

Child Protection Evidence

Systematic review on

Parent/Child Interaction

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Table of contents

Summary	3
Background	3
Methodology	3
Findings of clinical question 1	4
1.1 Features of the parent-child interaction (neglect / emotional abuse)	4
1.2 Implications for practice	6
1.3 Research implications	6
1.4 Limitations of review findings	7
Other useful resources	7
Clinical question 1	7
Related publications	7
References	8
Appendix 1 – Methodology	10
Inclusion criteria.....	10
Confirmation of neglect	11
Search strategy	11
Pre-review screening and critical appraisal	22

Summary

This systematic review evaluates the scientific literature on parent-child interactions published up until **October 2014** and reflects the findings of eligible studies. The review aims to answer the following clinical question:

- What are the features of parent-child interactions amongst neglected and/or emotionally abused children aged 0-14 years?

Key findings:

- Only two studies to date have addressed emotional maltreatment.
- All practitioners involved with children have the opportunity to observe parent-child interactions. Children who experience poor parent-child interactions may fail to develop a secure attachment relationship with their parent, which can lead to long-term social and psychological problems. While neglect is a failure to provide adequate care, there are identifiable features in the interaction between neglected and/or emotionally abused children and their care-givers

Background

This systematic review evaluates the scientific literature on parent –child interactions up until October 2014 and reflects the findings of eligible studies. This literature predominantly relates to children less than six years of age. The review aims to answer the following clinical question:

- What are the features of parent-child interactions amongst neglected and/or emotionally abused children aged 0-14 years?

Methodology

This Parent-Child interaction review used the methodology and tools from the early years neglect and School-Age neglect reviews.

To summarise, a literature search was performed using a number of databases for all original articles and conference abstracts published since 1960. Supplementary search techniques were used to identify further relevant references. See [Appendix 1](#) for full methodology including search strategy and inclusion criteria.

Potentially relevant studies underwent full text screening and critical appraisal. To ensure consistency, ranking was used to indicate the level of confidence that abuse had taken place and also for study types.

Findings of clinical question 1

Features of the parent-child interaction amongst neglected / emotionally abused children

- 27 studies (28 articles) addressed this question¹⁻²⁸
- These 27 studies all met our inclusion criteria (early years / school aged neglect) and quality ranking of confirmation of neglect / emotional abuse (early years / school aged neglect)
- Two articles were published on the same study^{25,26}
- We wished to identify features in the primary carer-child relationship; unfortunately there are still no studies relating to fathers in the context of early neglect, thus this review addresses solely mother-child interactions.
- Age: Due to the varying ages encompassed in the studies, results are grouped by mean age; it was not possible to separate smaller age bands between 6 and 14 years
- Gender: One study analysed the results by the gender of the child but found no difference¹
- Two studies included fathers, but no study analysed the father-child relationship specifically^{3,16}

Influence of ethnicity and socio-economic group

- Among the included studies, 25/27 of the study populations were well-matched for ethnicity, maternal education, socio-economic grouping (insurance status for North American studies) and maternal age. In one study the maltreated mothers had lower educational attainment and were younger than the control mothers^{25,26}

1.1 Features of the parent-child interaction (neglect / emotional abuse)

Mean age 0-17 months

- The parents of the youngest children were not attuned to the infants and provided inconsistent attention
- The mothers used fewer commands and gave less positive feedback to their babies⁴

- The mothers lacked sensitivity⁵ and were uninvolved with the infants^{6,7}, providing little in the way of stimulation or positive interactions^{8,22}
- In response to the infant cues, mothers were either unpredictable and inconsistent¹⁸ or became extremely wound up by infant crying¹³
- The mothers perceived their infants as being irritating and demanding⁵

Mean age 18 months – 3 years

- Amongst the toddlers, the mothers remain withdrawn and uninvolved^{4,5} or lacking attunement or competence interacting with the children^{12,20}
- They may either ignore the child's cues for help or criticize the child^{17,21} or may in fact make no effort to relieve their child's distress¹⁹
- Parenting style within this age group was lacking in affection²³, empathy²⁴ or was controlling and hostile^{25,26}
- On measuring regulatory capacity in the form of respiratory sinus arrhythmia (RSA) the neglected child showed lower RSA levels while interacting with their mothers to complete a challenging task compared to controls²⁶
- The mothers were unresponsive to changes in the babies facial expressions²⁴
- Neglected children did not show any more negative reactivity than non-maltreated controls²⁸

Mean age 4-5 years

- In one study there was no difference between neglected children and controls in a structured play task¹
- The mother-child interaction in this age group is characterized by a low level of utterances between mother and child^{2,10,14}
- The parents are verbally aggressive in their disciplining of the child^{11,14}
- The neglectful mothers showed less positive parenting and more strict hostile control than non-maltreating mothers. The neglectful mothers showed a greater variation in positive parenting over time²⁵
- The children's perception is that their parents are unlikely to relieve their distress¹⁹, and are not perceived as loving by the child²⁷

