-based interventions work when tested in the "real world?" A systematic review and meta-analysis of parent management training for the treatment of child disruptive behavior. <i>Clin Child Fam Psychol Rev</i> 2013; <b>16</b> (1): 18-34.	Wrong participants: "The population included parents/carers with an index child aged from 2 to 12 years"
162	Mildon R, Polimeni M. Parenting in the early years: effectiveness of parenting support programs for Indigenous families: Australian Institute of Family Studies; 2012.	Wrong study design: not a systematic review
163	Miller S, Maguire LK, Macdonald G. Home based child development interventions for pre-school children from socially disadvantaged families. <i>Campbell Syst Rev</i> 2012; <b>1</b> .	Duplicate publication: duplicate (co-registration) of Cochrane review (classified as 'Included')
164	Mitchell-Box K, Braun K. Impact of male-partner-focused interventions on breastfeeding initiation, exclusivity, and continuation. <i>J Hum Lact</i> 2013; <b>29</b> (4): 473-9.	Wrong intervention
165	Molyneaux E, Howard L, McGeown H, Karia A, Trevillion K. Antidepressant treatment for postnatal depression. <i>Adv Psychiatr Treat</i> 2014; <b>20</b> (6): 368.	Wrong intervention: focused on the pharmacological management of postnatal depression
166	Montoya A, Colom F, Ferrin M. Is psychoeducation for parents and teachers of children and adolescents with ADHD efficacious? A systematic literature review. <i>Eur Psychiatry</i> 2011; <b>26</b> (3): 166-75.	Wrong participants: participants were children with attention deficit hyperactivity disorder
167	Moran P, Ghate D, Van Der Merwe A, Bureau PR. What works in parenting support? A review of the international evidence. Nottingham, UK: Department for Education and Skills; 2004.	Wrong study design: not a systematic review
168	Mullen P. Maternal smoking during pregnancy and evidence-based intervention to promote cessation. <i>Prim Care</i> 1999; <b>26</b> (3): 577-89.	Wrong study design: not a systematic review
169	Munns A, Hegney D, Walker R. Effectiveness and experiences of families participating in peer led parenting support programs delivered as home visiting programs and the meaning they attribute to these support programs: a systematic review protocol. <i>JBI Database Syst Rev Implement Rep</i> 2014; <b>12</b> (3): 1-13.	Wrong publication type: protocol
170	Murray S, Hunter B, Bisht R, Ensor T, Bick D. Demand-side financing measures to increase maternal health service utilisation and improve health outcomes: a systematic review of evidence from low-and middle-income countries. <i>JBI Database Syst Rev Implement Rep</i> 2012; <b>10</b> (58): 4165-567.	Wrong intervention
171	Mytton J, Ingram J, Manns S, Thomas J. Facilitators and barriers to engagement in parenting programs a qualitative systematic review. <i>Health Educ Behav</i> 2014; <b>41</b> (2): 127-37.	Wrong study design: review focused on qualitative studies

172	National Collaborating Centre for Primary Care. Obesity: Guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. London: NICE; 2006.	Wrong scope: guideline focused on obesity
173	National Collaborating Centre for Primary Care. Postnatal care: routine postnatal care of women and their babies. London: NICE, 2006.	Wrong study design: not a systematic review
174	National Institute of Clinical Excellence. Breastfeeding for longer: what works? London: NICE; 2005.	Wrong intervention
175	National Institute of Clinical Excellence Antenatal and Postnatal Mental Health. London: NICE; 2007.	Wrong study design: not a systematic review
176	Nixon R. Treatment of behavior problems in preschoolers: A review of parent training programs. <i>Clin Psychol Rev</i> 2002; <b>22</b> (4): 525-46.	Wrong study design: not a systematic review
177	O'Brien M, Daley D. Self-help parenting interventions for childhood behaviour disorders: a review of the evidence. <i>Child Care Health Dev</i> 2011; <b>37</b> (5): 623-37.	Wrong participants: participants were children 3 to 12 years
178	O'Kearney R, Anstey K, von Sanden C, Hunt A. Behavioural and cognitive behavioural therapy for obsessive compulsive disorder in children and adolescents. <i>Cochrane Database Syst Rev</i> 2006; <b>4</b> : CD004856	Wrong intervention: intervention was delivered to children (i.e. not a parenting intervention); no included studies in children less than 12 months on average at study/intervention onset
179	Olhaberry M, Escobar M, San Cristobal P, Santelices MP, Farkas C, Rojas G, et al. Psychological perinatal interventions in maternal depression and mother-child bond: A systematic review. <i>Terapia Psicologica</i> 2013; <b>31</b> (2): 249-61.	Wrong language: not in English
180	Oono I, Honey E, McConachie H. Parent-mediated early intervention for young children with autism spectrum disorders (ASD). <i>Evid Based Child Health</i> 2013; <b>8</b> (6): 2380-479.	Wrong participants: "Parents of children with ASD, aged between one year and six years eleven months"
181	Oyserman D, Mowbray C, Zemencuk J. Resources and supports for mothers with severe mental illness. <i>Health Soc Work</i> 1994; <b>19</b> (2): 132-42.	Wrong study design: not a systematic review
182	Parab C, Cooper C, Woolfenden S, Piper S. Specialist home-based nursing services for children with acute and chronic illnesses. <i>Cochrane Database Syst Rev</i> 2013; <b>6</b> : CD004383	Wrong intervention
183	Park E, Schultz J, Tudiver F, Campbell T, Becker L. Enhancing partner support to improve smoking cessation. <i>Cochrane Database Syst Rev</i> 2004; <b>3</b> : CD002928	Wrong intervention
184	Perrone Hoyer P. Prenatal and parenting programs for adolescent mothers. <i>Ann Rev Nurs Res</i> 1998; <b>16</b> (1): 221-49.	Wrong study design: not a systematic review
185	Petch J, Halford WK. Psycho-education to enhance couples' transition to parenthood. <i>Clin Psychol Rev</i> 2008; <b>28</b> (7): 1125-37.	Wrong study design: not a systematic review

186	Peters R, Barlow J. Systematic review of instruments designed to predict child maltreatment during the antenatal and postnatal periods. <i>Child Abuse Rev</i> 2003; <b>12</b> (6): 416-39.	Wrong scope: not a review of parenting interventions
187	Phillips A, Wazny K, Baxter JA, Perumal N, Zlotkin S, Bhutta Z. A systematic review of nutrition-specific and nutrition-sensitive risk factors of linear growth among children and adolescents (0 to 19 years) in low and middle-income countries [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2014.	Wrong publication type: title registration
188	Piquero A, Farrington D, Welsh B, Tremblay R, Jennings W. Effects of early family/parent training programs on antisocial behaviour & delinquency. A systematic review. US Department of Justice; 2008.	Duplicate publication: book chapter version of Piquero 2008 review (classified as 'Included')
189	Piquero A. Family programs implemented up to age 5: effectiveness in reducing later antisocial behavior/delinquency. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; date: unknown.	Wrong publication type: title registration
190	Probst P. Literatur-Review zur Validität des präventiven Elterntrainings Stepping Stones Triple P [Literature review on the validity of the Stepping Stones Triple P Program]. <i>Praxis der Kinderpsychol Kinderpsychiatr</i> 2009; <b>58</b> (5): 351-67.	Wrong language: not in English
191	Racz S, McMahon R. The relationship between parental knowledge and monitoring and child and adolescent conduct problems: A 10-year update. <i>Clin Child Fam Psychol Rev</i> 2011; <b>14</b> (4): 377-98	Wrong scope: not a review of parenting interventions
192	Ramsay J, Carter Y, Davidson L, Dunne D, Eldridge S, Feder G, et al. Advocacy interventions to reduce or eliminate violence and promote the physical and psychosocial well-being of women who experience intimate partner abuse. <i>Cochrane Database Syst Rev</i> 2009; <b>3</b> : CD005043.	Wrong intervention
193	Ramsay J, Richardson J, Carter Y, Davidson L, Feder G. Should health professionals screen women for domestic violence? Systematic review. <i>BMJ</i> 2002; <b>325</b> (7359): 314.	Wrong scope: not a review of parenting interventions
194	Reichow B, Barton E, Boyd B, Hume K. Early intensive behavioral intervention (EIBI) for young children with autism spectrum disorders (ASD). <i>Cochrane Database Syst Rev</i> 2012; <b>10</b> : CD009260.	Wrong participants: participants were children with autism
195	Reichow B, Barton E, Boyd B, Hume K. Early intensive behavioral intervention (EIBI) for young children with autism spectrum disorders (ASD): a systematic review. <i>Campbell Syst Rev</i> 2014; <b>10</b> (9).	Wrong participants: participants were children with autism
196	Reichow B, Volkmar F. Social skills interventions for individuals with autism: Evaluation for evidence-based practices within a best evidence synthesis framework. <i>J Autism Dev Disord</i> 2010; <b>40</b> (2): 149-66.	Wrong participants: participants were children with autism



