

Child Protection Evidence

Systematic review on

School Aged 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

This systematic review evaluates the scientific literature on experiencing any form of neglect including physical, emotional, supervisory, medical, educational or nutritional and / or emotional abuse in children aged 5 to 14 years published up until **June 2021** and reflects the findings of eligible studies. The review aims to answer the following clinical question:

- What features, (excluding serological markers), are identifiable in school-aged children who are experiencing physical / emotional / supervisory / medical / educational / nutritional neglect and / or emotional abuse?

Key findings:

- Neglect is the most common form of child abuse, but frequently goes unrecognized within the school-aged population
- Education staff observe children on an almost daily basis and are well placed to identify neglect in this age group (NSPCC Safeguarding in Education Service April 2013). In addition, emotional abuse (EA) is prevalent in this age group, frequently overlapping with neglect as a form of emotional maltreatment
- Neglect or emotional maltreatment in this age group have lasting consequences for young people's physical and mental health¹

The 2021 update includes one new study which assessed the psychiatric and behavioural effects of different forms of maltreatment.²

Background

This systematic review evaluates the scientific literature on experiencing any form of neglect including physical, emotional, supervisory, medical, educational or nutritional and / or emotional abuse in children aged 5 to 14 years published up until June 2021 and reflects the findings of eligible studies. The review aims to answer the following clinical question:

1. What features (excluding serological markers) are identifiable in school-aged children who are experiencing physical / emotional / supervisory / medical / educational / nutritional neglect and / or emotional abuse?

Methodology

A comprehensive literature search was performed for all original articles published since 1946. 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 features are identifiable in school aged children who are experiencing neglect and/or emotional abuse?

There were 32 articles that addressed this question,³⁻³⁴ including three different study populations that had multiple publications recording different features as follows:

- Bolger 1998 & Bolger 2001^{4,5}
- Edwards 2005 & Shipman 2005^{8,29}
- Finzi 2001, Finzi 2002, Finzi 2003⁹⁻¹¹

Correspondence with the authors confirmed there is some overlapping data within the following studies.^{17,18,21-23,28}

This review included children aged 5-14 but the majority of studies addressed children aged 7-11 years. It was not possible to break the results down by narrow age bands due to the way in which they were reported within the primary studies.

One study explored the impact of gender on behavioural features of maltreated children and did not find it was a relevant mediator for those who were neglected.⁶

Within the comparative papers, nine specified ethnicity.^{6,8,15,23,26,30-33} Of these, six were well matched.^{6,8,15,26,30,33}

Socio-economic status was specified in 15 of the comparative papers.^{6-11,15,22-24,26,30-33} Of these, ten were well matched.^{6,7,15,22,24,26,30-33}

1.1 Behavioural features

There were 17 studies (20 publications) that addressed behavioural features^{2-4,6,7,9-16,22,23,25-28,32} (overlapping data between^{22,23} and ⁹⁻¹¹). Within these studies 14 different tools were used to assess behaviour; of these, the CBCL (Child Behaviour Checklist) was the most commonly used.

Externalising features (aggressive / assaultive / destructive / anti-social / delinquent behaviour)

This was the most commonly described feature among those experiencing neglect^{6,7,22,23,26,27} or emotional abuse.^{6,14,23} Children experiencing physical neglect exhibited more externalising behaviour than those experiencing supervisory neglect.²⁵ One study showed that the neglected children had more disciplinary problems and school suspensions than controls, implying disruptive behaviour¹⁶ whilst three studies showed no difference between neglected / emotionally abused (EA) children and controls.^{3,15,28}

Older neglected children exhibited severe behavioural problems compared to controls.¹³

A study examined the externalising effects of child maltreatment and presented findings for those experiencing emotional abuse and neglect.² The externalised factors antagonism and aggression were most commonly seen.

Internalising features (withdrawn / anxiety / depression / somatic complaints)

Seven studies investigated an association with internalising features.^{4,7,15,23,25,27,32}

Neglect^{4,25,28} or emotional maltreatment and neglect^{23,27} were found to be positively associated with one study⁴, highlighting that the neglected children felt that others were in control of their lives rather than themselves.

