

Risk factors for recurrence of maltreatment: a systematic review

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Background: Children who have been maltreated are at increased risk of further maltreatment. Competent identification of those at highest risk of further maltreatment is an important part of safe and effective practice, but is a complex and demanding task.

Aim: To systematically review the research base predicting those children at highest risk of recurrent maltreatment.

Methods: Systematic review of cohort studies investigating factors associated with substantiated maltreatment recurrence in children.

Results: Sixteen studies met the inclusion criteria. The studies were heterogeneous. A variety of forms of maltreatment were considered. Four factors were most consistently identified as predicting future maltreatment: number of previous episodes of maltreatment; neglect (as opposed to other forms of maltreatment); parental conflict; and parental mental health problems. Children maltreated previously were approximately six times more likely to experience recurrent maltreatment than children who had not previously been maltreated. The risk of recurrence was highest in the period soon after the index episode of maltreatment (within 30 days), and diminished thereafter.

Conclusions: There are factors clearly associated with an increased risk of recurrent maltreatment, and these should be considered in professional assessments of children who have been maltreated. A comprehensive approach to risk assessment, including but not solely based on these factors, is likely to lead to interventions which offer greater protection to children.

Child abuse and neglect is a major environmental risk factor for poor psychosocial outcomes with respect to both future morbidity and mortality.¹⁻⁴ Risk of recurrence, following an index event is high, with rates varying between 15% and 50%.⁵

Many inquiries into child deaths and serious injuries involve children already known to child protection services. This raises important questions for clinicians and practitioners faced with a situation where a child has been maltreated, particularly in assessing the risk of maltreatment reoccurring in the same child. Clinicians are encouraged to gather data systematically,⁶ but considerable uncertainty remains as to which potential risk factors should take precedence.

Evidence that identifies certain risk factors for recurrence of maltreatment already exists.^{5,7} However, many of the studies have methodological problems, and it has been difficult to extract consistent messages from such a varied evidence base. In spite of this, professionals working with children are still required to make crucial decisions about whether children continue to live in or be returned to a family where an incident of abuse has occurred.

We were aware of no systematic review of existing studies of confirmed child maltreatment. We undertook a systematic review of cohort studies investigating factors associated with substantiated maltreatment recurrence in children.

METHODS

Data acquisition

The aim of this systematic review was to identify all cohort studies (published or unpublished) available for review to January 2003, which identified factors linked with recurrence of substantiated child maltreatment.

Search strategy

Electronic databases

Two reviewers (NH and PR) independently searched Medline (1966 to January 2003), PsycLit (1872 to January 2003), Cinahl (1982 to September 2003), Sigle (1980 to June 2003), Embase (to September 2003), and the National Clearing House on Child Abuse and Neglect Information (NCCANI) (search date, 24 September 2003). We searched using the following terms: terms relating to children ("young people", "young person", "child", "children", "adolescent/s", "adolescence", etc); terms relating to child abuse ("neglect", "maltreatment", "battered", "significant harm", etc); terms relating to repetition ("re-abuse", "recurrence", "reunification", etc); and reference to "outcome". The full search strategy is available from the authors.

Reference checking

The reference lists of all selected studies were inspected to identify additional published and unpublished research.

Hand searching

We searched the three journals which produced the most citations for the review (*Child Abuse and Neglect*, *Child and Youth Services Review*, and *Child Maltreatment*). Issues for the period January 1993 to January 2003 were inspected electronically for further references.

Personal communications

In addition to the above, authors of identified papers and experts in the field were contacted and asked to identify further studies.

Selection of studies

All papers of potential relevance were requested. NH and PR independently checked all identified studies. Final decisions,

relating to inclusion of papers for review, were made by collective discussion with the third author (DJ). We considered studies eligible for review if:

- They considered “maltreatment” in any accepted form
- They dealt with substantiated maltreatment and recurrence of maltreatment during follow up
- The study participants were under 18 years of age
- They were classifiable as cohort studies
- They were written in English
- They considered factors related to recurrence of maltreatment
- They made some effort to quantify their findings.

The above inclusion criteria meant that we deliberately excluded studies that focused solely on adult perpetrators and studies of “referrals” or “suspected” cases of recurrent maltreatment. The focus was therefore on studies concentrating on children and families in which recurrent maltreatment occurred. Only studies of “substantiated” maltreatment were included in order to have a more homogenous set of studies, in that all participants would then have had to meet a threshold of confidence that maltreatment had occurred. However, all forms of recognised child maltreatment were eligible for inclusion, including less commonly researched forms such as fabricated illness, and studies which considered child death.