197	Renfrew MJ, Lang S, Martin L, Woolridge M. Interventions for influencing sleep patterns in exclusively breastfed infants. <i>Cochrane Database Syst Rev</i> 2000; <b>2</b> : CD000113.	Wrong publication type: withdrawn Cochrane review
198	Riitano D, Pearson A. The effectiveness of interventions designed to improve academic outcomes in children and adolescents in out-of-home care: a systematic review protocol. <i>JB I Database Syst Rev Implement Rep</i> 2014; <b>12</b> (1): 13-22.	Wrong publication type: protocol
199	Roberts M, Kaiser A. The effectiveness of parent-implemented language interventions: A meta-analysis. <i>Am Jf Speech Lang Pathol</i> 2011; <b>20</b> (3): 180-99	Wrong participants: participants were children 18 to 60 months
200	Roberts S. Carer-child relationships and externalising behaviour in childhood: Bangor University; 2012.	Wrong study design: not a systematic review
201	Ross K. Directors' perceptions of parent involvement in the Early Head Start and Sure Start early intervention programs: a cross-Atlantic study: University of Oxford; 2010.	Wrong study design: not a systematic review
202	Rubak S, Sandbæk A, Lauritzen T, Christensen B. Motivational interviewing: a systematic review and meta-analysis. <i>Br J Gen Pract</i> 2005; <b>55</b> (513): 305-12.	Wrong intervention
203	Rudolf M, Logan S. What is the long term outcome for children who fail to thrive? A systematic review. <i>Arch Dis Child</i> 2005; <b>90</b> (9): 925-31.	Wrong scope: not a review of parenting interventions
204	Ruedinger E, Cox J. Adolescent childbearing: consequences and interventions. <i>Curr Opin Pediatr</i> 2012; <b>24</b> (4): 446-52.	Wrong study design: not a systematic review
205	Saini M, Cook C, Issahaku P, Shlonsky A. Mediation for dispute resolution and improved outcomes among children and families involved with child protection services [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2009.	Wrong publication type: title registration
206	Saint-Georges C, Chetouani M, Cassel R, Apicella F, Mahdhaoui A, Muratori F, et al. Motherese in interaction: at the cross-road of emotion and cognition?(A systematic review). <i>PLoS One</i> 2013; <b>8</b> (10): e78103.	Wrong scope: not a review of parenting interventions
207	Saliba M, Kowald M. The relationship between parents' responsiveness to their infant's early communication and its subsequent growth, within the current societal context: A comprehensive systematic review. <i>JB I Database Syst Rev Implement Rep</i> 2011; <b>9</b> (64 Suppl): 108-23.	Wrong publication type: protocol
208	Sanders M. Parenting interventions and the prevention of serious mental health problems in children. <i>Med J Aust</i> 2002; <b>177</b> (7): S87.	Wrong study design: not a systematic review
209	Sarkadi A, Kristiansson R, Oberklaid F, Bremberg S. Fathers' involvement and children's developmental outcomes: a systematic review of longitudinal studies. <i>Acta Paediatrica</i> 2008; <b>97</b> (2): 153-8.	Wrong scope: not a review of parenting interventions

210	Schappin R, Wijnroks L, Uniken VM, Jongmans M. Rethinking stress in parents of preterm infants: a meta-analysis. <i>PLoS One</i> 2013; <b>8</b> (2): e54992.	Wrong scope: not a review of parenting interventions
211	Scher L, Maynard R, Stagner M. Interventions intended to reduce pregnancy-related outcomes among adolescents: a systematic review. <i>Campbell Syst Rev</i> 2006; <b>2</b> (12).	Wrong intervention
212	Schmied V, Beake S, Sheehan A, McCourt C, Dykes F. A meta-synthesis of women's perceptions and experiences of breastfeeding support. <i>JBI Database Syst Rev Implement Rep</i> 2009; <b>7</b> (14): 583-614.	Wrong study design: review focused on qualitative studies, surveys etc.
213	Schwarz D, O'Sullivan A. State of the art reviews: Intervening to improve outcomes for adolescent mothers and their children. <i>Am J Lifestyle Med</i> 2007; <b>1</b> (6): 482-9.	Wrong study design: not a systematic review
214	Scope A, Booth A, Sutcliffe P. Women's perceptions and experiences of group cognitive behaviour therapy and other group interventions for postnatal depression: a qualitative synthesis. <i>J Adv Nurs</i> 2012; <b>68</b> (9): 1909-19.	Wrong study design: review focused on qualitative studies
215	Shah PS, Gouin K. Maternal cocaine use and effects of intervention for reducing or eliminating cocaine use on pregnancy outcomes: A systematic review and meta-analysis. <i>Paediatr Child Health</i> 2010; <b>15</b> : 24A.	Wrong publication type: abstract only
216	Shlonsky A, Schumaker K, Cook C, Crampton D, Saini M, Backe-Hansen E, et al. Family group decision making for children at risk of abuse and neglect [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2009.	Wrong publication type: protocol
217	Shlonsky A, Macvean M, Mildon R, Devine B, Barlow J. Individual and group-based parenting programmes for improving psychosocial outcomes for indigenous parents and their children: a systematic review [title registration for a systematic review]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2013.	Wrong publication type: title registration
218	Aron Shlonsky, Michelle Macvean, Robyn Mildon, Ben Devine, Jane Barlow, Lea Tufford, et al. Mindfulness based parenting programmes for improving psychosocial outcomes in children from birth to age 18 and their parents: a systematic review [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2014.	Wrong publication type: title registration
219	Shulver W. Parenting groups as sources of social capital: their patterns of use and outcomes for Aboriginal and non-Aboriginal mothers of young children: Flinders University; 2011.	Wrong study design: not a systematic review
220	Sigal A, Sandler I, Wolchik S, Braver S. Do parent education programs promote healthy postdivorce parenting? Critical distinctions and a review of the evidence. <i>Fam Court Rev</i> 2011; <b>49</b> (1): 120-39.	Wrong study design: not a systematic review

221	Sikorski C, Lakhanpaul M, Costello A, Heys M. A systematic review: 'Can postnatal women's groups improve health outcomes for women and children in high-income countries?'. <i>Arch Dis Child</i> 2014; <b>99</b> (Suppl 1): A200-A.	Wrong publication type: abstract only
222	Singleton JL. Parent-infant interaction interventions: a meta-analysis: University of Northern Colorado; 2004.	No access to full text: thesis
223	Sloan N, Ahmed S, Islam M, Mitra S. Experiences with community kangaroo mother care in very low-income settings. <i>Curr Womens Health Rev</i> 2011; <b>7</b> (3): 310-6.	Wrong study design: not a systematic review
224	Sloat E, Letourneau N, Brannen CL, Thompson K, Uhrig E, Veldhuyzen van Zanten SCM, et al. Parent mediated reading interventions for children aged birth to 48 months. <i>Cochrane Database Syst Rev</i> 2009; <b>4</b> : CD007850.	Wrong publication type: withdrawn Cochrane protocol
225	Smithson J, Garside R, Pearson M. Barriers to, and facilitators of, the prevention of unintentional injury in children in the home: a systematic review and synthesis of qualitative research. <i>Inj Prev</i> 2011; <b>17</b> (2): 119-26.	Wrong study design: review focused on qualitative studies
226	Sougstad JR. Transforming everyday practices using scientific evidence: meta-analysis of a parent training program: Michigan State University; 2010.	No access to full text: thesis
227	Spier E, Britto P, Pigott T, Kidron Y, Lane J, Roehlkepartain E, et al. Parental, familial, and community support interventions to improve children's literacy in developing countries: a systematic review [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2014.	Wrong publication type: protocol
228	Spivak A, Lipsey M, Farran D, Polanin J. Instructional strategies for enhancing prosocial behavior in children and youth: a systematic review and meta-analysis [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2014.	Wrong publication type: title registration
229	Sreeramareddy C, Sathyanarayana TN, Anchala R, Harsha Kumar HN. Family and community interventions under IMCI strategy for reduction of neonatal and under-fives mortality among children in low- and middle-income countries: a systematic review [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2013.	Wrong publication type: title registration
230	St James-Roberts I. Helping parents to manage infant crying and sleeping: a review of the evidence and its implications for services. <i>Child Abuse Rev</i> 2007; <b>16</b> (1): 47-69.	Wrong study design: not a systematic review
231	Stagner M, Ehrle J, Kortenkamp K, Reardon-Anderson J. Systematic review of the impact of marriage and relationship programs [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2009.	Wrong publication type: protocol
232	Statham J. Effective services to support children in special circumstances. <i>Child Care Health Dev</i> 2004; <b>30</b> (6): 589-98.	Wrong study design: not a systematic review