Mean age 6-14 years

- Mothers self-reported that they were so caught up in themselves, they were unable to show or tell their child that they loved him / her²⁰

- The neglectful parents are more negative towards their children, demonstrating fewer positive behaviours with the child and giving more commands in comparison to controls³
- In a comparison of two-parent and single-mother households, there was no difference in the level of positive interaction between neglectful mothers and their children¹⁶
- The neglectful single mothers showed more negative interaction than neglectful mothers in two-parent households¹⁶
- Neglectful mothers are less likely to talk to their children about emotional experiences in an appropriate way⁹
- The children perceived their mothers as less likely to be supportive when they express emotions, particularly anger⁹
- An evaluation of emotionally neglectful parents demonstrated that they were lacking in mutual attunement. In addition, these parents were more demanding and showed less support or involvement with their children¹⁵

1.2 Implications for practice

- Careful observation and documentation of the parent-child interactions is an essential element in the recognition of the emotionally abused / neglected pre-school child
- It is a significant omission from the scientific literature that no studies have been conducted on neglect / emotional abuse between fathers and young children
- When evaluating children for possible neglect / emotional abuse, it is essential to obtain detailed reports from all those working with the family, including nursery nurses, health visitors, playschool teachers, etc
- It is important to determine the child's perception and expectations of their parents and what the parents view of their child is

1.3 Research implications

- There is an urgent need to conduct studies relating to neglect / emotional abuse of children by fathers, and to include the role of fathers in evaluating maternal neglect / emotional abuse
- Studies of neglect / emotional abuse in an international context outside North America would be of value as parenting practises differ widely across different cultures and are not currently represented in the literature (25/27 studies were conducted in the USA, one in Denmark and one in Spain)
- Future studies should incorporate naturalistic observations of primary carer-child interactions in addition to laboratory-based assessments
- There is a dearth of literature regarding parent-child interactions in children of school-age

1.4 Limitations of review findings

- The included studies of carer-child interactions were predominantly based on mother-child interactions
- Although many authors attempted to separate children suffering from neglect from those with mixed neglect and abuse, it is possible that some subjects will have experienced multiple forms of maltreatment
- The included studies predominantly related to neglect, and there are far fewer studies relating to emotional maltreatment (only two studies addressed emotional maltreatment)

Other useful resources

The review identified a number of interesting findings that were outside of the inclusion criteria. These are as follows:

Clinical question 1

Interventions

- Interventions to improve parenting and increase sensitivity of mothers to their infants²⁹

Indicators for neglect in parents

- A systematic review of how neglected children and their parents indicate their needs³⁰
- A comparison of parent-child interaction as measured by the global rating scale (GRS) versus health visitors subjective assessment showed that the latter focussed on maternal attributes more than the infant behaviour, those who did address the infant features had a higher correlation with the GRS³¹
- Paternal depression when a child was 3-years old was associated with increased odds of child neglect at age 5 [adjusted odds ratio: 1.94 (95% confidence interval: 1.18–3.19); $P < .01$]. This was independent of maternal and other risk factors³²

Related publications

To date there are no studies that have been carried out as a result of this review.

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Appendix 1 – Methodology

This Parent-Child interaction review used the methodology and tools from the early years neglect and School-Age neglect reviews.

This review aims to document the features observable in the parent-child interactions amongst children aged 0-14 who have been neglected or emotionally abused. To date, we have conducted two systematic reviews on the features in the child indicative of neglect and/or emotional abuse; our Early Years Neglect review, which includes data on children aged 0-6 and our School-Age Neglect review, which includes data on children aged 6-14. We were able to identify additional studies which include parent-child interaction data on children spanning both of these age ranges.

Inclusion criteria

Early years neglect

Inclusion	Exclusion
Children aged 0-5 completed years	Studies of sexual abuse
Documented features of the impact of neglect on the child during the period of exposure to neglect	Studies of physical abuse alone, or studies combining physical abuse and neglect, where the data from the neglect cases could not be extracted
Studies conducted in Organisation for Economic Co-operation and Development countries	Studies of management or complications of neglect
Child / carer interaction documented using standardized recording	Studies addressing risk factors for neglect
Studies of the interaction between the child and their primary carer	
Confirmation of neglect ranks A- C2	

School age neglect

Inclusion	Exclusion
Children aged 5-14 completed years (<i>studies included if majority of cases fall within 6 to 12 completed years</i>)	Studies of physical or sexual abuse alone, or studies combining physical or sexual abuse and neglect / emotional abuse, where the data from the neglect/ emotional abuse cases could not be extracted
Documented features of the impact of neglect / emotional abuse on the child during the period of exposure to neglect	Studies relating to secondary carer, either exclusively or where relevant data relating to primary carer cannot be extracted