Inclusion was restricted to studies of a cohort design because case-control studies are more likely to be subject to significant selection biases that may compromise the validity of the results.⁸

Quality assessment

Two reviewers (NH and PR) assessed the methodological quality of included studies. We used a scoring system that addressed those aspects of study design most important for internal validity. This was adapted from others scales for the assessment of cohort studies.⁸ The key variables assessed were: sample selection; study design; identification of risk factors; dropouts or withdrawals; clarity of outcome measure; degree of statistical analysis; and appraisal of limitations. Each of the seven variables was assessed on a three-point scale (poor (0), fair (1) and good (2)). The total quality score was obtained by adding the scores of the seven variables, giving a total score ranging from 0 to 14. Differences between reviewers were resolved by consensus.

Data extraction

Two reviewers (NH and PR) extracted further data relating to participant characteristics, type of maltreatment experienced, reabuse rates, length of follow up, and factors associated with recurrence of maltreatment.

Data analysis

The results of the included studies were not statistically combined in a meta-analysis because of the heterogeneity of studies, for example in terms of the setting participants were recruited from (Child Protective Services (CPS) versus court samples), or the type of maltreatment (neglect versus child sexual abuse). It has also been strongly argued^{8,9} that meta-analyses of observational epidemiological studies can produce spuriously accurate, and so misleading, summary statistics. In the absence of meta-analysis, risk factors were identified if they were clearly identified in at least two studies, and the evidence across studies was consistent.

RESULTS

Presentation of results

Detailed findings of the individual included studies are collated in the tables. Table 1 contains a summary of the overall findings, and table 2 presents a summary of the key identified variables. The following paragraphs provide an overview of principal findings.

Studies selected

Eighty nine studies were identified for potential inclusion. Thirteen were available only in abstract form. We therefore reviewed 76 studies in depth. Sixty failed to meet inclusion criteria. The reasons for this were: failure to demonstrate substantiation of maltreatment or recurrence, insufficient data on risk factors, insufficient statistical data, studies following up adult abusers, design other than cohort study, and various combinations of these.

Sixteen studies met all inclusion criteria.^{10–25} Six of these examined different aspects of two cohorts.^{10–13, 19, 20}

Study heterogeneity

The significant variability in the studies presented here has already been alluded to in the methods section. Some of the greatest sources of variability have been described above, for example the wide range of settings and sources of recruitment for the studies, and the range in the types of maltreatment considered. Care should be taken in considering the summary findings from such a broad range of studies, and it is in part for this reason that statistical meta-analysis was not undertaken.

Methodological quality

Only one study appeared to be truly prospective in design.²⁴ There was a considerable spread of quality scores across the papers reviewed (see table 1). The total quality scores for individual papers ranged between 4 and 12 (maximum possible score 14).

No formal sensitivity analysis was undertaken as no summary statistics were prepared (for reasons outlined above). However, three of the studies^{17, 21, 23} scored at the lower end of the quality score; these were smaller studies of more selected populations, and generally identified a higher rate of recurrence of maltreatment. In the text that follows we clearly identify where results are obtained from one of these “lower quality scoring” studies, and would urge the reader to interpret their findings with more caution.

Study populations

Fifteen studies were conducted in the United States and one²⁴ was conducted in Australia. The majority dealt with samples of families/children living in community settings identified by administrative child protection databases. These studies comprised:

- Those that included all confirmed cases of maltreatment and did not operate exclusion criteria^{14–16, 19, 25}
- Those that either specified types of maltreatment or operated some other exclusion criteria (e.g. physical abuse and neglect at index, living with mother for at least some part of five year follow up, subject to Child Protective Service (CPS) follow up^{10–13, 18, 22})
- Special samples (e.g. a court sample;²¹ a hospital sample of very young physically abused children²³ and a hospital sample of sexually abused children²⁴)
- Those providing insufficient information about the study population.¹⁷

