

# Child Protection Evidence

## Systematic review on

### Early Years Neglect

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While the format of each review has been revised to fit the style of the College and amalgamated into a comprehensive document, the content remains unchanged until reviewed and new evidence is identified and added to the evidence-base. Updated content will be indicated on individual review pages.

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## Summary

Neglect has varying definitions across agencies and countries. However, evidence clearly shows that neglect of infants and young children has far-reaching consequences(1, 2). For the purposes of this review, we have focused on neglect and emotional abuse in children aged 0 – 6 years using the World Health Organization definitions. Practitioners often lack confidence in identifying the emotionally neglected / abused infant or toddler and thus there is delay in implementing appropriate interventions(3).

This systematic review evaluates the scientific literature on early years neglect in children published up until **October 2014** and reflects the findings of eligible studies. The review aims to answer one clinical question:

- What are the emotional, behavioural and developmental (EBD) features in the child indicative of any type of neglect / emotional abuse?

### Key findings:

- Between 2011 and 2014, 11 further studies have been identified, of which six are high quality case-control studies. These have reinforced the original findings but added further information in relation to the moral and emotional behaviour of the child as well as maternal sensitivity and mother-child interaction
- 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

## Background

This systematic review evaluates the scientific literature on early years neglect in children published up until October 2014 and reflects the findings of eligible studies. The review aims to answer one clinical question:

1. What are the emotional, behavioural and developmental (EBD) features in the child indicative of any type of neglect / emotional abuse?

## Methodology

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

### What are the emotional, behavioural and developmental (EBD) features in the child indicative of any type of neglect / emotional abuse?

- Of 189 studies reviewed from the international literature, 43 articles addressed this question(2, 4-45)
- These 43 articles all met our inclusion criteria and quality ranking of confirmation of neglect / emotional abuse
- Age: Detailed age breakdown was not given, thus results are summarised in age bands based on the mean age of the cases
- Gender: One study addressed gender and found that amongst the maltreated children, girls had the greater delay in syntactic language development(18)

### Influence of ethnicity and socio-economic group

In the case-control studies, the groups were well-matched for ethnicity, maternal education, socio-economic grouping (insurance status for North American studies) and maternal age.

## 1.1 Identifiable, emotional, behavioural and developmental features in children

### Age 0-20 months

Eight studies describe several features in children(6, 7, 10, 24, 27, 38, 41, 42):

- Assessment of attachment status, evaluated by Strange Situation(46), comparing neglected with abused and / or control children(6, 7, 24)
- Neglected children showed avoidant attachment(7, 24)
- Neglected children also showed more insecure-disorganised attachment(24)
- Neglected children did not show any difference in their play complexity from controls, although play was strongly influenced by cognitive function performance(42)

- In interactions with their mother, children demonstrated passive and withdrawn behaviour(10)
- Children with neglect and failure to thrive (FTT) had a lower developmental quotient than those with neglect or FTT alone(27)
- Language delay was particularly prominent in toddlers whose mothers suffered from depression(38)
- One study did not demonstrate delayed cognitive play abilities in neglected / emotionally abused one year old infants in comparison to controls(41)

## Age 20-30 months

Five studies described several features in this age group(5, 9, 12, 42, 45):

- Evaluation of neglected toddlers during play demonstrated greater negativity than seen in controls(12)
- Neglected children demonstrated less positive social interaction in comparison to abused children or controls(9). Neglected children were also the most passive, and spent more time alone than the other two groups
- With increasing test difficulty, neglected children showed greater memory deficits than physically abused children or controls(5)
- Again there was no difference between controls and neglected children on play complexity, however play was strongly influenced by cognitive function performance(42)
- A longitudinal study of toddlers showed that neglect children exhibited more internalising behaviours(45). Some toddlers had co-existent internalising and externalising features, which were correlated to parenting style

## Age 3-4 years

Five studies described certain features in this age group (4, 11, 20, 22, 45):