233	Stelfox S, Nagle C, Kent B. The experience of new mothers who are separated from their newborn infants: a qualitative systematic review. <i>JBI Database Syst Rev Implement Rep</i> 2011; <b>9</b> (16 Suppl): 81-95.	Wrong publication type: protocol
234	Stevens M. The cost-effectiveness of UK parenting programmes for preventing children's behaviour problems—a review of the evidence. <i>Child Fam Soc Work</i> 2014; <b>19</b> (1): 109-18.	Wrong study design: not a systematic review
235	Strauss K, Mancini F, Fava L, Group S. Parent inclusion in early intensive behavior interventions for young children with ASD: a synthesis of meta-analyses from 2009 to 2011. <i>Res Dev Disabil</i> 2013; <b>34</b> (9): 2967-85.	Wrong participants: participants were children with autism
236	Sword W, Jack S, Niccols A, Milligan K, Henderson J, Thabane L. Integrated programs for women with substance use issues and their children: a qualitative meta-synthesis of processes and outcomes. <i>Harm Reduct J</i> 2009; <b>6</b> (1): 32.	Wrong study design: review focused on qualitative studies
237	Tan K, Lai NM. Telemedicine for the support of parents of high-risk newborn infants. <i>Cochrane Database Syst Rev</i> 2012; <b>6</b> : CD006818.	Wrong intervention
238	Tarrant L. Programmes which support parents with infants and young children in Aotearoa/New Zealand. <i>Childrenz Issues</i> 2002; <b>6</b> (2): 28-9.	Wrong study design: not a systematic review
239	Tarver J, Daley D, Lockwood J, Sayal K. Are self-directed parenting interventions sufficient for externalising behaviour problems in childhood? A systematic review and meta-analysis. <i>Eur Child Adolesc Psychiatry</i> 2014; <b>23</b> (12): 1123-37.	Wrong participants: participants were children 3 to 12 years
240	Taubner S, Munder T, Unger A, Wolter S. [Effectiveness of early prevention programs in Germany: a systematic review and a meta-analysis]. <i>Prax Kinderpsychol Kinderpsychiatr</i> 2013; <b>62</b> (8): 598-619.	Wrong language: not in English
241	Taylor J. A systematic review of the links between parenting, social factors and failure to thrive - assessing heterogeneous evidence. Dundee, Scotland: Dundee University; 2000.	Wrong scope: not a review of parenting interventions
242	Thulin U, Svirsky L, Serlachius E, Andersson G, Öst LG. The effect of parent involvement in the treatment of anxiety disorders in children: a meta-analysis. <i>Cogn Behav Ther</i> 2014; <b>43</b> (3): 185-200.	Wrong participants: participants were children with anxiety (over 5 years of age in all studies)
243	Tully L. What makes parenting programs effective? An overview of recent research. Ashfield, NSW: Centre for Parenting and Research; 2009.	Wrong study design: not a systematic review
244	Turner W, Dennis J, Macdonald G. Behavioural and cognitive behavioural training interventions for assisting foster carers in the management of difficult behaviour: a systematic review. <i>Campbell Syst Rev</i> 2007; <b>3</b> .	Duplicate publication: duplicate (co-registration) of Cochrane review (classified as 'Relevant')

245	Turner W, Macdonald G, Dennis J. Cognitive-behavioural training interventions for assisting foster carers in the management of difficult behaviour. <i>Cochrane Database Syst Rev</i> 2005; <b>1</b> : CD003760.	Other version: old version of Cochrane review (classified as 'Relevant')
246	Underdown A, Barlow J, Chung V, Stewart-Brown S. Massage intervention for promoting mental and physical health in infants aged under six months. <i>Cochrane Database Syst Rev</i> 2006; <b>4</b> : CD005038.	Other version: old version of Cochrane review (classified as 'Included')
247	VACCHO Aboriginal Early Years Sub-Committee. Aboriginal early years health : VACCHO Scoping Project report : zero to eight years of age. Melbourne: Victorian Aboriginal Community Controlled Health Organisation; 2014.	Wrong study design: not a systematic review
248	Valentine K, Katz I. Cost effectiveness of early intervention programs for Queensland. Brisbane, Queensland: Social Policy Research Centre, UNSW; 2007.	Wrong study design: not a systematic review
249	van den Dries L, Juffer F, van IJzendoorn M, Bakermans-Kranenburg M. Fostering security? A meta-analysis of attachment in adopted children. <i>Child Youth Serv Rev</i> 2009; <b>31</b> (3): 410-21.	Wrong scope: not a review of parenting interventions
250	van Urk F, Brown T, Waller R, Mayo-Wilson E. Centre-based day care for children under five in high-income countries. <i>Cochrane Database Syst Rev</i> 2015; <b>5</b> : CD010544.	Wrong publication type: protocol
251	van Urk F, Brown T, Waller R, Mayo-Wilson E. Centre-based day care for children younger than five years of age in high-income countries. <i>Cochrane Database Syst Rev</i> 2014; <b>9</b> : CD010544.	Wrong intervention: review excluded interventions with a parenting component; no included studies in infants < 12 months of age on average at study/intervention onset
252	Venning A, Kettler L, Wilson A, Elliott J. The effect of preventative interventions on the mental health of children considered at risk for future mental disorders: a systematic review. <i>JBI Database Syst Rev Implement Rep</i> 2006; <b>4</b> (10 Suppl): 32-41.	Wrong participants: "The review will consider studies that deal with children (10 - 19 years)"
253	Wassall S. Evaluation of an attachment theory based parenting programme for adoptive parents and foster carers: University of Birmingham; 2011.	Wrong study design: not a systematic review
254	Waters E, de Silva-Sanigorski A, Burford BJ, Brown T, Campbell KJ, Gao Y, et al. Interventions for preventing obesity in children. <i>Cochrane Database Syst Rev</i> 2011; <b>12</b> : CD001871.	Wrong intervention
255	Watson J, Tully L. Prevention and early intervention update - trends in recent research: literature review. Ashfield, NSW: Centre for Parenting & Research; 2008.	Wrong study design: not a systematic review
256	Webster-Stratton C, Taylor T. Nipping early risk factors in the bud: Preventing substance abuse, delinquency, and violence in adolescence through interventions targeted at young children (0-8 years). <i>Prev Sci</i> 2001; <b>2</b> (3): 165-92.	Wrong study design: not a systematic review

257	Weiner H. Examining the effectiveness of psychological treatments and interventions for child maltreatment: a meta-analysis: Pace University; 2010.	No access to full text: thesis
258	Welsh B, Farrington D. Early developmental prevention of delinquency and later offending: Prospects and challenges. <i>Int J Dev Sci</i> 2009; <b>3</b> (3): 247-59.	Wrong study design: not a systematic review
259	West S. Just a shadow? A review of support for the fathers of children with disabilities. Birmingham, UK: Handsel Trust; 2000.	Wrong study design: not a systematic review
260	Whipple D. Effectiveness of social competence promotion on disruptive behavior: A quantitative review. University of Rhode Island; 2007.	No access to full text: thesis; likely wrong participants (children with disruptive behaviour)
261	White A, Taplin S, Watson J, Huntsman L. Prevention and early intervention: literature review. Ashfield, NSW: NSW Centre for Parenting & Research; 2005.	Wrong study design: not a systematic review
262	Whittingham K, Wee D, Boyd R. Systematic review of the efficacy of parenting interventions for children with cerebral palsy. <i>Child Care Health Dev</i> 2011; <b>37</b> (4): 475-83.	Wrong participants: participants were children with cerebral palsy
263	Whitworth M, Dowswell T. Routine pre-pregnancy health promotion for improving pregnancy outcomes. <i>Cochrane Database Syst Rev</i> 2009; <b>4</b> : CD007536.	Wrong intervention: review focuses on an antenatal interventions (and does not report on infant social and emotional wellbeing or development)
264	Wickberg B. The role of the child health services in promoting mental health: an introduction. <i>Acta Paediatrica</i> 2000; <b>89</b> (s434): 33-6.	Wrong study design: not a systematic review
265	Wigg N. Parent education: a selected literature review. Unpublished. Report to the Queen's Trust Australia April; 1994.	Wrong study design: not a systematic review
266	Wilen JS, Littell J, Salanti G. Psychosocial interventions for adults who were sexually abused as children: a systematic review [research protocol]. Oslo, Norway: The Campbell Collaboration Library of Systematic Reviews; 2013.	Wrong publication type: protocol
267	Willson-Maunders H. Qualitative research into mothers' experiences of receiving early intervention for their children's difficulties: University of Warwick; 2005.	Wrong study design: review focused on qualitative studies
268	Wilson C, Cottone R. Using cognitive behavior therapy in clinical work with African American children and adolescents: A review of the literature. <i>J Multicult Couns Dev</i> 2013; <b>41</b> (3): 130-43.	Wrong study design: not a systematic review
269	Windsor R. Smoking cessation or reduction in pregnancy treatment methods: a meta-evaluation of the impact of dissemination. <i>Am J Med Sci</i> 2003; <b>326</b> (4): 216-22.	Wrong study design: not a systematic review