/ emotional abuse	
Confirmed cases of neglect / emotional abuse (A-C Quality Standards for Confirmation of Neglect / Emotional Abuse)	Studies of management or complications of neglect
Studies conducted in Organisation for Economic Co-operation and Development countries	Studies addressing outcomes of neglect
	Studies with no data or documentation relating to the impact on the child (emotional, behavioural, psychological, developmental)
	Single case studies or case series of fewer than three cases, formal consensus articles, expert opinions, personal practice, review articles, systematic reviews
	Neglect / emotional abuse defined by unreferenced criteria / tool, not specified in our standards (D Quality Standards for Confirmation of Neglect / Emotional Abuse)

Confirmation of neglect

Ranking	Criteria used to define neglect
A1	Neglect/emotional abuse confirmed at child protection case conference, multi-disciplinary assessment, including social services or Court proceedings
A2	Diagnosis of emotional neglect/emotional abuse by clinical psychologist, psychiatrist or other mental health specialist
B	Neglect/emotional abuse confirmed by referenced criteria/tool
C1	Neglect/emotional abuse confirmed by unreferenced criteria/tool
C2	Observations of emotionally harmful carer-child interaction (not categorized as neglect/emotional abuse)
D	Neglect/emotional abuse/harmful carer-child interaction suspected or stated, with no supporting detail

Search strategy

The below table presents the search terms used in the 2014 Medline database search for early years neglect, truncation and wildcard characters were adapted to the different databases where necessary.

1. exp Child/	140. emotional* depriv*.ti,ab.
2. exp Child Preschool/	141. or/34-140
3. exp Infant, Newborn/	142. 15 and 33 and 141
4. exp Infant/	143. Family/
5. infancy.ti,ab.	144. Mother-Child Relations/
6. child*.ti,ab.	145. Maternal Behavior/
7. infant*.ti,ab.	146. Parent-Child Relations/
8. (baby or babies).ti,ab.	147. ((parent* or mother or father or maternal or paternal or carer*) adj3 (depression or depressed or depressive or dysthymi? or dysphori?)).ti,ab.
9. toddler*.ti,ab.	148. ((parent* or mother or father or maternal or paternal or carer*) adj3 mood disorder*).ti,ab.
10. neonat*.ti,ab.	149. ((parent* or mother or father or maternal or paternal or carer*) adj3 negative mood).ti,ab.
11. (pediatric* or paediatric*).ti,ab.	150. ((parent* or mother or father or maternal or paternal or carer*) adj3 partner violence).ti,ab.
12. or/1-11	151. ((parent* or mother or father or maternal or paternal or carer*) adj3 (anger or angry or angst or rage)).ti,ab.
13. limit 12 to (“all infant (birth to 23 months)” or “newborn infant (birth to 1 month)” or “infant (1 to 23 months)” or “preschool child (2 to 5 years)”)	152. ((parent* or mother or father or maternal or paternal or carer*) adj3 depress*).ti,ab.
14. (pre-school* or preschool* or preschool-age Child*).ti,ab.	153. ((parent* or mother or father or maternal or paternal or carer*) adj3 emotion*).ti,ab.
15. 13 or 14	154. ((parent* or mother or father or maternal or paternal or carer*) adj3 substance abuse).ti,ab.
16. (abus* adj neglect*).ti,ab.	155. ((parent* or mother or father or maternal or paternal or carer*) adj3 domestic violence).ti,ab.
17. (maltreat* or mistreat* or deprive* or ignor*).mp.	156. ((parent* or mother or father or maternal or paternal or carer*) adj3 punitive).ti,ab.
18. neglected.ti,ab.	157. ((parent* or mother or father or maternal or paternal or carer*) adj3 unavailab*).ti,ab.
19. neglectful.ti,ab.	158. ((parent* or mother or father or maternal or paternal or carer*) adj3 (instab* or unstab*)).ti,ab.
20. psychological neglect.ti,ab.	159. Learning disability/ or Learning disability.mp.
21. ((lack* or absen* or fail*) adj3 (care* or childcare)).ti,ab.	160. (spouse or partner).mp.
22. ((social* or emotional* or psychosocial* or contact or psychological*) adj3 (deprived or deprivation)).ti,ab.	161. (Interpersonal violence or IPV).mp.
23. overlook*.ti,ab.	162. Psychologica* unavailab*.mp.
24. neglect* psychological*.ti,ab.	
25. emotion* neglect*.ti,ab.	
26. emotion* abus*.ti,ab.	
27. emotion* harm*.ti,ab.	