- Developmental delay, in particular language delay, was apparent in the neglected children in comparison to physically abused children or controls(4, 11)
  - Receptive language (auditory comprehension quotient) and expressive language development (verbal ability quotient) were particularly delayed(4, 11)
  - The neglected children showed the lowest scores on auditory and verbal scores(11)
- In observing play, both free and with parents, the neglected toddlers had a greater negative affect than physically abused children or controls(22)
- There was no demonstrable difference in discriminating emotions between emotionally abused, physically abused or neglected children. An allowance was made for intelligence

quotient (IQ). However, all of these groups showed less ability to discriminate emotions than those with normal IQ(20)

- One study found that children exhibited slightly elevated externalising behaviour over time, aged 2-3 and 5-6 years. Some children exhibited externalising and internalising behaviour(45)

## Age 4-6 years

Fifteen studies described features in this age group(18, 21, 23, 25, 26, 28-30, 33-35, 37, 39, 44, 45):

- Language delay becomes more evident as children grow older, with neglected children demonstrating more syntactic delays and producing less complex language than controls. The children also showed reduced vocabulary(18)
  - Maltreated girls showed a greater language delay than maltreated boys(18)
  - It is notable that the maternal verbal IQ was lower amongst the neglectful mothers, in comparison to controls(18)
- Neglectful children showed the least number of social interactions in comparison to controls and abused children(21)
  - Neglected children also showed cognitive deficits and disruptive behaviour(21)
  - Teachers rated neglected children's behaviour as worse than the controls and abused children(21)
- Neglected children showed an increase in conduct problems in comparison to abused children and controls (as rated by mothers)(30)
- The neglected children's perception of others showed they were less likely to expect parents to relieve their distress or to relive distress in others, in comparison to abused children or controls(26)
- Neglected children were more likely to demonstrate undercontrolled / ambivalent emotional responses to simulated inter-adult aggression(28)
- Neglected children had more difficulty discriminating emotional expressions (particularly between angry, sad and fearful expressions) than physically abused children or controls. Neglected children also had a predilection for selecting sad faces(29)
- Emotional knowledge, based on labelling, recognising and matching to situations was examined in the context of harsh punitive parenting among neglected and control children. Punitive parenting did not have an impact, however the more severe the neglect, the poorer the child's emotional knowledge(37)
- Low IQ has an influence on emotional knowledge(37)
- Neglected children showed low self-esteem and the lowest scores on positive self-representation in comparison to controls, physically or sexually abused children(39)

- In assessing attachment, the neglected children demonstrated more avoidant attachment and more disorganised markers, specifically more frightening markers than controls. Overall, neglected children were more insecurely attached than controls(35, 43)
  - Neglected children depicted their mother as being less available to them than controls(43)
  - Neglected children perceived their relationship with their mothers to be less fulfilling, safe and reliable(35)
- Neglected children were more likely to perceive others as hurt, sad or anxious than physically abused children or controls. They perceived themselves as opposing or angry towards others and had a tendency to view themselves as anxious and ashamed(44)
- Neglected children showed more dissociation than controls, which was linked to the chronicity of the neglect. Neglected children had poor peer relationships in comparison to controls(25)
- Studies of moral development demonstrated that neglected children showed more cheating and less rule-compatible behaviour than controls(23)
- In evaluating children’s responses to their own and other children’s ‘moral transgressions’ (the appropriateness of hitting, kicking, or biting another child, causing another child psychological distress, not listening to the teacher or keeping quiet during nap time, or leaving class without permission) neglected children perceived themselves and others as equally deserving of punishment for transgressions(34)
- A measure of physiological regulatory capacity, respiratory sinus arrhythmia (RSA) was performed on children prior to and during a parent-child interaction(33). The majority of children showed suppression of the RSA when moving from baseline to interacting with their mothers, but there was no difference between neglected children and controls(33).