Children experiencing physical neglect had more externalising problems than those experiencing supervisory neglect.²⁵

Two studies did not identify any association between neglect and internalising features.^{7,15}

When assessing internalising effects of child maltreatment, emotional abuse and neglect groups saw a higher frequency of neuroticism and depression.²

Features overlapping with Attention Deficit Hyperactivity Disorder (ADHD)

Five articles noted that the neglected or emotionally maltreated children exhibited impulsivity, inattention and hyperactivity, among children aged 6–12 years.^{7,9,10,12,23}

Attachment

Two articles evaluated attachment, showing that neglected children were significantly more likely to demonstrate anxious ambivalent attachment.^{9,12}

1.2 Social functioning

Eight studies (10 publications) addressed social functioning (overlapping data between^{9,10} and 22,23).^{5,7,9,10,15,18,19,22,23,33} Multiple tools were used and peer nominations were used in four publications.^{15,18,22,23}

Children who were neglected exhibit difficulties in being accepted by other children, making friends and developing reciprocated friendships.^{5,7,9,10,15,18,19,22,23}

Neglected children have difficulties with daily living activities, in particular a delay in personal care skills, ability to complete domestic tasks, or to form interpersonal relations, in comparison to controls.³³ The neglected children also showed a low socialisation score in comparison to controls.

Those who were emotionally maltreated from a young age are less likely to have a best friend and those with chronic maltreatment gain fewer friends over time.⁵ Children have a strong desire to please others and overcompensate in their efforts to achieve this.^{19,20}

Two studies did not identify differences between the neglected or emotionally abused children compared to controls in their peer nominations.^{15,19}

1.3 Emotional wellbeing

Fourteen studies (16 publications) addressed emotional well-being (overlapping data in^{9,10} and 8,29).^{4,8-10,12-15,17,18,21,28-32}

Self-esteem

Three studies assessed self-esteem using the self-esteem inventory^{17,21} and the California Q sort.¹⁵ The neglected or emotionally abused children had lower self-esteem than controls^{15,17,21} and the more severe the neglect, the lower their self-esteem.²¹

Perception of control

One study addressed the perception of control using Connell's multi-dimensional measure of children's perceptions of control. It noted that the neglected children perceived that others were controlling the events that happened to them in life, which increased their internalising symptoms.⁴

Depression

Six studies used the Child Depression Inventory^{2,13,17,21,30,32} and one¹⁴ used the Schedule for Affective disorders and Schizophrenia. One used the Child Suicide Potential Scales.⁹

Depression was associated with physical neglect.^{13,17,21,32} The neglected children with an insecure attachment to their mother showed more depressive symptoms.²⁹ Likewise, children with a negative maternal schema had higher depression scores.³⁰ Emotional maltreatment also has a significant influence on depressive symptoms.^{14,17}

One study of children aged 6-12 years showed no difference in suicide potential between neglected children and controls.⁹

Emotional abuse and neglect were also associated with depression.²

Emotional regulation and understanding

Emotional regulation and understanding was addressed in five studies.^{8,12,18,28,29} Within these studies five different tools were used, the most frequent of which was the Emotion Regulation Checklist.^{8,12,18,28,29}

Two studies found no difference in emotional regulation between the neglected children and controls,^{18,28} however one study noted that neglected children used less effective coping strategies and were more likely to inhibit the expression of negative emotions than controls.²⁹ Those experiencing emotional maltreatment showed greater emotional dysregulation than other forms of abuse and controls.¹⁸ The neglected children showed less emotional understanding, in particular relating to negative emotions.^{8,12,28}

Self-perception

Self-schema (such that information related to the self is better remembered than that which is not related to the self) was assessed with the children's self-schema task.³¹ On memory testing, there was no difference in false recall between neglected children and controls, although all children had low recall. However, the neglected children had more negative false recalls and less positive false recalls than other children. This is consistent with the neglected children having low self-esteem.³¹ Another study, using the Child Suicide Potential Scale, demonstrated that neglected children had equivalent or slightly worse ego defences (denial, rejection, projection) than controls.¹⁰

1.4 School performance and IQ

School performance and IQ was addressed in 13 studies.^{7,12-14,16,20,24,25,27,30-33} Multiple tools were used, the majority of which were only used by one study. Three studies used the Peabody

Picture Vocabulary test^{13,30,33} and four used school reports, recording special educational needs and grade retention / repetitions.^{7,16,20,27}

IQ

Six studies addressed IQ,^{12-14,25,27,30} of which three noted that neglected children had a lower IQ overall.^{12-14,25} The more severe the neglect, the lower the IQ.¹⁴