28. child neglect.ti,ab.	163. Emotion* inatten*.mp.
29. neglect* child*.ti,ab.	164. Emotion* unattach*.mp.
30. emotion* depriv*.ti,ab.	165. Authoritative.mp.
31. emotional trauma.ti,ab.	166. Disengaged.mp.
32. ((neglect* or ignore or deprive*) adj1 (psychologic* or emotion*)).ti,ab.	167. Emotion* unavailab*.mp.
33. or/16-32	168. ((Parent* or mother or father or maternal or paternal) adj1 anger).ti,ab.
34. Failure to Thrive/	169. Rough handl*.mp.
35. (failure to thrive adj5 (emotion* or nonorganic or non-organic)).ti,ab.	170. Unresponsiv*.mp.
36. (failure to thrive adj5 (abus* or neglect* or maltreat* or mistreat* or depriv* or psych)).ti,ab.	171. Non-physical punishment.mp.
37. ((fail* or inadequa*) adj2 emotional support).ti,ab.	172. "Family Relations"/
38. (unkempt or ungroomed).ti,ab.	173. Interpersonal Relations/
39. Psychosocial Deprivation/	174. (child* adj3 (mock* or taunt* or denigrat* or threat* or hostile*)).mp.
40. unhealthy appearance?.ti,ab.	175. Inappropriate expectation*.mp.
41. exp Internal-External Control/	176. inappropriate development.mp.
42. (internal* adj3 extem*).ti,ab.	177. (over-protective or over protective*).ti,ab.
43. (anxiety or anxious* or anguish*).ti,ab.	178. **Parenting"/
44. (withdrawn or apath*).ti,ab.	179. (dysfunctional family or family dysfunction).ti,ab.
45. (indifferen* or disinterest*).ti,ab.	180. "Rejection (Psychology)"/
46. ((lack* or low or flat*) adj3 (affect or emotion*)).ti,ab.	181. Negative attribution*.mp.
47. (clingy or clinginess).ti,ab.	182. High criticism.mp.
48. ((attention or affection* or love) adj3 (inappropriate* or improper* or unsuitabl*)).ti,ab.	183. parent* unresponsiv*.mp.
49. ((mental or psychological* or emotional*) adj3 (stress* or distress*)).ti,ab.	184. Child Rearing/
50. internalization.ti,ab.	185. family interact*.ti,ab.
51. Irritable Mood/	186. home environment*.ti,ab.
52. ((emotion* or affect*) adj3 (labil* or regulat*)).ti,ab.	187. Neglect* mother*.ti,ab.
53. (aloof or avoid*).ti,ab.	188. over* critical.ti,ab.
	189. (families or family or dyad).ti,ab.
	190. or/143-189
	191. 15 and 33 and 190

54. Shyness/	192. assessment.mp.
55. ((avoid* or withdraw*) adj3 (contact or touch* or physical*)).ti,ab.	193. Diagnosis/
56. ((avoid* or withdraw*) adj3 social*).ti,ab.	194. diagnostic tool.mp.
57. unsociable.ti,ab.	195. assessment tool.mp. or “Severity of Illness Index”/
58. ((lack or poor* or avoid*) adj3 communicat*).ti,ab.	196. Needs Assessment/
59. (watchful or wary or vigilan*).ti,ab.	197. graded care profile.mp.
60. (unhappiness or unhappy).ti,ab.	198. (identification or identify).ti,ab.
61. (overly responsible or perfectionis*).ti,ab.	199. Pattern Recognition, Visual/
62. “ATTENTION DEFICIT and DISRUPTIVE BEHAVIOR DISORDERS”/	200. detect*.ti,ab.
63. Conduct Disorder/	201. Classification/
64. Aggression/	202. Decision Making/
65. ((aggression or aggressive*) adj3 (behavio* or escalat*)).ti,ab.	203. Early Diagnosis/
66. acting out.ti,ab.	204. screening.mp. or Mass Screening/
67. out of control.ti,ab.	205. “Risk Factors”/
68. ((chaotic* or challenging) adj3 behavio*).ti,ab.	206. HOME inventory.mp.
69. (bully* or bullie?).ti,ab.	207. Risk Assessment/
70. Anger/	208. Risk/
71. ((destructive* or disruptive*) adj3 behav*).ti,ab.	209. or/192-208
72. Impulsive Behavior/	210. 15 and 33 and 209
73. impulse control.ti,ab.	211. Environment/
74. (impulsive* or impulsivity or impulse control).ti,ab.	212. Hostile atmosphere.mp.
75. Developmental Disabilities/	213. Environment Design/
76. Child Development/	214. depriv*.ti,ab.
77. Child Behavior/	215. chao*.ti,ab.
78. Infant Behavior/	216. “Play and Playthings”/
79. Personality Development/	217. Absence of toys.mp.
80. ((chang* or alter* or deviat* or transition?) adj3 personality).ti,ab.	218. Absence of play.mp.
	219. Absence of stimulation.mp.
	220. home.ti,ab.
	221. buggy.mp.