## **The manifestation of EBD child features through early childhood**

Several longitudinal cohort studies described manifestation of EBD child features through early childhood(2, 8, 13-17, 19, 31, 36, 40):

- The attachment pattern demonstrated by neglected children changed from ambivalent-insecure in those aged 12 months to avoidant in those aged 18 months, however some are classified as ‘secure’(15, 16)
  - Children who were anxiously attached at 1-18 months became angry, frustrated and non-compliant with more negative affect than controls by two years of age. The neglected children were worse at coping than both abused children and controls(16)

- The emotionally abused children were anxiously attached at 18 months and, by 24 months, showed more anger and frustration than controls(16)
- By 42 months, the neglected children showed more apathy / withdrawal and hyperactivity / distractibility(16)
- Crittenden et al showed how neglected children aged 12 months onwards displayed aggressive and resistant behaviour towards their carers, particularly up to 2.25 years of age(8)
- Psychological neglect at age three was significantly associated with internalising and externalising behaviour. Neglect at age three did not predict changes in the child's behaviour and development between the ages of three to five years. Cognitive development was markedly impaired by five years of age(13)
  - By five years of age, teachers noted neglected children experiencing difficult peer relationships
- Neglected children showed persistent cognitive delay from 18 – 36 months(31)
- Children who were neglected prior to the age of four showed greater language delay once aged over four years, compared to controls(19)
- Toth et al reported that neglected three to four year old children perceived their parents less positively over time and had more negative self-representations(40)
- The Mother Child Interaction Research project (known as the Minnesota study) evaluated developmental sequelae from children aged 3-24 months, separated into an emotionally abused cohort and a neglected cohort. The emotionally abused children showed a lower developmental quotient by 24 months, compared to physically abused, neglected and control children. The neglected children showed a declining function in development and play over time. In addition, they were anxious / avoidant at 18 months, progressing to angry, frustrated and non-compliant by 24 months. These children also had a low coping score(17)
- Further results from the Minnesota study focused on children from birth to six years of age. Neglected children at 54 months of age showed greater dependency and by 64 months they showed more self-destructive, inattentive and overactive behaviour. They were rated by teachers to be anxious, withdrawn, unpopular, aggressive and obsessive-compulsive in comparison to abused children and controls. Teachers rated the children as lacking humour, showing little sensitivity and empathy, as well as being poorer at following directions and expressing themselves in comparison to control groups. Emotionally abused children followed from age 18 – 42 months showed a mixed pattern of early behaviours, becoming less persistent and showing less enthusiasm for tasks than controls at 42 months(2)
- Evaluating neglected children aged four to five years showed poorer emotional knowledge over time, compared to controls, after controlling for IQ(36)

## 1.2 Implications for practice

- Given the delay in language, both receptive and expressive, in neglected / emotionally abused children, it is essential that all practitioners working with pre-school children are trained in normal child development
- Important attachment disorders are recognised in young infants and toddlers and warrant formal evaluation by professionals trained in infant mental health, as many features described in neglected / emotionally abused children overlap with those found in children suffering from autistic spectrum disorder or attention deficit hyperactivity disorder
- Careful observation and recording of the infant-carer interaction will help to identify neglected / emotionally abused toddlers at an early stage, enabling appropriate assessment and intervention
- There are clearly identifiable features in the pre-school child who is being neglected and / or emotionally abused, thus it is incumbent upon all health practitioners working with these children to be aware of the indicators that they may identify

## 1.3 Research implications

- Although it is recognised that many children suffer from multiple forms of abuse or neglect, future studies would benefit from clearly delineating the subcategories of children and, in particular, the definitions that have been used for neglect or emotional abuse
- There is a dearth of literature relating to neglect / emotional abuse from outside North America, and given the cultural context of neglect, further international studies are warranted

## 1.4 Limitations of review findings

- Although authors attempted to separate children experiencing “pure neglect” or “emotional abuse”, it is likely that many children were subjected to more than one form of abuse or neglect. Thus the features described may overlap with those found in both emotional abuse and other forms of abuse or neglect
- Unfortunately the age bands selected for studying the EBD features in children did not precisely match the age bands in those studies focusing on parent-child interactions
- Included studies predominantly addressed neglect, with relatively less research into emotional abuse of infants and toddlers.