The neglected children also had poor executive decision making.¹² The more neglected the children, the worse their receptive vocabulary (age 6-9 years).¹³ Two studies showed no difference in IQ among neglected children versus controls;^{27,30} Reyome et al used a non-verbal measure (self-drawing)²⁷ and Toth et al used the receptive language component of the Peabody Picture Vocabulary test as an indirect measure of IQ.³⁰

Physically neglected children showed no difference in non-verbal IQ when compared to those experiencing supervisory neglect, although the latter had a higher verbal IQ.²⁵

School performance

Children who were neglected had more grade repetitions compared to controls in three included studies,^{7,16,27} however one study did not note any difference in grade retention.²⁰

More children experiencing neglect had special educational needs than controls in two studies^{7,27} however another did not find this association.²⁰

Neglected children had lower numeracy, literacy and English than controls,^{16,27} and a less positive impression of their own academic performance.^{20,30}

Neglected children had worse results than controls on manual dexterity, auditory attention and visual-motor integration. They were however better at problem solving, abstraction and planning than controls.²⁴

Memory

Three articles by the same authors addressed memory among neglected children.³¹⁻³³ There was no difference in negative self-representations nor over-general memory (difficulty in remembering specific autobiographical features) between neglected children and controls, however the neglected children had higher warmth scores.³² On memory testing, there was no difference in false recall between neglected children and controls, although all children had low recall. However, the neglected children had more negative false recalls and less positive false recalls than other children.³³

Neglected children did not show memory deficits in comparison to controls.³¹

1.5 Key evidence statements

- In children of school-age exhibiting behavioural difficulties such as externalising or disruptive behaviour or features associated with ADHD (e.g., impulsivity), neglect or emotional abuse should be considered as a possible aetiology
- Education staff need to be aware of both the behavioural features, reduced IQ and poor academic performance, and difficulties in social interaction that children experiencing neglect / emotional abuse may exhibit
- Children as young as eight may present with depressive or suicidal features as a consequence of neglect or emotional abuse, thus consideration should be given to screening children with known neglect / emotional abuse for these features
- Children who are experiencing difficulty developing friendships may be experiencing neglect or emotional abuse, thus practitioners assessing children for neglect or emotional abuse should ask the child about the extent and nature of their friendships

1.6 Research implications

- The current literature is predominantly from North America, thus further European or Australian studies would be of value
- Conflicting data relating to academic performance would benefit from further large-scale comparative studies
- A multiplicity of tools were used within the included studies; further work to devise a comprehensive tool to identify neglect in school-aged children would be of value
- It would be beneficial if future studies addressed neglect/emotional abuse within specific, developmentally relevant age bands
- It would appear that different forms of neglect, e.g. supervisory, physical, emotional, may have different consequences for children and thus future studies should aim to separate these categories

1.7 Limitations of review findings

- The current literature is predominantly from North America and thus its generalisability to other populations is undetermined
- Due to the wide age bands it was not possible to separate the literature into relevant age groups i.e. pre-adolescent and adolescent
- Due to the variety of tools used a meta-analysis was not possible

- Although the majority of results related to neglect specifically, in some instances neglect and emotional abuse (EA) were combined. In addition, these results relate to “neglect/EA in isolation” whilst in practice the majority of children are likely to experience a combination of neglect/EA and other forms of maltreatment
- Although this review was restricted to children experiencing neglect between the ages of 5-14 years, it was not always possible to discern whether they had also experienced neglect prior to this age

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

Developmental consequences

- A review article describing the developmental consequences of child neglect throughout the lifespan³⁵

Physical consequences

- There is conflicting literature relating to the role of neglect in obesity
- Some studies suggest that children of neglectful parents are twice as likely to be overweight than controls (e.g. ³⁶), however in one study they were found to have a greater BMI in comparison to national norms, but did not differ from controls³⁷
- In contrast in a study of maltreated children, being neglected reduced the odds of being overweight or obese³⁸
- Likewise, an evaluation of parenting style did not identify any correlation between (neglectful) parenting and BMI scores³⁹
- In a longitudinal study, those children experiencing neglect had a faster rate of increasing BMI than controls⁴⁰
- An exploration of adult obesity noted that adults recalling childhood neglect or emotional abuse exhibited more obesity at the age of 20 years⁴¹
- Children identified as experiencing non-organic failure to thrive were followed up over 20 years, showing a variety of impacts on adult functioning⁴²
- In a short-term follow up, these children were more likely to suffer physical abuse and have reduced performance on IQ testing⁴³