Table 1 Findings from papers

Author (year)	Subjects, setting, and study design	Quality score (max. 14)	Abuse type	Follow up	Reabuse rate	Factors associated with reabuse
DePanfilis and Zuravin (1999a) ¹⁰	446 selected families from all cases (2902) with substantiated index maltreatment in 1988. Mother was primary or shared caregiver at index and living with children for some of follow up period and in contact with CPS prior to recurrence. Baltimore.	12	Physical abuse or neglect. (CSA or mixed abuse at index excluded)	5 years from index maltreatment 1181/2902 fulfilled initial selection criteria; 654/1181 available after sampling and stratification; 446/654 available to recurrence study.	5 year family recurrence rate 34.8% 155/446	Any child in family placed. Risk Ratio (RR) = 1.9 (p=0.002) Child vulnerability construct. RR = 1.4 (p=0.02) Family stress construct RR = 1.2 (p=0.02) Social support deficit construct RR = 1.4 (p=0.0001) Partner abuse construct RR = 1.5 (p=0.03) NB: other constructs/factors (number of prior abuse episodes; index abuse type; severity index; mother factors; survival stress) were not significantly associated with reabuse.
DePanfilis and Zuravin (1999b) ¹¹	Retrospective (described as "non-concurrent prospective"). 1167 selected families from all cases (2902) with substantiated index maltreatment in 1988. Mother was primary or shared caregiver at index and living with children for some of follow up period. Includes cases closed, opened and continued for CPS after index episode. Baltimore.	10	Physical abuse or neglect. (CSA or mixed abuse at index excluded)	5 years from index maltreatment 1181/2902 fulfilled initial selection criteria; 1167/1181 available after further exclusions.	5 year family recurrence rate: 497/1167 (42.6%);	Risk of recurrence highest during first 30 days after index abuse. 26.8% of recurrences occurred during CPS intake or ongoing CPS input. After CPS closure: 85% of families had no recurrence within 2 years. Neglect cases had consistently higher recurrence rates across all 3 service statuses (closed, open, or continued).
DePanfilis and Zuravin (2001) ¹²	Retrospective ("non-concurrent prospective"). As per 1999b plus "Any child placed at any time" (probably most severe cases) removed from follow up. 747 cases (252 closed at intake; 495 provided services.) Baltimore.	11	Physical abuse or neglect. (CSA or mixed abuse at index excluded)	5 years from index maltreatment As per 1999b plus 420 families excluded because of placement episodes.	5 year family recurrence rate: "closed at intake" 11/252 (4.37%) "open for services" 127/495 (25.7%)	Mean time to recurrence: Closed at intake group: 1748 days (SE 22.90; 95% CI: 1703-1793) Opened at intake group: 1423 days (SE 31.9; 96% CI: 1360-1485)
DePanfilis and Zuravin (2002) ¹³	Retrospective ("non-concurrent prospective"). Sample of 434 families from same sample as (1999 above). 12 further families excluded because service variables not available. Baltimore.	12	Physical abuse or neglect. (CSA or mixed abuse at index excluded)	5 years from index maltreatment As per 1999a plus 12 further families because service variables not available	5 year family recurrence rate: 34.8% (151/434)	Results as per 1999a paper plus addition of service, compliance and improvement variables. Attendance at CPS services: RR=0.688 (p=0.05); "attendance reduces risk of recurrence by 32%". NB. other service variables examined revealed no relationship with recurrence
English <i>et al</i> (1999) ¹⁴	Retrospective ("non-concurrent prospective"). 4437 families with "founded initial or subsequent" referrals from sample of 42000 CPS referrals (recurrence dataset). Washington state. Database extraction; retrospective.	9	Any type except mixed	18 months following initial referral 4437 followed through. (No precise figures were given for numbers or reasons for dropouts.)	Family recurrence rates: 6.4% at 6 months, 9.1% at 12 months, and 10.6% at 18 months.	Bivariate associations (p<0.05)* between recurrence and: History of domestic violence Chronicity of maltreatment Child's age risk level Parent's history of maltreatment as child Caregiver impairments Parental substance abuse Social support Protection of child *No other evidence of strength of associations given