## 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

#### Faltering growth

- One study assessed the catch-up growth of long term physically neglected and emotionally abused pre-school children and determined that the growth failure was reversible after one year in foster care(47)

#### Incidence of child neglect

- A Canadian incidence study during 1998 noted that 40% of investigations were due to neglect and 19% emotional maltreatment(48)
- Another Canadian incidence study from 2003 recorded the prevalence of neglect and emotional abuse with relevant associated risk factors(49, 50)
- The UK Framework for the Assessment of Children in Need and Their Families identifies the statutory basis for assessment in the UK (+ working together to safeguard children)(51)
- An American statement on screening for family and intimate partner violence 6(52)
- For the period 2008-9 the incidence of neglect was 48% and emotional abuse 24% in Wales, UK 7(53)

#### Prevalence of Emotional Abuse

- A meta-analysis of 29 studies determined the prevalence of emotional abuse of 3/1000 children for studies using an informant versus 363/1000 using self-report measures(54)

#### Consequences of extreme early neglect

- MRI studies of children experiencing severe institutional neglect demonstrated reduced cerebellar volume(55)

#### Long term consequences

- Early adverse childhood experiences (including emotional abuse) are associated with an increased risk of premature death(56)

- Overarching study summarising the conclusions of the Minnesota Study (The Mother Child Interaction Research project) identifying the developmental sequelae of infant maltreatment(17)
- Early childhood neglect (aged 0-2 years) is associated with aggression at age 4-8 years(57)
- There has been an increase in animal data to suggest that early maltreatment including neglect can affect methylation of brain-derived neurotrophic factor (BDNF) which may lead to altered BDNF gene expression in future offspring. This has been association with perpetuation of abnormal care taking behaviour(58)

## Tools

- The Cleveland Child Abuse Potential Scale (C-CAPS) was piloted to determine if it could effectively distinguish between children who were maltreated, at risk, and controls. The instrument was able to correctly classify 85% of control cases and 76% of Maltreatment cases(59)

## Related publications

Publication arising from early years neglect review

Naughton AM, Maguire SA, Mann MK, Lumb RC, Tempest V, Gracias S, Kemp AM. Emotional, behavioural, and developmental features indicative of neglect or emotional abuse in preschool children: a systematic review. *JAMA Pediatrics*. 2013;167(8):769-775

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## Appendix 1 – Methodology

We performed an all-language literature search of original articles, their references and conference abstracts published since 1960. The initial search strategy was developed across OVID Medline databases using keywords and Medical Subject Headings (MeSH headings) and was modified appropriately to search the remaining bibliographic databases. The search sensitivity was augmented by the use of a range of supplementary ‘snowballing’ techniques including consultation with subject experts and relevant organisations, and hand searching selected websites, non-indexed journals and the references of all full-text articles.

We limited our search strategy to Organisation for Economic Co-operation and Development populations due to similarities in culture and patterns of health status.

Identified articles, once scanned for duplicates and relevancy, were transferred to a purpose-built Microsoft Access database to coordinate the review and collate critical appraisal data. Relevant studies with an English-language version available were scanned for eligibility by the lead researcher and selected for review.

Standardised data extraction and critical appraisal forms were based on criteria defined by the National Health Service’s Centre for Reviews and Dissemination(60). We also used a selection of systematic review advisory articles to develop our critical appraisal forms(36, 61-64). Articles were independently reviewed by two reviewers. A third review was undertaken to resolve disagreement between the initial reviewers when determining either the evidence type of the article or whether the study met the inclusion criteria. Decisions related to inclusion and exclusion criteria were guided by Cardiff Child Protection Systematic Reviews, who laid out the basic parameters for selecting the studies.