270	Winokur M, Holtan A, Batchelder K. Kinship care for the safety, permanency, and well-being of children removed from the home for maltreatment: a systematic review. <i>Campbell Syst Rev</i> 2014; 2.	Duplicate publication: duplicate (co-registration) of Cochrane review (classified as 'Relevant')
271	Winterbottom J, Smyth R, Jacoby A, Baker G. Preconception counselling for women with epilepsy to reduce adverse pregnancy outcome. <i>Cochrane Database Syst Rev</i> 2014; <b>3</b> : CD006645.	Wrong publication type: withdrawn Cochrane review
272	Woolfenden S, Williams K, Peat J. Family and parenting interventions for conduct disorder and delinquency: a meta-analysis of randomised controlled trials. <i>Arch Dis Child</i> 2002; <b>86</b> (4): 251-6.	Wrong participants: participants were children 10 to 17 years
273	Yousafzai A, Aboud F. Review of implementation processes for integrated nutrition and psychosocial stimulation interventions. <i>Ann NY Acad Sci</i> 2014; <b>1308</b> (1): 33-45.	Wrong scope: review of implementation processes and not outcomes
274	Zepeda M, Varela F, Morales A. Promoting positive parenting practices through parenting education: UCLA Center for Healthier Children, Families and Communities; 2004.	Wrong study design: not a systematic review
275	Zhou H, Shields L, Watts R, Taylor M, Munns A, Ngune I. Family-centred care for hospitalized children aged 0-12 years: A systematic review of qualitative studies. <i>JBI Database Syst Rev Implement Rep</i> 2012; <b>10</b> (57): 3917-35.	Wrong study design: review focused on qualitative studies
276	Zoritch B, Roberts I, Oakley A. The health and welfare effects of day-care: a systematic review of randomised controlled trials. <i>Soc Sci Med</i> 1998; <b>47</b> (3): 317-27.	Duplicate publication: based on a Cochrane review (classified as 'Included')

## Quality assessment forms

Bakermans-Kranenburg 2005	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? 2 reviewers coded all of the studies independently; duplicate study selection not mentioned	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Though comprehensive sources searched, search terms not reported	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." "Case studies were excluded, as well as unpublished studies or interventions that were only reported at meetings or conferences"</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? List of excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? Though study characteristics provided narratively in text, details were limited (i.e. unclear where studies were conducted)	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	2/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	High
Rationale: Review authors specifically excluded unpublished studies	
2.Concerns regarding methods used to identify and/or select studies	High
Rationale: Authors did not specify whether duplicate selection occurred	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: Quality of the studies was not assessed	
4. Concerns regarding the synthesis	Low
Rationale: Meta-analysis appropriate (however quality of studies not assessed and therefore not addressed in synthesis)	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI



<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear
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**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Bakermans-Kranenburg 2003	
QUALITY OF REVIEW: AMSTAR	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	Judgement
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Duplicate coding of included studies for meta-analyses; duplicate selection not detailed	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." "Case studies were excluded, as were unpublished studies or interventions that were reported only at meetings or conferences"</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? List of excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? <i>"detailed description of the studies may be requested from Marinus H. van IJzendoorn"</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? <i>"to estimate the size of the file drawer problem in the current set of meta-analyses, we provided the fail-safe numbers of unretrieved studies with null results that would be needed to cancel out the combined effects found in the retrieved studies."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	4/11
QUALITY OF REVIEW: ROBIS	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	Concern
1.Concerns regarding specification of study eligibility criteria	High
Rationale: Unpublished studies, or studies reported at meetings or conferences only were excluded	
2.Concerns regarding methods used to identify and/or select studies	High
Rationale: Duplicate selection not detailed; as above, unpublished studies were excluded	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: Studies only characterised as random or non-random; quality not formally assessed	
4. Concerns regarding the synthesis	Low
Rationale: Meta-analysis appropriate (however quality of studies not assessed and therefore not addressed in synthesis)	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Barlow 2011	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? No detail on assessment of publication bias	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Only conflicts of review authors stated	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	9/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear
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**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Bee 2014	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Competing interests of review authors listed only	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	10/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2. Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3. Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Bennett 2013</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Conflicts of review authors stated, and funding sources for included studies stated where possible	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	10/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Abstract focusses on reporting significant results	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Bernazzani 2001</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not reported	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Not clear</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Only assessed (not reported) – and those studies of 4-star and 5-star quality were included	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Narrative summary appropriate	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors reported funding sources; funding/conflicts of individual studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	4/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria Rationale: The authors only included the studies of 4-star and 5-star quality; no details of inclusion/exclusion of unpublished studies	High
2. Concerns regarding methods used to identify and/or select studies Rationale: No detail of methods to minimise error in selection of studies	High
3. Concerns regarding methods used to collect data and appraise studies Rationale: No detail of methods to minimise error in data extraction; quality was assessed prior to inclusion (using the Threats to Trial Integrity Score), however no details regarding quality of the included trials were reported (other than that they were 4 and 5-star quality)	High
4. Concerns regarding the synthesis Rationale: Unclear if it was pre-specified that all lower quality studies would not be included in the review; narrative summaries only	Unclear/High
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear
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**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Bowie 2004</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not reported	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Not clear</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Narrative synthesis; no pre-specification of methods used to combine studies	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors funding declared; not reported for individual studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	3/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	High
Rationale: While searches seemed appropriate, terms not clearly outlined, and no detail of efforts to minimise error in selection of studies	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: No detail of efforts made to minimise error in data collection; study characteristics provided, however minimal detail available; outcome data incompletely reported in table; risk of bias not assessed	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear
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**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Brett 2011</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? <i>"Initially, two reviewers extracted data (JB, SS) independently for 20% of papers, and disagreements were resolved by discussion with a third reviewer. The was a high level of agreement between reviewers, so the remaining data were extracted by one reviewer and checked by a second;"</i> duplicate study selection not clear	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? List of excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? Online tables 2a to 2j report the data extraction	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? <i>"data-extraction form and quality assessment for inclusion criteria were based on the guidelines from the NHS Centre for Reviews and Dissemination... the included evidence was assessed using the Scottish Intercollegiate Guidelines Assessment"</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors funding declared; not stated for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	7/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low/Unclear
Rationale: Comprehensive searching, including mention of searching for unpublished studies; unclear whether study selection was performed in duplicate	
3.Concerns regarding methods used to collect data and appraise studies	Low/Unclear
Rationale: Data extraction performed in duplicate for 20% of the papers, which was performed by 1 reviewer, and checked by a second; quality assessed using Scottish Intercollegiate Guidelines Assessment	
4. Concerns regarding the synthesis	Low
Rationale: Narrative synthesis appropriate given heterogeneity of interventions/study designs	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Bryanton 2013	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? Plan to assessed publication bias in meta-analyses with > 10 studies	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declared interests; funding sources/conflicts for included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	10/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI



Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Conde-Agudelo 2014</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declared their interests; funding/conflicts of the included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	10/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria Rationale:	Low
2. Concerns regarding methods used to identify and/or select studies Rationale:	Low
3. Concerns regarding methods used to collect data and appraise studies Rationale:	Low
4. Concerns regarding the synthesis Rationale:	Low
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Coren 2003</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided? The authors refer to the Coren 2001 version of the Cochrane review "The methods have been described in detail elsewhere (Coren & Barlow, 2011)"	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Duplicate study selection; unclear whether data extraction was performed in duplicate	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Not clear</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Limited detail provided	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	6/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale:	Low
2.Concerns regarding methods used to identify and/or select studies Rationale:	Low
3.Concerns regarding methods used to collect data and appraise studies Rationale: Authors refer to methods in Coren & Barlow 2001 Cochrane review, however do not specifically state that data extraction and risk of bias assessment were performed independently for those studies (non-RCTs) not in the Cochrane review. Risk of bias not formally assessed with a specific tool, rather the 'limitations' for each study were reported	Unclear/High
4. Concerns regarding the synthesis Rationale:	Low
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Das Eiden 1996	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided? Very limited detail provided	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Very limited detail provided	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Very limited detail provided	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Only included published studies</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? Fail-safe statistic used	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	3/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale: Eligibility criteria not clearly defined; only included published studies	High
2.Concerns regarding methods used to identify and/or select studies Rationale: Search methods not reported; selection process not reported	High
3.Concerns regarding methods used to collect data and appraise studies Rationale: No quality assessment; data extraction processes not reported	High
4. Concerns regarding the synthesis Rationale: not clearly reported	Low/Unclear
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear
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**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Dennis 2013	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Only review authors conflicts stated	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	10/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2. Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3. Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Dodd 2005	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided? Yes, though very brief	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not mentioned	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Only PubMed was searched	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Only published literature was included</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? In Table 1, 'Limitations' associated with each study were reported; but quality not formally assessed	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Results tabulated, and narrative synthesis of results, however no pre-specification of methods for synthesis	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors funding stated; conflicts/funding not reported for the included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	2/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale: Details of eligibility criteria very brief (did not specify restrictions)	High
2.Concerns regarding methods used to identify and/or select studies Rationale: Appeared that only PubMed was searched; very limited searching, with no search for unpublished studies. No detail of how studies were selected	High
3.Concerns regarding methods used to collect data and appraise studies Rationale: No detail on how data extraction was performed (i.e. if 2 individuals extracted data); and quality not assessed using a formal 'tool' – rather, 'limitations' associated with individual studies were reported	High
4. Concerns regarding the synthesis Rationale: Narrative synthesis appropriate given heterogeneity (particularly of study designs and outcomes); however limited consideration of quality of the studies in narrative synthesis	High
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Results in Table 1 reported with	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