Table 1 Continued

Author (year)	Subjects, setting, and study design	Quality score (max. 14)	Abuse type	Follow up	Reabuse rate	Factors associated with reabuse
Fluke <i>et al</i> (1999) ⁵	556224 (our calculation) "substantiated or indicated" child reports from 10 states in the USA (placed children excluded). Database extraction study; retrospective.	9	Any type including mixed abuse types.	Maximum 2 year fixed follow up period (range = <1-24 months). Only percentages used, thus no information re dropouts/missing information available.	Child recurrence rate (weighted mean + range): 6 months: 14.7% (3.5-22.2) 12 m: 19.6%(4.8-29.3)	Neglect most likely maltreatment type to recur (log rank $p < 0.001$) in 9 out of 10 states. Likelihood of recurrence increases after each subsequent maltreatment event. Children already receiving CPS at index at higher risk of first recurrence. No significant age or race-related findings. 66.9% of recurrences within 330 days of initial incident (23.6% of recurrences within 30 days). Hazard rate for first 30-day interval 11.6 × greater than that for 25th interval (at about 2 years). Younger children more vulnerable ($p < 0.001$). Revictimisation rates: physical neglect 13.17%, emotional neglect 12.02%; lack of supervision 10.99%; cuts/wells/bruises 8.8%; sexual abuse 8.26%. Recurrence rates for families in which physical abuse occurs 54.1%, gross neglect 44.4%, sexual abuse 29.6%, emotional abuse 21.4%. Recurrence estimate for single type abuse 51.9%; mixed abuse types: double 66.3%, triple 85.0%. Higher rates of recurrence in families with a child aged 0-5 years and lower rates with children over 11 ($\chi^2 = 23.37$, $p < 0.01$, $df = 2$).
Fryer and Miyoshi (1994) ⁶	24507 records of substantiated abuse from Colorado CAN registry; first recurrence data collected only. Database extraction study; retrospective.	8	Any maltreatment.	Maximum follow up 4 years (1-1470 days). "All records complete and of high quality."	Child recurrence rate during study 9.34%.	Correlations with reabuse: "stress" (>1 child in home): $r = 0.26$, $p < 0.001$; time abuser spends with child: $r = 0.28$, $p < 0.001$; "parenting skills" (mothers skills): $r = 0.36$, $p < 0.0005$; reasonableness of expectations of child: $r = 0.33$, $p < 0.0005$; "client's capacity to use resources": $r = 0.33$, $p < 0.0005$. (NB: some strong correlations between individual factors) Participation in FPS broken down into two researcher-derived indices: "collaboration" (participation in treatment planning and agreement with treatment plans), and "compliance" (keeping appointments, completing tasks and cooperation). Collaboration was not associated with substantiated reabuse. Compliance was associated with small reduction in substantiated reports during FPS ($b = -0.08$) but not after FPS.
Herrenkohl <i>et al</i> (1979) ¹⁷	286 families with verified incidents from 328 families who were provided services for child abuse. All cases either closed or received more than one year of service. Demography of sample said to match that of locality. Two Pennsylvania counties. Case-note study; retrospective	4	Any maltreatment.	Fixed 10 year period (1967-76); little data re follow up in individual cases. No data re selection or dropouts.	Family recurrence rates: 191/286 (66.8%) for verified incidents. Child recurrence rate: 253/511 (49.5%).	Recurrence rates for families in which physical abuse occurs 54.1%, gross neglect 44.4%, sexual abuse 29.6%, emotional abuse 21.4%. Recurrence estimate for single type abuse 51.9%; mixed abuse types: double 66.3%, triple 85.0%. Higher rates of recurrence in families with a child aged 0-5 years and lower rates with children over 11 ($\chi^2 = 23.37$, $p < 0.01$, $df = 2$).
Johnson and L'Esperance (1984) ¹⁸	120 randomly selected cases from a large urban California county. Database extraction study; retrospective	9	Physical only (CSA excluded unless physical force).	Maximum 2 years Little data given on selection or dropouts	Family recurrence rate 55/120 (45.8%)	Correlations with reabuse: "stress" (>1 child in home): $r = 0.26$, $p < 0.001$; time abuser spends with child: $r = 0.28$, $p < 0.001$; "parenting skills" (mothers skills): $r = 0.36$, $p < 0.0005$; reasonableness of expectations of child: $r = 0.33$, $p < 0.0005$; "client's capacity to use resources": $r = 0.33$, $p < 0.0005$. (NB: some strong correlations between individual factors) Participation in FPS broken down into two researcher-derived indices: "collaboration" (participation in treatment planning and agreement with treatment plans), and "compliance" (keeping appointments, completing tasks and cooperation). Collaboration was not associated with substantiated reabuse. Compliance was associated with small reduction in substantiated reports during FPS ($b = -0.08$) but not after FPS.
Little (2001) ¹⁹	2681 families entering FPS during 1.5 months. Database extraction: retrospective	11	Any maltreatment necessitating FPS involvement.	From FPS referral to 1 year after ending use of FPS services. In FPS services for average of 107 days (range 1-617 days; sd 55.4) Usable data on 2194/2681 (81.8%) families.	Family recurrence rate during FPS (mean 107 days): (372/2194) 17%; during FPS and within 1 year after FPS: (419/2194) 19.1%.	Recurrence rates for families in which physical abuse occurs 54.1%, gross neglect 44.4%, sexual abuse 29.6%, emotional abuse 21.4%. Recurrence estimate for single type abuse 51.9%; mixed abuse types: double 66.3%, triple 85.0%. Higher rates of recurrence in families with a child aged 0-5 years and lower rates with children over 11 ($\chi^2 = 23.37$, $p < 0.01$, $df = 2$).
Little <i>et al</i> (2002) ²⁰	2681 families entered FPS during 1.5 months. Database extraction; retrospective.	10	Any maltreatment necessitating FPS involvement.	From FPS referral to 1 year after ending use of FPS services. In FPS services for average of 102.8 days. Data available for 1911 families (71.3%).	Child recurrence rate during FPS and within 1 year after FPS 564/1911 (29.5%).	Recurrence rates for families in which physical abuse occurs 54.1%, gross neglect 44.4%, sexual abuse 29.6%, emotional abuse 21.4%. Recurrence estimate for single type abuse 51.9%; mixed abuse types: double 66.3%, triple 85.0%. Higher rates of recurrence in families with a child aged 0-5 years and lower rates with children over 11 ($\chi^2 = 23.37$, $p < 0.01$, $df = 2$).