81. Helplessness, Learned/	222. “Walkers”/
82. sad.ti,ab.	223. Infant Equipment/
83. Social Behavior/	224. (pram or pushchair).mp.
84. Attention Deficit Disorder with Hyperactivity/	225. stroller.mp.
85. avoidant attention.ti,ab.	226. ((view* or watch*) adj3 television).ti,ab.
86. (normative adj3 avoidance).ti,ab.	227. Social Environment/
87. (abandoned or abandonment?).ti,ab.	228. or/211-227
88. psychological neglect.ti,ab.	229. 15 and 33 and 228
89. ((lack* or absen* or fail*) adj3 (care* or childcare)).ti,ab.	230. 142 or 191 or 210 or 229
90. ((social* or emotional* or psychosocial* or contact or psychological*) adj3 (deprived or deprivation)).ti,ab.	231. Stress Disorders, Post-Traumatic/
91. “lack of supervison”.ti,ab.	232. sexual abuse.mp. or Sex Offenses/
92. unsupervised.ti,ab.	233. “Child Abuse, Sexual”/
93. (temper or hostile* pr hypervigilant*).ti,ab.	234. (Algeria\$ or Egypt\$ or Libya\$ or Morocco\$ or Tunisia\$ or Western Sahara\$ or Angola\$ or Benin or Botswana\$ or Burkina Faso or Burundi or Cameroon or Cape Verde or Central African Republic or Chad or Comoros or Congo or Djibouti or Eritrea or Ethiopia\$ or Gabon or Gambia\$ or Ghana or Guinea or Kenya\$ or Lesotho or Liberia or Madagasca\$ or Malawi or Mali or Mauritania or Mauritius or Mayotte or Mozambique\$ or Namibia\$ or Niger or Nigeria\$ or Reunion or Rwanda\$ or Saint Helena or Senegal or Seychelles or Sierra Leone or Somalia or South Africa\$ or Sudan or Swaziland or Tanzania or Togo or Uganda\$ or Zambia\$ or Zimbabwe\$ or China or Chinese or Hong Kong or Macao or Mongolia\$ or Taiwan\$ or Belarus or Moldova\$ or Russia\$ or Ukraine or Afghanistan or Armenia\$ or Azerbaijan or Bahrain or Cyprus or Cypriot or Georgia\$ or Iran\$ or Iraq\$ or Israel\$ or Jordan\$ or Kazakhstan or Kuwait or Kyrgyzstan or Lebanon\$ or Oman or Pakistan\$ or Palestine\$ or Qatar or Saudi Arabia or Syria\$ or Tajikistan or Turkmenistan or United Arab Emirates or Uzbekistan or Yemen or Bangladesh\$ or Bhutan or British Indian Ocean Territory or Brunei Darussalam or Cambodia\$ or India\$ or Indonesia\$ or Lao or People’s Democratic Republic or Malaysia\$ or Maldives or Myanmar or Nepal or Philippines\$ or Singapore or Sri Lanka or Thailand\$ or Timor Leste or Vietnam or Albania\$ or Andorra or Bosnia\$ or Herzegovina\$ or Bulgaria\$ or Croatia\$ or Estonia or Faroe Islands or Greenland or Liechtenstein or Lithuania\$ or Macedonia or Malta or maltese or Romania or Serbia\$ or Montenegro or Slovenia or Svalbard or
94. Child Behavior Disorders/	
95. (rage of raging or rageful).ti,ab.	
96. attun*.ti,ab.	
97. Nonverbal Communication/	
98. Sensory integration.mp.	
99. Dissociat*.ti,ab.	
100. **Dissociative Disorders”/	
101. Dysregulation.mp.	
102. Affect mirroring.mp.	
103. **Facial Expression”/	
104. Mind-mindedness.mp.	
105. Object Attachment/	
106. attachment.ti,ab.	
107. persecut*.ti,ab.	
108. Speech delay.mp.	
109. Language delay.mp.	

110. Language Disorders/ 111. Perspective taking.mp. 112. Demanding.mp. 113. Poor concentration.ti,ab. 114. listless*.mp. 115. Isolated.mp. 116. **"Social Isolation"/ 117. Inhibited.mp. 118. Reactive Attachment Disorder/ 119. Disinhibited.mp. 120. Social skills.mp. 121. Emotional skills.mp. 122. False positive affect.mp. 123. touch sensitive.mp. 124. Apparent compliance.mp. 125. Language comprehension deficit.mp. 126. Grasp of reality.mp. 127. Immatur*.ti,ab. 128. impatien*.ti,ab. 129. Socialization/ 130. cognitive delay.mp. 131. cognitive* stimulat*.ti,ab. 132. attachment disorder.mp. 133. eye contact.ti,ab. 134. *Stress, Psychological/ 135. stunting of growth.mp. 136. stunt* growth.mp. 137. Hospitalism.ti,ab. 138. environmental retardation.ti,ab. 139. affect deprivation.ti,ab.	Argentina\$ or Belize or Bolivia\$ or Brazil\$ or chile or Chilean or Colombia\$ or Costa Rica\$ or Cuba or Ecuador or El Salvador or French Guiana or Guatemala\$ or Guyana or Haiti or Honduras or Jamaica\$ or Nicaragua\$ or Panama or Paraguay or Peru or Puerto Rico or Suriname or Uruguay or Venezuela or developing countr\$ or south America\$).ti,sh. 235. "Africa South of the Sahara"/ 236. or/231-235 237. 230 not 236 238. limit 237 to yr="2013 - 2014"
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The below table presents the search terms used in the 2014 Medline database search for school-aged neglect.