footnote (“statistically significant differences”), however null results (no differences) also reported in Table and in text	
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can’t answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Doughty 2007	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an ‘a priori’ design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Appears that 1 author conducted selection; critical appraisals etc.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for “grey literature” or “unpublished literature,” indicate “yes.” Did not included unpublished studies</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? In Tables, ‘Limitations’ associated with each study were documented individually; however no formal assessment of study quality/risk of bias in the randomised trials was conducted	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors conflicts stated; not stated for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	5/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale: Though only published studies were included	Low
2.Concerns regarding methods used to identify and/or select studies Rationale: No efforts to minimise error in selection of studies	High
3.Concerns regarding methods used to collect data and appraise studies Rationale: Risk of bias not formally assessed using appropriate tool (i.e. for randomised trials); and no efforts to minimise error in assessing study quality/risk of bias	High
4. Concerns regarding the synthesis Rationale:	Low
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review’s research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear
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**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Douglas 2013	
QUALITY OF REVIEW: AMSTAR	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	Judgement
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not mentioned	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Only published studies were included</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? List of excluded studies not provided (list of all included articles also not provided)	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? As below, only 19/43 articles were presented in Table 1 in detail; with other studies described throughout the narrative text	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? <i>"Because studies measure multiple aspects of unsettled infant behavior and sleep, multiple parent and infant outcomes, and multiple variations of behavioral interventions, data pooling, and statistical analysis for comparisons across studies were not viable or meaningful. Our findings were synthesized and narratively described"; authors reported that 43 articles were included, but present the detail of 19 'key studies' in Table 1</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare their conflicts; funding/conflicts not reported for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	2/11
QUALITY OF REVIEW: ROBIS	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	Concern
1.Concerns regarding specification of study eligibility criteria Rationale: Study eligibility criteria not specific/detailed (considering study designs: longitudinal studies not mentioned but included; outcomes; quality; publication format etc.); only studies published in peer-reviewed English language publications were included	High
2.Concerns regarding methods used to identify and/or select studies Rationale: No mention of duplicate selection of studies; unpublished studies were not searched for	High
3.Concerns regarding methods used to collect data and appraise studies Rationale: Duplicate data extraction not mentioned; quality of individual studies not assessed/reported	High
4. Concerns regarding the synthesis Rationale: Narrative synthesis appropriate; however of the 43 studies only 19 'key studies' summarised in Table 1, and unclear from the narrative text, whether all included articles were summarised	High

Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Review authors appear to focus on 'negative' impacts (it is somewhat unclear as to whether this is justified given the concerns regarding synthesis above), though 'statistical significance' not emphasised	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Elkan 2000	
QUALITY OF REVIEW: AMSTAR	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	Judgement
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not mentioned	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Unclear whether unpublished/grey literature were specifically searched for</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? <i>"We have taken no formal steps to look for publication bias by plotting effect sizes, or by calculating test statistics. In most cases there are few studies on any given effect, and any formal method would have little power."</i> However, review authors discuss implications of those findings demonstrating no effect remaining unpublished	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Funding sources/conflicts of included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	8/11
QUALITY OF REVIEW: ROBIS	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	Concern
1.Concerns regarding specification of study eligibility criteria Rationale:	Low
2.Concerns regarding methods used to identify and/or select studies Rationale: Unclear whether unpublished studies were specifically searched for; no mention of duplicate screening	Unclear/High
3.Concerns regarding methods used to collect data and appraise studies	Unclear/High



Rationale: No mention as to whether data extraction and quality assessment was performed independently by 2 reviewers	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Evans 2014	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? <i>"The following databases were comprehensively searched by two reviewers... Data extraction: ... The variables were extracted by the first author and checked by the second author"</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Although 5 data bases were searched, no mention of additional searching efforts (such as reference lists; consulting with experts; hand-searching etc.)	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Not clear (as above 5 databased searched)</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? List of excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Using the PeDro Scale	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? Only the studies with 'strong methodological quality' were included in analyses	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? The review authors original intention was to conduct a meta-analysis of all data; due to heterogeneity (particularly of outcome measures); this was not possible (possible only for 3 studies)	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare funding; funding/conflicts of included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	6/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	

2.Concerns regarding methods used to identify and/or select studies	Unclear/High
Rationale: Although five databases were searched, no additional searching activities were reported; unclear if unpublished studies were searched for/included	
3.Concerns regarding methods used to collect data and appraise studies	Unclear
Rationale: Data extraction (and thus quality assessment) not independently done	
4. Concerns regarding the synthesis	Low
Rationale: The review authors original intention was to conduct a meta-analysis of all data; due to heterogeneity (particularly of outcome measures); this was not possible (possible only for 3 studies); thus results reported narratively	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? The abstract does not report on the negative effects on the mother-infant relationship for the infant also observed	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Gagnon 2007</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not clearly detailed in methods section; in the abstract the authors report " <i>Both authors assessed trial quality and extracted data from published reports.</i> "	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? No meta-analyses possible due to heterogeneity of interventions and outcomes	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declared that they have no conflicts; funding/conflicts not reported for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	8/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>

1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Unclear
Rationale: Not specified that selection was done in duplicate (data collection and quality assessment were conducted by 2 reviewers)	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Gardner 2006	
QUALITY OF REVIEW: AMSTAR	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	Judgement
Was an 'a priori' design provided? Eligibility criteria not well defined	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." No detail of searching for unpublished studies</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? Yes, limited details provided in Table 1, and in text	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Appeared to be assessed (see Table 2), but not reported	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Narrative synthesis; no pre-specification of methods for synthesising results of studies	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? No conflicts detailed	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	2/11
QUALITY OF REVIEW: ROBIS	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	Concern

1.Concerns regarding specification of study eligibility criteria	Unclear
Rationale: Eligibility criteria not well defined (considering study quality/design, outcomes, publication type)	
2.Concerns regarding methods used to identify and/or select studies	High
Rationale: Selection by two reviewers not mentioned	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: Data extraction and quality appraisal by two reviewers not detailed; though in Table 2, aspects of quality were detailed to be assessed, the results of this quality assessment were not reported	
4. Concerns regarding the synthesis	High
Rationale: Quality of studies not taken into account in reporting; very limited (quantitative) outcome data reported	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Goyal 2013	
QUALITY OF REVIEW: AMSTAR	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	Judgement
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Duplicate data extraction (not specified that screening/study selection was performed in duplicate)	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." "The sample was limited to published studies"</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Using the Consolidated Standards of Reporting Trials guidelines for controlled trials, and Strengthening the Reporting of Observational studies in Epidemiology guidelines for cohort studies	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Predominately narrative synthesis, with meta-analysis used to synthesise data for outcome domains on clinical determination of sufficient similarity between subjects and outcomes of included studies	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? <i>"Additionally, because only published studies were included, this review may be subject to error because of publication bias. However, when the 9 studies contributing 1-year Bayley MDI score data were investigated with a funnel plot of SE, results did not appear to scatter asymmetrically (data not shown)."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Was the conflict of interest (both review and included studies) stated? Review authors declare their funding/conflicts; not reported for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	7/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale: Note: only included studies published in United States or Canada	Unclear
2.Concerns regarding methods used to identify and/or select studies Rationale: No search for unpublished studies; unclear if study selection was performed by two reviewers	Unclear
3.Concerns regarding methods used to collect data and appraise studies Rationale:	Low
4. Concerns regarding the synthesis Rationale:	Low
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Grantham-McGregor 2014</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? No detail of methods for study selection and data extraction	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i> No detail of specific search for unpublished studies (only papers published in peer-reviewed journals or available online as working papers were included)	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Studies that were not randomised trials were evaluated by the authors according to the McMaster University Effective Public Health Practice Project Quality Assessment Tool For Quantitative Studies; only studies rated moderate-to-good quality were included	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Narrative synthesis and tables; methods for synthesis not clearly pre-	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA

specified	
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declared that they have not conflicts; funding/conflicts for included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	3/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	High
Rationale: Unpublished studies not included; no detail duplicate selection	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: No detail of duplicate data extraction or quality appraisal; though quality reported to be assessed for inclusion (i.e. only moderate-to-good quality studies were included), results of quality assessment not reported for included studies	
4. Concerns regarding the synthesis	Unclear
Rationale: Narrative synthesis appropriate; however tables present results of independent and combined intervention effects, which are reported as "significant" or "Not significant" only	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Although Tables focus on significance/non-significance, results/discussion present a more balanced view, including positive, negative and null results	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Kemp 2014	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided? Unclear whether different 'levels' of inclusion criteria were pre-defined, or decided post-hoc once search was performed and number of results retrieved known	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not detailed	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Only database searching	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i> Included studies published in peer-reviewed journals	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare no conflicts; funding/conflicts related to included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	1/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	High
Rationale: Authors chose to include only studies published between 2011-2013, after searching 2000-2013 (as 'third-level inclusion criterion') to identify results emerging from the second-generation coaching literature	
2.Concerns regarding methods used to identify and/or select studies	High
Rationale: Only studies published in peer-reviewed journals were included; not clear if selection was done in duplicate	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: No assessment of study quality; unclear if data extraction performed in duplicate	
4. Concerns regarding the synthesis	High/Unclear
Rationale: Narrative synthesis with tables (predominately focused on characteristics of studies); limited outcome (quantitative) data provided; quality not considered in synthesis	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input checked="" type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Knerr 2013</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not clear, although it appears that only the first author performed screening	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Though comprehensive set of sources searched, search terms not provided/unclear	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Unpublished reports sought via Google Scholar, website searchers, and dissertation databases; parenting experts were also contacted</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? List of excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Due to substantial differences in populations, settings, outcomes, analyses and reporting of studies, meta-analysis was not possible; results described narratively	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? Authors discuss potential for publication bias (and strategies to identify unpublished studies) in Limitations of This Review	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors report their funding sources; funding/conflicts of included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	6/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Unclear
Rationale: Unclear as to whether selection of studies was performed by two reviewers	
3.Concerns regarding methods used to collect data and appraise studies	Unclear
Rationale: Unclear as to whether quality assessment and data extraction was performed by two reviewers	
4. Concerns regarding the synthesis	Low
Rationale: Narrative synthesis appropriate, given substantial heterogeneity of studies	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input type="checkbox"/> High <input checked="" type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Kong 2013</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not reported/unclear for selection; for extraction: "For reliability of coding, the first author reviewed and coded the 31 articles and 4 other reviewers coded 25% of the articles. The 4 reviewers reach each article and coded the data independently"	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA



<i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Results predominately reported as % studies with positive outcomes for particular outcome domains	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare funding/conflicts; not stated for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	3/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale: Unpublished studies not included	Unclear
2.Concerns regarding methods used to identify and/or select studies Rationale: Unpublished studies not searched for; not specified whether two reviewers selected studies	High
3.Concerns regarding methods used to collect data and appraise studies Rationale: Quality of studies was not assessed	High
4. Concerns regarding the synthesis Rationale: Results predominately reported as % studies with positive outcomes for particular outcome domains; quality of studies not taken into account	High
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Nature of reporting (including in abstract; and focusing on % studies with positive outcomes) emphasises significantly positive outcomes	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Magill-Evans 2006</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Data extraction performed by two reviewers; not clear for study selection	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

<i>If review indicates that there was a search for “grey literature” or “unpublished literature,” indicate “yes.” The review authors specifically excluded un-published articles/studies that were not peer-reviewed.</i>	
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Very brief discussion and only for studies of moderate or high quality; results presented in Tables ““ <i>Finding (statistically significant unless indicated otherwise)</i> ”; specified not able to conduct meta-analysis due to diversity of interventions	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? The authors noted the risk of publication bias given that they excluded non-published studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	5/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Unclear
Rationale: No clear definition of ‘interventions with fathers of young children’ (i.e. ambiguous). Unclear why non-peer reviewed, un-published reports, conference proceedings were excluded	
2.Concerns regarding methods used to identify and/or select studies	High
Rationale: Though searches appropriate, no efforts to minimise bias in selection (i.e. not duplicate screening)	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale: Duplicate data extraction. Risk of bias assessed by rating “ <i>important aspects of the study using a 3-point scale</i> ”	
4. Concerns regarding the synthesis	Unclear/High
Rationale: Authors narratively synthesise results from studies of moderate or high quality only, though present findings from low quality studies in table. Results presented in Tables “ <i>Finding (statistically significant unless indicated otherwise)</i> ”	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review’s research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Results from single studies support conclusions of effectiveness. Results presented as statistically significant or non-significant only	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can’t answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Maulik 2009</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can’t answer, or not applicable</b>	<b>Judgement</b>
Was an ‘a priori’ design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not described	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA

Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Not clear/reported</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Authors report <i>"Each individual study was assessed in terms of quality to look for bias, confounding, use of appropriate statistical methods and power estimation, use of validated tools, blinding, handling of attrition, study design and sampling strategy."</i> However, results of quality assessment not uniformly reported for all studies	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? <i>"First, though it is a comprehensive review covering a large database and involving a hand-search of available databases and literature, it does not include a stringent quality assessment protocol";</i> However, authors discuss study quality/limitations in Discussion	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Narrative synthesis, and use of tables; with results reported by study design	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Authors declare conflicts/funding; not stated for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	4/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Unclear/High
Rationale: No mention of duplicate selection	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: No mention of duplicate extraction; though quality assessment discussed in methods, not clear if this was uniformly done, as not reported	
4. Concerns regarding the synthesis	Unclear
Rationale: As above, though authors discuss quality assessment, this was not uniformly reported for all included studies; supplementary tables provide individual study results, however limited quantitative data are provided	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Unclear	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Mejia 2012

**QUALITY OF REVIEW: AMSTAR**

<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Databases were searched; no further detail of searching activities	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Not specifically stated whether unpublished studies would have been included; however only "peer-reviewed" studies were eligible</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Comment made that only 1 trial used a "rigorous methodological design based on the CONSORT guidelines", but quality not formally reported for all studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Methods for synthesis not clearly pre-specified	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	2/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale: Eligibility criteria were brief and ambiguous with regards to publication format, study design/quality etc.	Unclear
2.Concerns regarding methods used to identify and/or select studies Rationale: Methods in addition to database searching not reported; no mention of duplicate selection/screening	High
3.Concerns regarding methods used to collect data and appraise studies Rationale: No mention of duplicate data extraction/quality assessment; quality was not reported for all studies	High
4. Concerns regarding the synthesis Rationale: No clear methods for synthesis pre-specified; though the authors note one study had a strong methodological design, the quality of the other studies is not clearly reported/incorporated into synthesis	High
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Effect sizes reported without confidence intervals	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input checked="" type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Mercer 2006	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Duplicate selection not detailed; "Both authors reviewed the articles and analyzed each by samples size and characteristics....The authors e-mailed findings back and forth several times weekly to achieve agreement and discuss new insights"	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Only published studies included</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? No clear pre-specification of methods for synthesis	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	3/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Unclear
Rationale: Appears that authors modified inclusion criteria (i.e. planned to include only randomised studies, but made exceptions for well-controlled studies)	
2.Concerns regarding methods used to identify and/or select studies	Unclear
Rationale: Limited detail provided re: search strategy, and additional searching methods "as well as articles known to us through other sources"; unpublished studies not searched for; no mention of duplicate selection	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: Quality of studies not assessed/reported	
4. Concerns regarding the synthesis	Unclear
Rationale: Authors did not clearly pre-specify methods for synthesis; no incorporation of study quality (as not assessed); limited quantitative data reported in results tables (largely reported as "favourable" or "significant" or "not significant" etc.)	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Miller 2011	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? Pre-specified methods for assessing publication bias, however insufficient studies to draw funnel plots	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors report funding source and declarations of interest; not reported for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	10/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2. Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3. Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Moore 2012</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? Methods pre-specified for assessment of publication bias, but insufficient studies to perform assessment	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare their interests; funding/conflicts related to included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	10/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2. Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3. Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Mortensen 2014</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? <i>"To ensure reliability in the coding procedures, two coders independently coded a randomly selected 1 third of the intervention studies. Percent agreement on all variables ranged from 100 to 83%; the two coders discussed and resolved all points of disagreement."</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>"To ensure that the intervention evaluation was of strong methodological quality, study results had to be published in a peer-reviewed journal. Conference papers, dissertations and books were not considered." If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? Studies only reported as random or non-random	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	5/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Unclear
Rationale: Unpublished studies not searched for	
3.Concerns regarding methods used to collect data and appraise studies	Unclear/High
Rationale: Duplicate selection not mentioned; duplicate extraction for 1/3 of studies; quality not formally assessed – studies coded as random/non-random	
4. Concerns regarding the synthesis	High
Rationale: As above, quality not formally assessed, therefore not incorporated into synthesis; effect sizes for individual studies reported without confidence intervals	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear



**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Niccols 2012	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? A trained research assistant coded each study, and the principal investigator coded 20%	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Specifically searched for grey literature</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Flow diagram provided, but no list of excluded studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? Very few characteristics of the included studies provided	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	7/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Unclear/High
Rationale: A trained research assistant coded each study and the principal investigator coded 20% of the studies (i.e. not independent screening by at least 2 reviewers). Searches were comprehensive.	
3.Concerns regarding methods used to collect data and appraise studies	Unclear/High
Rationale: A trained research assistant coded study quality (" <i>Inter-rater reliability, based on 16% (19) of the 120 eligible studies, was high Kappa = 0.81</i> "). Data extraction was not done by two reviewers independently, and it did not appear that 'checking' of all papers was done by a second reviewer. Very limited information on individual study characteristics was provided (some was reported in the Tables, and the majority as summary text – in this summary text it is not always clear which study(ies) is/are being referred to). Risk of bias for relevant studies was assessed using Newcastle-Ottawa Scale (though reasons for scores not provided)	
4. Concerns regarding the synthesis	Low
Rationale: Authors note it was not possible to combine results from individual studies, and thus reported by individual study	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI

Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Peacock 2013	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Article title and abstracts were screened by one reviewer (a second reviewer randomly selected 10 articles, and independently screened them); quality assessment and data extraction performed by two reviewers	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Authors only performed data extraction on high-quality studies (scoring 13 or greater out of a possible 15); for those studies, their score is reported in Table 2	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? <i>"Due to the diversity of the outcomes included in the studies, varying types of statistical analysis conducted, and measures of associations reported, calculation of overall summary estimates (i.e., meta-analysis) was not possible."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? <i>"The findings of this review must be considered in light of the potential for publication bias"</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Not for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	7/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2. Concerns regarding methods used to identify and/or select studies	Unclear
Rationale: Article title and abstracts were screened by one reviewer (a second reviewer randomly selected 10 articles, and independently screened them)	
3. Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale: <i>"Due to the diversity of the outcomes included in the studies, varying types of statistical analysis conducted, and measures of associations reported, calculation of overall summary estimates (i.e., meta-analysis) was not possible."</i>	

Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Results reported in Tables, 3-5 only as "non-significant" or as "more likely"/"intervention effects" etc.; limited quantitative information available to assess effect sizes	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Pinquart 2010	
QUALITY OF REVIEW: AMSTAR	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	Judgement
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not detailed	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Only databases were searched; no mention of searching of reference lists / other sources	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? Not reported/clear <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Full list of included studies available in supplementary materials; no list of excluded studies provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? Only aggregate information was provided; characteristics not reported by individual studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Only two aspects of study quality were considered, equivalence of groups and dropout rates	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? As above	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	2/11
QUALITY OF REVIEW: ROBIS	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	Concern
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Unclear/High
Rationale: No detail of duplicate selection; no additional sources searched (apart from databases); unpublished studies not searched for	
3.Concerns regarding methods used to collect data and appraise studies	High
Rationale: Quality not fully assessed – only equivalence of groups and dropout rates considered; no mention of duplicate extraction/coding	
4. Concerns regarding the synthesis	Unclear/High

Rationale: As above, quality not fully assessed, therefore not incorporated into synthesis	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered? Very heterogeneous studies (interventions/participants/outcome)	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? "significant effects" reported across a range of outcomes (though significant heterogeneity was present for almost all of these outcomes); no "significant" effect was seen at follow up for some outcomes (with no significant heterogeneity), however focus is on positive results	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Piotrowski 2009	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided? Very limited detail provided regarding eligibility criteria	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not mentioned for study selection; unclear for data extraction: "Articles were categorized into 1 of the 3 identified outcome categories (intercoder agreement was 99%); coding was not mutually exclusive"	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Only published empirical evaluations were included</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Methods for synthesis not clearly pre-specified	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Authors declare their conflicts/funds; not reported for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	2/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale: Very limited pre-specification of studies to be included	Unclear/High
2.Concerns regarding methods used to identify and/or select studies Rationale: No detail of duplicate selection	High
3.Concerns regarding methods used to collect data and appraise studies	High

Rationale: No clear detail of duplicate extraction, and quality of studies not formally assessed	
4. Concerns regarding the synthesis	Unclear
Rationale: No pre-specification of methods for synthesis	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Piquero 2008	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? <i>"Dr. Jennings independently coded each eligible study, and consulted with Dr. Piquero when questions arose in order to determine the final coding decision."</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? Very brief	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare their conflicts; funding/conflicts not stated for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	7/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2. Concerns regarding methods used to identify and/or select studies	High
Rationale: No efforts to minimise error in selection of studies	
3. Concerns regarding methods used to collect data and appraise studies	High

Rationale: No efforts to minimise error in data collection; quality of studies not formally assessed	
4. Concerns regarding the synthesis	Unclear
Rationale: Without knowledge of quality of individual studies, it is difficult to determine appropriateness of syntheses	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input type="checkbox"/> High <input checked="" type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Poobalan 2007	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Using form adapted from the Cochrane Collaboration and the Jadad scale	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Declaration of interest for author reported; not mentioned for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	6/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale:	Low
2.Concerns regarding methods used to identify and/or select studies Rationale: Unpublished studies specifically excluded/not searched for	High
3.Concerns regarding methods used to collect data and appraise studies	Low

Rationale:	
4. Concerns regarding the synthesis	Unclear/High
Rationale: Though quality of studies assessed, only an overall rating provided, and this was not incorporated into the discussion of results (1 "strong"; 6 "moderate")	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input type="checkbox"/> High <input checked="" type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Rahman 2013	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Funding reported/declarations made for review authors; conflicts/funding for individual studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	7/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Unclear/High
Rationale: No detail on formal quality assessment of included studies	

4. Concerns regarding the synthesis	Unclear
Rationale: As above, no formal quality assessment; therefore quality not taken into account in synthesis/reporting of results (which were pre-specified, appropriate meta-analyses)	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input type="checkbox"/> High <input checked="" type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Regalado 2001	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not mentioned	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? Only 2 databases searched	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Only published studies included</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Not assessed formally (Jadad score mentioned for trials)	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	2/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2. Concerns regarding methods used to identify and/or select studies	High
Rationale: No detail on independent screening by two reviewers	
3. Concerns regarding methods used to collect data and appraise studies	High
Rationale: No detail on independent data extraction by two reviewers; quality not assessed	
4. Concerns regarding the synthesis	High



Rationale: Quality not assessed, and not taken into account in presentation of results narratively; results reporting very brief (narrative) and unclear what specific outcomes for efficacy were	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Significance of results not clear only presented as effect: yes/no	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input checked="" type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Reynolds 2009	
QUALITY OF REVIEW: AMSTAR	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	Judgement
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not mentioned	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? No specific mention of databases searched, or search terms etc.	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." "To reduce reporting bias, we searched for both published and unpublished studies"</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Quality not formally assessed with a specific tool; review authors report on 'program information' and 'implementation quality' in Tables, and also on 'monitoring/detection bias' and 'control/comparison group'; as an inclusion criterion, authors only included <i>"Studies [with] coverage of program design, content, and implementation quality"</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? Quality of studies discussed throughout narrative reporting of results, though inconsistently	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? Mentioned in Discussion <i>"Because many of the studies we reviewed found no reliable group differences on child maltreatment, the inclusion of more unpublished studies would likely increase the number of studies showing null findings. Unpublished studies are more likely than published studies to show no effect findings. Consequently, the effect sizes in our review may be greater than in analyses that include more unpublished studies."</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	3/11
QUALITY OF REVIEW: ROBIS	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	Concern
1. Concerns regarding specification of study eligibility criteria	Unclear
Rationale: Not clear what the criterion <i>"Studies [with] coverage of program design, content, and implementation quality"</i> relates to	