- Childhood neglect is associated with greater prevalence of maturity onset diabetes in the adult population, as well as reduced vision, reduced lung function and oral health problems⁴⁴
- A study of fatalities as a consequence of maltreatment identified that those dying from neglect were predominantly aged less than three years, from larger families, with the mothers the most frequent perpetrators.^{45,46} In addition they are more likely to have had previous child welfare involvement⁴⁵

Mental health consequences

- Children experiencing neglect before the age of 11 years were at increased risk for major depressive disorder within early adulthood. The age of onset of depression was also younger among those who had been neglected than controls. They were also more likely to have co-morbid diagnoses such as post-traumatic stress disorder, substance abuse, antisocial personality disorder, or dysthymia⁴⁷
- Neglectful parents expressed greater loneliness, social isolation and increased numbers of stressful life events in comparison to controls⁴⁸
- Literature would suggest that early childhood neglect or abuse may be associated with ADHD in later childhood.^{49,50} There is a suggestion that girls may be more susceptible to this effect than boys⁴⁹

Distinguishing features of Attention Deficit Hyperactivity Disorder (ADHD)

- A prospective study was conducted to identify discriminating features between ADHD and reactive attachment disorder in school-aged children⁵¹

Risk factors

- Maternal depression is associated with childhood neglect although there may be many mediators for this effect⁵²
- In an assessment of the impact of stress on maternal responses, neglectful mothers were more hostile, impulsive and the least socialized when under stress, in comparison to controls or physically abusive mothers⁵³
- An exploration of gender and family structures on the risk of child neglect aimed to compare the socio-demographic characteristics and personal problems of mothers and fathers in neglecting families.⁵⁴ Single female-headed families were found to be particularly vulnerable and fathers present better socio-demographic characteristics and struggle with less personal problems than mothers⁵⁴
- Substance misuse and criminality associated with it are a risk factor for neglect⁵⁵
- A longitudinal birth cohort study identified that the infants with a low birth weight were at slightly higher risk of experiencing neglect or emotional abuse⁵⁶

Assessment tools

- A review article examines the current tools available for the assessment of children experiencing neglect, emotional abuse or potential maltreatment⁵⁷

Epidemiology

- A Canadian incidence study during 1998 noted that 40% of investigations were due to neglect and 19% emotional maltreatment⁵⁸
- Another Canadian incidence study from 2003 recorded the prevalence of neglect and emotional abuse with relevant associated risk factors^{59,60}
- UK incidence figures of abuse and neglect are provided by the NSPCC
- An examination of longitudinal studies identified the prevalence of neglect using different definitions⁶¹

Related publications

Publication arising from school aged neglect review

Maguire SA, Williams B, Naughton AM, Cowley LE, Tempest V, Mann MK, Teague M, Kemp AM. A systematic review of the emotional, behavioural and cognitive features exhibited by school-aged children experiencing neglect or emotional abuse. *Child: Care, Health & Development*. 2015

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Appendix 1 – Methodology

We performed an all-language literature search of original articles, their references and conference abstracts published since 1946. 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. Where applicable, authors were contacted for primary data and confirmation of information, such as data duplication across publications, age range of subjects or the confirmation of neglect / EA as appropriate. 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.⁶² We also used a selection of systematic review advisory articles to develop our critical appraisal forms.⁶³⁻⁶⁷ 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, teachers and child protection researchers, information specialists and social workers. All reviewers underwent standardised critical appraisal training, based on the CRD critical appraisal standards.⁶⁴

We included all primary studies addressing neglect and/or emotional abuse in children aged 5-14 years (where the majority of children were aged 6-12 years), for which the authors explicitly recorded emotional, behavioural, or cognitive features in the child. We combined emotional neglect and emotional abuse 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).⁶⁸ Among international definitions of neglect and emotional abuse, we opted for those of the World Health Organization, as follows:

- Neglect is defined as:
 “Neglect refers to 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 thus distinguished from circumstances of poverty in that neglect can occur only in cases where reasonable resources are available to the family or caregiver.”⁶⁹
- 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.”⁶⁹

In the absence of an identifiable UK / World definition of educational neglect, we developed our own for the purposes of the review:

Educational neglect involves one or more of the following: The parent or caregiver’s –

- Failure to enrol a child of mandatory school age in school
- Failure to comply with state requirements regarding school attendance
- Failure to access / provide appropriate home schooling
- Failure to avail of recommended special educational provision
- Failure to cooperate with treatment if the child is experiencing mental, emotional or developmental problems associated with school, and treatment is offered
- Failure to show an interest in the child’s education at school and support their learning
- Failure to provide a stimulating environment
- Repeatedly keeping the child at home, thus failing to comply with state requirements
- Allowing the child or youth to engage in chronic truancy