1. exp child/	140. Language comprehension deficit.mp.
2. child*.mp.	141. Grasp of reality.mp.
3. school age child*.mp.	142. Immatur*.ti,ab.
4. pupil.tw.	143. impatien*.ti,ab.
5. (pediatric* or paediatric*).tw.	144. Socialization/
6. school child*.tw.	145. cognitive delay.mp.
7. Middle childhood.mp.	146. cognitive* stimulat*.ti,ab.
8. or/1-7	147. attachment disorder.mp.
9. exp Schools/	148. eye contact.ti,ab.
10. exp Education, Special/	149. *Stress, Psychological/
11. special education.mp.	150. stunting of growth.mp.
12. Elementary school*.tw.	151. stunt* growth.mp.
13. Junior high school*.tw.	152. Hospitalism.ti,ab.
14. middle school.mp.	153. environmental retardation.ti,ab.
15. Primary school.mp.	154. affect deprivation.ti,ab.
16. Key Stage 1.mp.	155. emotional* depriv*.ti,ab.
17. Key Stage 2.mp.	156. Hostility/
18. Key Stage 3.mp.	157. hostile behaviour.tw.
19. or/9-18	158. risk?taking.mp.
20. (or/9-18) and 8	159. psychosocial disorder*.mp.
21. 8 or 20	160. alcohol misuse.mp.
22. (abus* adj neglect*).tw.	161. substance misuse.mp.
23. (maltreat* or mistreat* or deprive* or abandon*).mp.	162. Smoking/
24. neglected.ti,ab.	163. truancy.mp.
25. neglectful.ti,ab.	164. (indiscriminate adj3 (familiarity or socialism or attachment)).tw.
26. neglect.tw.	165. indiscriminate friendliness.mp.
27. ((lack* or absen* or fail*) adj3 care*).tw.	166. Juvenile Delinquency/
28. neglect* psychological*.tw.	167. (anti social or antisocial or anti-social).mp.

29. emotion* neglect*.ti,ab.	168. Self Concept/
30. emotion* abus*.ti,ab.	169. self esteem.tw.
31. emotion* harm*.ti,ab.	170. self confidence.tw.
32. child neglect.ti,ab.	171. emotional recognition.tw.
33. neglect* child*.ti,ab.	172. emotional dysregulation.tw.
34. emotion* depriv*.ti,ab.	173. (dysregulation adj3 emotion*).tw.
35. emotional trauma.ti,ab.	174. attention seeking.tw.
36. Psychological maltreat*.tw.	175. (Sociali?ation adj3 behavio?r).tw.
37. ((neglect* or deprive*) adj1 (psychologic* or emotion*)).tw.	176. (emotional adj2 (skills or literacy or intelligence)).mp.
38. Supervis* neglect.tw.	177. (cognitive adj2 (impairment or deficit)).tw.
39. parental supervision.tw.	178. Bullying/
40. unsupervised.tw.	179. bullying.tw.
41. lack of supervision.tw.	180. peer interaction.tw.
42. (lack adj3 supervision).tw.	181. peer acceptance.mp.
43. psychological neglect.tw.	182. Intelligence/
44. medical neglect.mp.	183. educational attainment.mp.
45. Nutrition* neglect.mp.	184. (poor adj2 (balance or coordination or vocabulary or concentration)).tw.
46. physical neglect.mp.	185. poor expressive language.tw.
47. (neglect* adj3 (care or medical or physical or psychological or supervisory or emotional or educational)).tw.	186. (lack adj2 (focus or concentration)).tw.
48. ((noncompliance or poor compliance) adj3 (treatment or therapy or intervention)).tw.	187. ((inadequate or poor) adj3 nutrition).tw.
49. (failure to comply adj3 (treatment or therapy or intervention)).tw.	188. lack of food.tw.
50. (educat* adj3 (failure or neglect)).mp.	189. failed appointment*.tw.
51. inadequate supervision.tw.	190. missed appointment*.tw.
52. or/22-51	191. No-show.tw.
53. Failure to Thrive/	192. failure to turn up.tw.
54. (failure to thrive adj5 (emotion* or nonorganic or non-organic)).ti,ab.	193. (non-attendance or non attendance).tw.
55. (failure to thrive adj5 (abus* or neglect* or maltreat* or mistreat* or depriv* or psych)).ti,ab.	194. "did not attend".tw.
	195. Phthiraptera/
	196. Pediculus/