2.Concerns regarding methods used to identify and/or select studies	Unclear/High
Rationale: No detail of duplicate selection; no detail of database searches to identify studies for inclusion	
3.Concerns regarding methods used to collect data and appraise studies	Unclear/High
Rationale: Quality not formally assessed with a 'tool'; no detail of duplicate extraction and quality assessment	
4. Concerns regarding the synthesis	Unclear
Rationale: Unclear pre-specification of methods for synthesis; heterogeneity identified and not discussed/explored further for mean effect	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Segal 2012	
QUALITY OF REVIEW: AMSTAR	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	Judgement
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? For selection, 1 author excluded "obviously irrelevant" articles (based on title/abstract); 2 reviewers assessed full-text studies for inclusion; 1 author formally assessed each included studies for bias; double data extraction for other characteristics/outcomes	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Specific mention of searching for grey literature</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? Though quality assessed and reported, not taken into account in reporting of results/conclusions, which are focused on consistency of theory underpinning the program with target population and needs, and program components	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Synthesis focused on consistency of theory, target population and program components, and subsequent 'success' – with success defined as a statistically significant result (where 1 variable is reported; or if 2 or more variables were reported, > 1 had to be significantly positive, if all other variables showed (at worst) no difference	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare conflicts and funding; not listed for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Total score	6/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	
1.Concerns regarding specification of study eligibility criteria	Concern Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Unclear
Rationale: Synthesis focused on consistency of theory, target population and program components, and subsequent 'success' – with success defined as a statistically significant result (where 1 variable is reported; or if 2 or more variables were reported, > 1 had to be significantly positive, if all other variables showed (at worst) no difference. Therefore, quantitative results not reported/results not combined (only 'significantly better' 'significantly worse' or 'no significant difference')	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? See above	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Shaw 2006	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	
	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? See published protocol	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." "Grey literature, such as unpublished studies or those listed on the worldwide web, and ongoing trials were not identified"</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? Jadad score was used	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Though limited quantitative data reported	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Was the conflict of interest (both review and included studies) stated? Not stated for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	7/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale: Though no search for unpublished studies	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low/Unclear
Rationale: Limited quantitative data provided in Tables for individual included studies; protocol mentioned that meta-analysis not possible/appropriate due to heterogeneity; quality not fully incorporated into narrative synthesis of results/Discussion	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Spittle 2012</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Was the conflict of interest (both review and included studies) stated? Funding/conflicts for included studies not stated	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	9/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Suchman 2006</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	
Was an 'a priori' design provided? Very brief; unclear if pre-specified	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? No clear pre-specification of methods for synthesis	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Total score	1/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria Rationale: Very brief eligibility criteria (not very detailed; few restrictions etc.)	Unclear
2.Concerns regarding methods used to identify and/or select studies Rationale: Only searched one database: PsychInfo; terms not reported; no efforts to minimise bias in selection of articles reported	High
3.Concerns regarding methods used to collect data and appraise studies Rationale: No detail of efforts to minimise error in data collection; result incompletely reported in Table; risk of bias not assessed	High
4. Concerns regarding the synthesis Rationale: Results summarised narratively and reported in tables – unclear pre-specification of methods for syntheses	Unclear
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Turnbull 2012	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Searched for published and unpublished studies</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? Planned to (i.e. in methods section)	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Conflicts for included studies not stated	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Total score	10/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Low
Rationale:	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

Vanderveen 2009	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." No information provided</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? <i>"References for all studies which were not included for analysis can be obtained from authors and are summarized as an Appendix"</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided? In supplementary document	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? Authors discuss risk of bias/study quality, though note that <i>"Results could not be analysed by study quality due to incomplete reporting in the included trials"</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed? Using a funnel plot	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Total score	8/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Unclear/Low
Rationale: Substantial heterogeneity (clinical and statistical) for some outcomes, which was explored through subgroup analyses (no interaction tests performed); <i>“results could not be analysed by study quality due to incomplete reporting in the included trials”</i> ; funnel plots not presented, but authors note: <i>“Funnel plots did not show any asymmetrical pattern on visual inspection.”</i>	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Wade 1999</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Not clearly pre-specified that analysis would be narrative synthesis	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare funding; funding sources for included studies reported	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA



Total score	9/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<i>Record concerns as low, high, or unclear with rationale for concern</i>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Low
Rationale:	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale:	
4. Concerns regarding the synthesis	Unclear
Rationale: Narrative synthesis of results (focused largely on characteristics of studies, not efficacy outcomes); quantitative results presented in Tables – unclear if methods for synthesis were clearly pre-specified	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input checked="" type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Wallace 2010</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<i>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</i>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? <i>"Two independent raters evaluated each paper and inter-rater agreement regarding this classification was assessed via the examination of 20% of papers... Any classification differences were resolved by discussion among the raters"</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? 2 databases were searched, along with hand-searching of 6 texts – keywords not provided	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes." Only articles published in peer-reviewed journals were included</i>	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented? The reviewers classified studies <i>"according to the criteria for establishing empirical support outlined by Nathan and Gorman (2002)"</i> – and subsequently only included Type 1 and 2 studies in the analyses	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? Only Type 1 and Type 2 studies included in analyses	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Were the methods used to combine the findings of studies appropriate? Unclear if methods for combining studies were pre-specified; effect sizes plotted and mean effect size across studies reported; effect sizes relate to various standardised measures of overall developmental ability (i.e. Bayley Scales; Griffiths Scales); no confidence intervals presented with mean effect sizes, and heterogeneity not measured/reported	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare their funding support; funding/conflicts not reported for included studies	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	4/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Unclear
Rationale: Rationale not provided for only including peer-reviewed publications	
2.Concerns regarding methods used to identify and/or select studies	Unclear/High
Rationale: Only 2 databases searched (and 6 texts), and search terms not reported; authors note "Our search criteria may not have yielded every published intervention study for these topic areas, but our findings represent all those found by the search procedure described above" ; no date restrictions provided	
3.Concerns regarding methods used to collect data and appraise studies	Low
Rationale: Duplicate data extraction	
4. Concerns regarding the synthesis	Unclear/High
Rationale: Studies and outcomes heterogeneous; overall mean effect sizes reported without confidence intervals or heterogeneity reported	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance? Results text focusses on describing characteristics of "the most effective" studies; within each category, mean effect sizes presented, with no measure of uncertainty and reported as "effective"	<input type="checkbox"/> Y <input type="checkbox"/> PY <input checked="" type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Yoshikawa 1995</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction?	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed? "A computer and manual search of the literature..."	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies assessed and documented?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? No clear pre-specification of methods for synthesis	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	1/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1. Concerns regarding specification of study eligibility criteria Rationale: Eligibility criteria were not unambiguous (restrictions not clear)	High
2. Concerns regarding methods used to identify and/or select studies Rationale: Search methods unclear (computer and manual search); no detail of methods used to select studies	High
3. Concerns regarding methods used to collect data and appraise studies Rationale: No detail of methods for extracting data; no assessing of study quality (risk of bias)	High
4. Concerns regarding the synthesis Rationale: Narrative synthesis, and synthesis in tables	Low
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes

<b>Zoritch 2000</b>	
<b>QUALITY OF REVIEW: AMSTAR</b>	
<b>Rate each point as yes (clearly done), no (clearly not done), can't answer, or not applicable</b>	<b>Judgement</b>
Was an 'a priori' design provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was there duplicate study selection and data extraction? Not reported	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was a comprehensive literature search performed?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the status of a publication used as an inclusion criterion? <i>If review indicates that there was a search for "grey literature" or "unpublished literature," indicate "yes."</i>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was a list of included and excluded studies provided? Excluded studies not provided	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Were the characteristics of the included studies provided?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA

Was the scientific quality of the included studies assessed and documented?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the scientific quality of the included studies used appropriately in formulating conclusions? Authors note that the trials had “ <i>significant methodological weakness</i> ”, however make strong conclusions regarding effectiveness of day care.	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Were the methods used to combine the findings of studies appropriate? Note the high level of statistical heterogeneity for IQ at 36 months (fixed-effect model was used)	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> CA <input type="checkbox"/> NA
Was the likelihood of publication bias assessed?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Was the conflict of interest (both review and included studies) stated? Review authors declare interests; funding/conflicts for included studies not reported	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> CA <input type="checkbox"/> NA
Total score	5/11
<b>QUALITY OF REVIEW: ROBIS</b>	
<b>Record concerns as low, high, or unclear with rationale for concern</b>	<b>Concern</b>
1.Concerns regarding specification of study eligibility criteria	Low
Rationale:	
2.Concerns regarding methods used to identify and/or select studies	Unclear/High
Rationale: No detail of efforts to minimise error in study selection	
3.Concerns regarding methods used to collect data and appraise studies	Unclear/High
Rationale: No detail of efforts to minimise error in data collection and study quality assessment	
4. Concerns regarding the synthesis	Unclear
Rationale: Note the high level of statistical heterogeneity for IQ at 36 months (with the fixed effect meta-analysis that was performed)	
Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	<input type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input checked="" type="checkbox"/> N <input type="checkbox"/> NI
Was the relevance of identified studies to the review's research question appropriately considered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
Did the reviewers avoid emphasizing results on the basis of their statistical significance?	<input type="checkbox"/> Y <input checked="" type="checkbox"/> PY <input type="checkbox"/> PN <input type="checkbox"/> N <input type="checkbox"/> NI
<b>RISK OF BIAS IN THE REVIEW</b>	<input type="checkbox"/> Low <input checked="" type="checkbox"/> High <input type="checkbox"/> Unclear

**Abbreviations:** CA: can't answer; N: no; NA: not applicable; NI: no information; PN: probably no; PY: probably yes; Y: yes