Our panel of reviewers included paediatricians, psychologists, psychiatrists, social science researchers, information specialists and social workers. All reviewers underwent standardised critical appraisal training, based on the CRD critical appraisal standards(36), and this was supported by a dedicated electronic critical appraisal module.

We included all studies addressing neglect, emotional abuse or emotional neglect in children less than six years of age. We combined these latter two conditions since, in practice, these descriptions appear concurrently, and this acknowledges the broader term of ‘psychological maltreatment’ as defined by the American Professional Society on the Abuse of Children (1995)(65). Among international definitions of neglect and emotional abuse, we opted for those of the World Health Organization, as follows:

- Neglect (including emotional neglect) is defined as:

“The failure of a parent to provide for the development of the child – where the parent is in a position to do so – in one or more of the following areas: health, education, emotional development, nutrition, shelter and safe living conditions. Neglect is distinguished from circumstances of poverty in that neglect can occur only in cases where reasonable resources are available to the family or caregiver.”(66)

- Emotional abuse is defined as:

“Emotional abuse includes the failure of a caregiver to provide an appropriate and supportive environment, and includes acts that have an adverse effect on the emotional health and development of a child. Such acts include restricting a child’s movements, denigration, ridicule, threats and intimidation, discrimination, rejection and other non-physical forms of hostile treatment(66)”.

## Inclusion criteria

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	

## 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
12. or/1-11	
13. limit 12 to (“all infant (birth to 23 months)” or “newborn infant (birth to 1 month)” or “infant (1 to	