Adapted from: American Humane Association⁷⁰⁻⁷²

Inclusion criteria

Inclusion	Exclusion
Children aged 5-14 completed years (studies included if majority of cases fall within 6 to 12 completed years)	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 / emotional abuse	Studies relating to secondary carer, either exclusively or where relevant data relating to primary carer cannot be extracted
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	Quality standards for confirmation of neglect/emotional abuse
A1	Neglect / emotional abuse confirmed at child protection case conference, multi-disciplinary assessment, including social services or Court proceedings, or described by the child, or admitted by the perpetrator or independently witnessed
A2	Diagnosis of neglect / emotional abuse by clinical psychologist, psychiatrist or other mental health specialist
B	Neglect / emotional abuse confirmed by referenced criteria / tool
C	Neglect / emotional abuse confirmed by unreferenced criteria / tool, as specified in our standards
D	Neglect / emotional abuse confirmed by unreferenced criteria / tool, not specified in our standards

Search strategy

The below table presents the search terms used in the 2021 Medline database search for school-aged neglect, truncation and wildcard characters were adapted to the different databases where necessary.

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.
	191. No-show.tw.

52. or/22-51	192. failure to turn up.tw.
53. Failure to Thrive/	193. (non-attendance or non attendance).tw.
54. (failure to thrive adj5 (emotion* or nonorganic or non-organic)).ti,ab.	194. “did not attend”.tw.
55. (failure to thrive adj5 (abus* or neglect* or maltreat* or mistreat* or depriv* or psych)).ti,ab.	195. Phthiraptera/
56. ((fail* or inadequa*) adj2 emotional support).ti,ab.	196. Pediculus/
57. (unkempt or ungroomed).ti,ab.	197. (lice or louse or nits).tw.
58. Psychosocial Deprivation/	198. Mother-child aggression.tw.
59. unhealthy appearance?.ti,ab.	199. Father-child aggression.tw.
60. exp Internal-External Control/	200. Parent-child aggression.tw.
61. (internal* adj3 extem*).ti,ab.	201. Carer-child aggression.tw.
62. (anxiety or anxious* or anguish*).ti,ab.	202. Mother-Child Relations/
63. (withdrawn or apath*).ti,ab.	203. Failure to enrol.tw.
64. (indifferen* or disinterest*).ti,ab.	204. ((guilt or shame) adj3 proneness).tw.
65. ((lack* or low or flat*) adj3 (affect or emotion*)).ti,ab.	205. (Obesity adj3 neglect*).mp.
66. (clingy or clinginess).ti,ab.	206. Disab* child*.mp.
67. ((attention or affection* or love) adj3 (inappropriate* or improper* or unsuitabl*)).ti,ab.	207. learning needs.mp.
68. ((mental or psychological* or emotional*) adj3 (stress* or distress*)).ti,ab.	208. non-school attendance.mp.
69. internalization.ti,ab.	209. Faltering growth.mp.
70. Irritable Mood/	210. Peer Group/
71. ((emotion* or affect*) adj3 (labil* or regulat*)).ti,ab.	211. “Rejection (Psychology)”/
72. (aloof or avoid*).ti,ab.	212. Social Desirability/
73. depressive symptom*.tw.	213. Adaptation, Psychological/
74. Shyness/	214. *Emotions/
75. ((avoid* or withdraw*) adj3 (contact or touch* or physical*)).ti,ab.	215. *Fantasy/
76. ((avoid* or withdraw*) adj3 social*).ti,ab.	216. Crime Victims/
77. (unsociable or lying or cheat*).tw.	217. Sociometric Techniques/
	218. Educational Status/
	219. Academic Achievement.mp.
	220. Peer Relations.mp.
	221. Victimi*.mp.