Table 1 Continued

Author (year)	Subjects, setting, and study design	Quality score (max. 14)	Abuse type	Follow up	Reabuse rate	Factors associated with reabuse
Murphy <i>et al</i> (1992) ²¹	206 cases of serious maltreatment heard at Boston Court. Unclear whether these are selected or consecutive but represent 40% of cases filed in years 1985 and 1986. Boston Juvenile Court. Database linkage study; retrospective.	4	Neglect and/or physical abuse of under 13 year olds (excludes CSA).	Mean follow up 3.5 years from onset of court case (not from the index episode). Dropouts: 13 missing cases.	Child recurrence rates: 18/63 (28.6%) of cases dismissed by the court; 8/130 (6.2%) of permanently removed cases.	In previously dismissed group returning to court there were more prior appearances and parental mental disorder than group who did not return to court ($\chi^2 = 6.4$, $df = 1$, $p < 0.01$ and $\chi^2 = 5.4$, $df = 1$, $p < 0.05$ respectively). (Severity and type of maltreatment, child's age and parents' rejection of court services were not associated with return to court.) In permanently removed group return to court was more likely to be associated with age > 3 years at first hearing and > 6 previous reports ($\chi^2 = 6.1$, $df = 1$, $p < 0.01$ and $\chi^2 = 4.9$, $df = 1$, $p < 0.05$ respectively). (Severity and type of maltreatment, parents' rejection of court services were not associated with return to court.) (Review)
Ritner (2002) ²²	447 children living with parents for minimum 6 months after initial maltreatment. All had CPS contact. "Randomly selected" 200 from active, 205 from closed cases, 42 from a transferred to foster care group. Metropolitan area in New York state. Database study; retrospective.	10	Any maltreatment.	Followed up every 6 months until 18 months. Dropouts: "initial sample" 500 children from child welfare database. 487 records located; 25 used to test instrument and a further 15 for inter-rater reliability.	18 month child recurrence rate: 101/447 (22.6%)	Strongest predictors of recurrent maltreatment: CPS investigation in last 5 years ($\chi^2 = 25.912$, $df = 5$, $p < 0.0001$), and caretaker's own abuse history - especially neglect ($\chi^2 = 11.08$, $df = 1$, $p < 0.001$). No association with cooperation/compliance with court orders. Predictors of reabuse in multivariate analysis were: mental health problems in parent no income at intake, and parental history as victim of abuse (however these only accounted for a very small part of the variance). Reabuse after evaluation occurred a mean of 5 weeks later (range 1-12 weeks) "There was no relationship between [recurrent maltreatment and] compliance to treatment, child's age at time of evaluation or IQ." ²⁷ "no substantiating statistics given." Significant relationship between notifications for abuse/neglect (esp. emotional abuse) before study and notifications after: intake RR = 6.44 (3.02-13.76).
Rivara (1985) ²³	71 children <24 months old referred for physical abuse to specialist hospital service.	6	Physical abuse only.	Follow up mean 30.8 months (sd 21.5) Dropouts: data missing in 3 cases	Child recurrence rate: 21/71 (30%).	
Swanston <i>et al</i> (2002) ²⁴	183 sexually abused children aged 5-15 years presenting to 2 hospital child protection units. Metropolitan Sydney, Australia. Prospective.	9	Sexual abuse only.	6 years from initial referral. No dropouts evident: some precise data missing regarding nature of initial CSA in 14 cases.	6 year child recurrence rate: 28% received notifications for re-abuse and/or neglect; 11% received 2 or more notifications.	Severity of index CSA related to subsequent notification for abuse/neglect ($\chi^2 = 29.54$, $df = 3$, $p = 0.02$). Demographics and maternal history of CSA not significantly related. Intake variables most related to subsequent notifications for maltreatment: caregiver change before intake, social worker's rating of family function and multiple changes in caregivers ($\chi^2 = 17.77$; $df = 2$; $p = 0.001$; $\chi^2 = 11.27$; $df = 4$, $p = 0.02$; χ^2 (MH) = 17.44, $df = 1$, $p < 0.001$); parental mental health problems (RR = 4.23, [95% CI 2.01-8.89]), parental conflict (RR = 2.25 (1.1-4.62)) and parental alcohol abuse variables (RR = 2.67 (1.24-5.74)). Multivariate model including prior notifications for emotional abuse, multiple changes in caregiver and severity of index CSA accounts for 13% variance (Similar trends obtained for relationships of individual variables to recurrence of CSA).