<p>23 months)” or “preschool child (2 to 5 years)”</p> <p>14. (pre-school* or preschool* or preschool-age Child*).ti,ab.</p> <p>15. 13 or 14</p> <p>16. (abus* adj neglect*).ti,ab.</p> <p>17. (maltreat* or mistreat* or deprive* or ignor*).mp.</p> <p>18. neglected.ti,ab.</p> <p>19. neglectful.ti,ab.</p> <p>20. psychological neglect.ti,ab.</p> <p>21. ((lack* or absen* or fail*) adj3 (care* or childcare)).ti,ab.</p> <p>22. ((social* or emotional* or psychosocial* or contact or psychological*) adj3 (deprived or deprivation)).ti,ab.</p> <p>23. overlook*.ti,ab.</p> <p>24. neglect* psychological*.ti,ab.</p> <p>25. emotion* neglect*.ti,ab.</p> <p>26. emotion* abus*.ti,ab.</p> <p>27. emotion* harm*.ti,ab.</p> <p>28. child neglect.ti,ab.</p> <p>29. neglect* child*.ti,ab.</p> <p>30. emotion* depriv*.ti,ab.</p> <p>31. emotional trauma.ti,ab.</p> <p>32. ((neglect* or ignore or deprive*) adj1 (psychologic* or emotion*)).ti,ab.</p> <p>33. or/16-32</p> <p>34. Failure to Thrive/</p> <p>35. (failure to thrive adj5 (emotion* or nonorganic or non-organic)).ti,ab.</p> <p>36. (failure to thrive adj5 (abus* or neglect* or maltreat* or mistreat* or depriv* or psych)).ti,ab.</p> <p>37. ((fail* or inadequa*) adj2 emotional support).ti,ab.</p>	<p>paternal or carer*) adj3 partner violence).ti,ab.</p> <p>151. ((parent* or mother or father or maternal or paternal or carer*) adj3 (anger or angry or angst or rage)).ti,ab.</p> <p>152. ((parent* or mother or father or maternal or paternal or carer*) adj3 depress*).ti,ab.</p> <p>153. ((parent* or mother or father or maternal or paternal or carer*) adj3 emotion*).ti,ab.</p> <p>154. ((parent* or mother or father or maternal or paternal or carer*) adj3 substance abuse).ti,ab.</p> <p>155. ((parent* or mother or father or maternal or paternal or carer*) adj3 domestic violence).ti,ab.</p> <p>156. ((parent* or mother or father or maternal or paternal or carer*) adj3 punitive).ti,ab.</p> <p>157. ((parent* or mother or father or maternal or paternal or carer*) adj3 unavailab*).ti,ab.</p> <p>158. ((parent* or mother or father or maternal or paternal or carer*) adj3 (instab* or unstab*)).ti,ab.</p> <p>159. Learning disability/ or Learning disability.mp.</p> <p>160. (spouse or partner).mp.</p> <p>161. (Interpersonal violence or IPV).mp.</p> <p>162. Psychologica* unavailab*.mp.</p> <p>163. Emotion* inatten*.mp.</p> <p>164. Emotion* unattach*.mp.</p> <p>165. Authoritative.mp.</p> <p>166. Disengaged.mp.</p> <p>167. Emotion* unavailab*.mp.</p> <p>168. ((Parent* or mother or father or maternal or paternal) adj1 anger).ti,ab.</p> <p>169. Rough handl*.mp.</p> <p>170. Unresponsiv*.mp.</p> <p>171. Non-physical punishment.mp.</p> <p>172. “Family Relations”/</p> <p>173. Interpersonal Relations/</p> <p>174. (child* adj3 (mock* or taunt* or denigrat* or</p>
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38. (unkempt or ungroomed).ti,ab.	threat* or hostile*).mp.
39. Psychosocial Deprivation/	175. Inappropriate expectation*.mp.
40. unhealthy appearance?.ti,ab.	176. inappropriate development.mp.
41. exp Internal-External Control/	177. (over-protective or over protective*).ti,ab.
42. (internal* adj3 extem*).ti,ab.	178. **Parenting”/
43. (anxiety or anxious* or anguish*).ti,ab.	179. (dysfunctional family or family dysfunction).ti,ab.
44. (withdrawn or apath*).ti,ab.	180. “Rejection (Psychology)”/
45. (indifferen* or disinterest*).ti,ab.	181. Negative attribution*.mp.
46. ((lack* or low or flat*) adj3 (affect or emotion*).ti,ab.	182. High criticism.mp.
47. (clingy or clinginess).ti,ab.	183. parent* unresponsiv*.mp.
48. ((attention or affection* or love) adj3 (inappropriate* or improper* or unsuitabl*).ti,ab.	184. Child Rearing/
49. ((mental or psychological* or emotional*) adj3 (stress* or distress*).ti,ab.	185. family interact*.ti,ab.
50. internalization.ti,ab.	186. home environment*.ti,ab.
51. Irritable Mood/	187. Neglect* mother*.ti,ab.
52. ((emotion* or affect*) adj3 (labil* or regulat*).ti,ab.	188. over* critical.ti,ab.
53. (aloof or avoid*).ti,ab.	189. (families or family or dyad).ti,ab.
54. Shyness/	190. or/143-189
55. ((avoid* or withdraw*) adj3 (contact or touch* or physical*).ti,ab.	191. 15 and 33 and 190
56. ((avoid* or withdraw*) adj3 social*).ti,ab.	192. assessment.mp.
57. unsociable.ti,ab.	193. Diagnosis/
58. ((lack or poor* or avoid*) adj3 communicat*).ti,ab.	194. diagnostic tool.mp.
59. (watchful or wary or vigilan*).ti,ab.	195. assessment tool.mp. or “Severity of Illness Index”/
60. (unhappiness or unhappy).ti,ab.	196. Needs Assessment/
61. (overly responsible or perfectionis*).ti,ab.	197. graded care profile.mp.
62. “ATTENTION DEFICIT and DISRUPTIVE BEHAVIOR DISORDERS”/	198. (identification or identify).ti,ab.
63. Conduct Disorder/	199. Pattern Recognition, Visual/
64. Aggression/	200. detect*.ti,ab.
	201. Classification/
	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.
81. Helplessness, Learned/	219. Absence of stimulation.mp.
82. sad.ti,ab.	220. home.ti,ab.
83. Social Behavior/	221. buggy.mp.
84. Attention Deficit Disorder with Hyperactivity/	222. "Walkers"/
85. avoidant attention.ti,ab.	223. Infant Equipment/
86. (normative adj3 avoidance).ti,ab.	224. (pram or pushchair).mp.
87. (abandoned or abandonment?).ti,ab.	225. stroller.mp.
88. psychological neglect.ti,ab.	226. ((view* or watch*) adj3 television).ti,ab.
89. ((lack* or absen* or fail*) adj3 (care* or childcare)).ti,ab.	227. Social Environment/
90. ((social* or emotional* or psychosocial* or contact or psychological*) adj3 (deprived or deprivation)).ti,ab.	228. or/211-227
91. "lack of supervison".ti,ab.	229. 15 and 33 and 228
	230. 142 or 191 or 210 or 229
	231. Stress Disorders, Post-Traumatic/
	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 Madagascar\$ 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 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 countries\$ or South America\$).ti,sh.
94. Child Behavior Disorders/	
95. (rage of raving or rageful).ti,ab.	
96. attachment*.ti,ab.	
97. Nonverbal Communication/	
98. Sensory integration.mp.	
99. Dissociation*.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. persecutor*.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.	235. "Africa South of the Sahara"/
118. Reactive Attachment Disorder/	236. or/231-235
119. Disinhibited.mp.	237. 230 not 236
120. Social skills.mp.	238. limit 237 to yr="2013 – 2014"
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.	