78. ((lack or poor* or avoid*) adj3 communicat*).ti,ab.	222. Emotional Adjustment.mp.
79. (watchful or wary or vigilant*).ti,ab.	223. or/53-222
80. (unhappiness or unhappy).ti,ab.	224. 21 and 52 and 223
81. (overly responsible or perfectionist*).ti,ab.	225. (physical abuse* adj3 neglect*).mp.
82. "ATTENTION DEFICIT and DISRUPTIVE BEHAVIOR DISORDERS"/	226. (sexual abuse* adj3 neglect*).mp.
83. Conduct Disorder/	227. (post traumatic stress disorder* or PTSD).mp.
84. Aggression/	228. Stress Disorders, Post-Traumatic/
85. ((aggression or aggressive*) adj3 (behavio* or escalat*).ti,ab.	229. or/225-228
86. acting out.ti,ab.	230. 22 or 24 or 25 or 26 or 32
87. out of control.ti,ab.	231. 21 and 229 and 230
88. ((chaotic* or challenging) adj3 behavio*).ti,ab.	232. ((bmi or body mass index) adj2 (gain or loss or change)).tw.
89. (bully* or bullie?).ti,ab.	233. ((maltreat or neglect*) adj3 (obesity or obese or overweight or over weight)).mp.
90. Anger/	234. ((maltreat* or neglect*) adj3 (adiposity or overeating or weight gain or body weight)).mp.
91. ((destructive* or disruptive*) adj3 behav*).ti,ab.	235. (maltreat* or neglect*).mp.
92. Impulsive Behavior/	236. 232 and 235
93. impulse control.ti,ab.	237. 233 or 234 or 236
94. (impulsive* or impulsivity or impulse control).ti,ab.	238. 21 and 237
95. Developmental Disabilities/	239. ((maltreat* or neglect*) adj3 (obesity or obese or overweight or over weight)).mp.
96. Child Development/	240. 234 or 236 or 239
97. Child Behavior/	241. 21 and 240
98. Infant Behavior/	242. 238 or 241
99. Personality Development/	243. 224 or 231 or 242
100. ((chang* or alter* or deviat* or transition?) adj3 personality).ti,ab.	244. (Adolescen* or teen* or youth).mp.
101. Helplessness, Learned/	245. "Young Adult"/
102. sad.ti,ab.	246. "Africa South of the Sahara"/
103. Social Behavior/	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
104. Attention Deficit Disorder with Hyperactivity/	

105. avoidant attention.ti,ab.	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 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 Faroe Islands or Greenland or Liechtenstein or Lithuania\$ or Macedonia or Malta or maltese or Romania or Serbia\$ or Montenegro or Svalbard or Argentina\$ or Belize or Bolivia\$ or Brazil\$ 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.	
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 hypervigilant*).ti,ab.		
110. Child Behavior Disorders/		
111. (rage of raging or rageful).ti,ab.		
112. Nonverbal Communication/		
113. Sensory integration.mp.		
114. Dissociat*.ti,ab.		
115. **"Dissociative Disorders"/		
116. Affect mirroring.mp.		
117. **"Facial Expression"/		
118. Mind-mindedness.mp.		
119. Object Attachment/		
120. attachment.ti,ab.		
121. persecut*.ti,ab.		
122. Speech delay.mp.		
123. Language delay.mp.		
124. Language Disorders/		
125. Perspective taking.mp.		
126. Demanding.mp.		
127. Poor concentration.ti,ab.		
128. listless*.mp.		
129. Delinquent*.tw.		
130. Isolated.mp.		
131. **"Social Isolation"/		
132. Inhibited.mp.		
133. Reactive Attachment Disorder/		
		248. or/244-247
		249. 243 not 248
		250. limit 249 to (humans and yr="2014 - 2021" and "child (6 to 12 years)")

134. Disinhibited.mp.	
135. Social skills.mp.	
136. Depression/	
137. False positive affect.mp.	
138. touch sensitive.mp.	
139. Apparent compliance.mp.	

Nineteen 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 – 2021
CINAHL (Cumulative Index to Nursing and Allied Health Literature)	1982 – 2014
Cochrane Central Register of Controlled Trials	1960 – 2014
EMBASE	1980 – 2021
ERIC (Education Resources Information Center)	1962 – 2021
HMIC (Health Management Information Consortium)	1979 – 2014
IBSS (International Bibliography of the Social Sciences)	1960 – 2014
MEDLINE	1960 – 2021
MEDLINE In-Process and Other Non-Indexed Citations	2006 – 2021
Open SIGLE (System for Information on Grey Literature in Europe)	1980 – 2005*
PsycINFO	1960 – 2014
Pubmed e publications	2014
SCOPUS	1966 – 2021
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 ** due to lack of relevancy stopped searching	
Journals 'hand searched'	Time period searched
Child Abuse and Neglect	1979 – 2014
Child Abuse Review	1992 – 2014
Websites searched	Date accessed
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 (evidence@rcpch.ac.uk).