56. ((fail* or inadequa*) adj2 emotional support).ti,ab.	197. (lice or louse or nits).tw.
57. (unkempt or ungroomed).ti,ab.	198. Mother-child aggression.tw.
58. Psychosocial Deprivation/	199. Father-child aggression.tw.
59. unhealthy appearance?.ti,ab.	200. Parent-child aggression.tw.
60. exp Internal-External Control/	201. Carer-child aggression.tw.
61. (internal* adj3 extem*).ti,ab.	202. Mother-Child Relations/
62. (anxiety or anxious* or anguish*).ti,ab.	203. Failure to enrol.tw.
63. (withdrawn or apath*).ti,ab.	204. ((guilt or shame) adj3 proneness).tw.
64. (indifferen* or disinterest*).ti,ab.	205. (Obesity adj3 neglect*).mp.
65. ((lack* or low or flat*) adj3 (affect or emotion*)).ti,ab.	206. Disab* child*.mp.
66. (clingy or clinginess).ti,ab.	207. learning needs.mp.
67. ((attention or affection* or love) adj3 (inappropriate* or improper* or unsuitabl*).ti,ab.	208. non-school attendance.mp.
68. ((mental or psychological* or emotional*) adj3 (stress* or distress*).ti,ab.	209. Faltering growth.mp.
69. internalization.ti,ab.	210. Peer Group/
70. Irritable Mood/	211. "Rejection (Psychology)"/
71. ((emotion* or affect*) adj3 (labil* or regulat*).ti,ab.	212. Social Desirability/
72. (aloof or avoid*).ti,ab.	213. Adaptation, Psychological/
73. depressive symptom*.tw.	214. *Emotions/
74. Shyness/	215. *Fantasy/
75. ((avoid* or withdraw*) adj3 (contact or touch* or physical*).ti,ab.	216. Crime Victims/
76. ((avoid* or withdraw*) adj3 social*).ti,ab.	217. Sociometric Techniques/
77. (unsociable or lying or cheat*).tw.	218. Educational Status/
78. ((lack or poor* or avoid*) adj3 communicat*).ti,ab.	219. Academic Achievement.mp.
79. (watchful or wary or vigilan*).ti,ab.	220. Peer Relations.mp.
80. (unhappiness or unhappy).ti,ab.	221. Victimi*.mp.
81. (overly responsible or perfectionist*).ti,ab.	222. Emotional Adjustment.mp.
82. "ATTENTION DEFICIT and DISRUPTIVE	223. or/53-222
	224. 21 and 52 and 223
	225. (physical abuse* adj3 neglect*).mp.
	226. (sexual abuse* adj3 neglect*).mp.

BEHAVIOR DISORDERS”/	227. (post traumatic stress disorder* or PTSD).mp.
83. Conduct Disorder/	228. Stress Disorders, Post-Traumatic/
84. Aggression/	229. or/225-228
85. ((aggression or aggressive*) adj3 (behavio* or escalat*)).ti,ab.	230. 22 or 24 or 25 or 26 or 32
86. acting out.ti,ab.	231. 21 and 229 and 230
87. out of control.ti,ab.	232. ((bmi or body mass index) adj2 (gain or loss or change)).tw.
88. ((chaotic* or challenging) adj3 behavio*).ti,ab.	233. ((maltreat or neglect*) adj3 (obesity or obese or overweight or over weight)).mp.
89. (bully* or bullie?).ti,ab.	234. ((maltreat* or neglect*) adj3 (adiposity or overeating or weight gain or body weight)).mp.
90. Anger/	235. (maltreat* or neglect*).mp.
91. ((destructive* or disruptive*) adj3 behav*).ti,ab.	236. 232 and 235
92. Impulsive Behavior/	237. 233 or 234 or 236
93. impulse control.ti,ab.	238. 21 and 237
94. (impulsive* or impulsivity or impulse control).ti,ab.	239. ((maltreat* or neglect*) adj3 (obesity or obese or overweight or over weight)).mp.
95. Developmental Disabilities/	240. 234 or 236 or 239
96. Child Development/	241. 21 and 240
97. Child Behavior/	242. 238 or 241
98. Infant Behavior/	243. 224 or 231 or 242
99. Personality Development/	244. (Adolescen* or teen* or youth).mp.
100. ((chang* or alter* or deviat* or transition?) adj3 personality).ti,ab.	245. “Young Adult”/
101. Helplessness, Learned/	246. “Africa South of the Sahara”/
102. sad.ti,ab.	247. (Algeria\$ or Egypt\$ or Liby\$ or Morocc\$ or Tunisia\$ or Western Sahara\$ or Angola\$ or Benin or Botswana\$ or Burkina Faso or Burundi or Cameroon or Cape Verde or Central African Republic or Chad or Comoros or Congo or Djibouti or Eritrea or Ethiopia\$ or Gabon or Gambia\$ or Ghana or Guinea or Keny\$ or Lesotho or Liberia or Madagasca\$ or Malawi or Mali or Mauritania or Mauritius or Mayotte or Mozambiq\$ or Namibia\$ or Niger or Nigeria\$ or Reunion or Rwand\$ or Saint Helena or Senegal or Seychelles or Sierra Leone or Somalia or South Africa\$ or Sudan or Swaziland or Tanzania or Togo or Ugand\$ or Zambia\$ or Zimbabw\$ or China or Chinese or Hong Kong or Macao or Mongolia\$ or Taiwan\$ or Belarus or
103. Social Behavior/	
104. Attention Deficit Disorder with Hyperactivity/	
105. avoidant attention.ti,ab.	
106. (normative adj3 avoidance).ti,ab.	
107. (abandoned or abandonment?).ti,ab.	
108. ((social* or emotional* or psychosocial* or contact or psychological*) adj3 (deprived or deprivation)).ti,ab.	
109. (temper or hostile* pr hypervigilan*).ti,ab.	