Thirteen databases were searched together with hand searching of particular journals and websites. A complete list of the resources searched can be found below.

Databases	Time period searched
ASSIA (Applied Social Sciences Index and Abstracts)	1987 – 2014
CINAHL (Cumulative Index to Nursing and Allied Health Literature)	1982 – 2014
Cochrane Central Register of Controlled Trials	1960 – 2014
EMBASE	1980 – 2014
ERIC (Education Resources Information Center)	1962 – 2014
HMIC (Health Management Information Consortium)	1979 – 2014
IBSS (International Bibliography of the Social Sciences)	1960 – 2014

MEDLINE	1960 – 2014
MEDLINE In-Process and Other Non-Indexed Citations	2006 – 2014
Open SIGLE (System for Information on Grey Literature in Europe)	1980 – 2005*
PsycINFO	1960 – 2014
Pubmed e publications	2014
SCOPUS	1966 – 2014
Social Care Online	2006 – 2014
Social Services Abstracts	2008 – 2013
Sociological abstracts	2008 – 2013
Web of Knowledge – ISI Proceedings	1990 – 2014
Web of Knowledge – ISI Science Citation Index	1970 – 2014
Web of Knowledge – ISI Social Science Citation Index	1970 – 2014
* ceased indexing † institutional access terminated ‡ no yield so ceased searching	
<b>Journals ‘hand searched’</b>	<b>Time period searched</b>
Child Abuse and Neglect	1979 – 2014
Child Abuse Review	1992 – 2014
<b>Websites searched</b>	<b>Date accessed</b>
Centre for Excellence and Outcomes in Children and Young People’s Services(C4EO)	14 October 2014
Child Welfare Information Gateway(CWIG)	14 October 2014
Research in Practice(RIP)	From inception – 2009†
Social Care Institute for Excellence website	14 October 2014
Translational Research on Child Neglect Consortium (TRCNC)	14 October 2014
Trauma Central	14 October 2014

## 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](mailto:clinical.standards@rcpch.ac.uk)).