110. Child Behavior Disorders/	Moldov\$ or Russia\$ or Ukraine or Afghanistan or
111. (rage of raging or rageful).ti,ab.	Armenia\$ or Azerbaijan or Bahrain or Cyprus or
112. Nonverbal Communication/	Cypriot or Georgia\$ or Iran\$ or Iraq\$ or Jordan\$ or
113. Sensory integration.mp.	Kazakhstan or Kuwait or Kyrgyzstan or Leban\$ or
114. Dissociat*.ti,ab.	Oman or Pakistan\$ or Palestin\$ or Qatar or Saudi
115. **"Dissociative Disorders"/	Arabia or Syria\$ or Tajikistan or Turkmenistan or
116. Affect mirroring.mp.	United Arab Emirates or Uzbekistan or Yemen or
117. **"Facial Expression"/	Bangladesh\$ or Bhutan or British Indian Ocean
118. Mind-mindedness.mp.	Territory or Brunei Darussalam or Cambodia\$ or
119. Object Attachment/	India\$ or Indonesia\$ or Lao or People's Democratic
120. attachment.ti,ab.	Republic or Malaysia\$ or Maldives or Myanmar or
121. persecut*.ti,ab.	Nepal or Philippin\$ or Singapore or Sri Lanka or
122. Speech delay.mp.	Thai\$ or Timor Leste or Vietnam or Albania\$ or
123. Language delay.mp.	Andorra or Bosnia\$ or Herzegovina\$ or Bulgaria\$ or
124. Language Disorders/	Croatia\$ or Faroe Islands or Greenland or
125. Perspective taking.mp.	Liechtenstein or Lithuani\$ or Macedonia or Malta
126. Demanding.mp.	or maltese or Romania or Serbia\$ or Montenegro
127. Poor concentration.ti,ab.	or Svalbard or Argentina\$ or Belize or Bolivia\$ or
128. listless*.mp.	Brazil\$ or Colombia\$ or Costa Rica\$ or Cuba or
129. Delinquen*.tw.	Ecuador or El Salvador or French Guiana or
130. Isolated.mp.	Guatemala\$ or Guyana or Haiti or Honduras or
131. **"Social Isolation"/	Jamaica\$ or Nicaragua\$ or Panama or Paraguay or
132. Inhibited.mp.	Peru or Puerto Rico or Suriname or Uruguay or
133. Reactive Attachment Disorder/	Venezuela or developing countr\$ or south
134. Disinhibited.mp.	America\$).ti,sh.
135. Social skills.mp.	248. or/244-247
136. Depression/	249. 243 not 248
137. False positive affect.mp.	250. limit 249 to (humans and yr="2012 -Current"
138. touch sensitive.mp.	and "child (6 to 12 years)")
139. Apparent compliance.mp.	

Pre-review screening and critical appraisal

Papers found in the database and hand searches underwent three rounds of screening before they were included in this update. The first round was a title screen where papers that obviously did not meet the inclusion criteria were excluded. The second was an abstract screen where papers that did not meet the inclusion criteria based on the information provided in the abstract were excluded. In this round the pre-review screening form was completed for each paper. These first two stages were carried out by clinical experts. Finally a full text screen with a critical appraisal was carried out by members of the clinical expert sub-committee. Critical appraisal forms were completed for each of the papers reviewed at this stage. Examples of the pre-review screening and critical appraisal forms used in previous reviews are available on request (clinical.standards@rcpch.ac.uk).