Table 1 Continued

Author (year)	Subjects, setting, and study design	Quality score (max. 14)	Abuse type	Follow up	Recidivism rate	Factors associated with recidivism
Wood (1997) ²⁵	409 validated cases of child maltreatment selected in chronological order from January 1990. No apparent exclusion criteria. El Paso, Texas. Retrospective case note analysis.	10	Any maltreatment including mixed	Follow up: 2 years after index event. No dropouts recorded. However, 8 / 27 crucial risk indicators were unscorable because of insufficient data (e.g. prior placement for child; changes of household and drug or alcohol abuse).	2 year child recurrence rates: abuse 9%; neglect 5%. Overall maltreatment rates unclear as overlap between categories not described.	a) Substantiated subsequent abuse associated with: prior history of episodes of abuse / neglect in family ($\chi^2 = 19.4$, $df = 2$, $p < 0.01$); authors' estimated odds ratio = 5.96; number of victims involved in incident ($\chi^2 = 8.8$, 1 , $p = 0.01$); primary caretaker abused as child ($\chi^2 = 6.0$, 1 , $p = 0.01$). b) Substantiated subsequent neglect associated with: current report of neglect ($\chi^2 = 11.8$, 2 , $p < 0.01$); prior history of episodes of abuse / neglect in family ($\chi^2 = 13.6$, 2 , $p = 0.01$); primary caretaker intellectual limits ($\chi^2 = 8.8$, 1 , $p = 0.01$); inadequate supervision ($\chi^2 = 4.6$, 1 , $p = 0.03$).

CPS, Child Protective Services; CSA, child sexual abuse; FPS, Family Preservation Services.

Table 2 Consideration of key risk factors in the studies

Risk factor	DePanfilis and Zuravin (1999a) ¹⁰	DePanfilis and Zuravin (2002) ¹³	DePanfilis and Zuravin (2001) ¹²	Littel (2001) ¹⁹	DePanfilis and Zuravin (1999b) ¹¹	Littel et al (2002) ²⁰	Rittner (2002) ²²	Wood (1997) ²⁵	Swanston et al (2002) ²⁴	English et al (1999) ¹⁴	Fluke et al (1999) ¹⁵	Johnson and L'Esperance (1984) ¹⁸	Fryer and Miyoshi (1994) ¹⁶	Rivara (1985) ²³	Herrenkohl et al (1979) ¹⁷	Murphy et al (1992) ²¹
Type of abuse (neglect v abuse)	-	-	0	0	+	0	0	0	0	0	+	0	+	0	-	-
Increased no. of previous episodes	-	-	0	0	0	+	+	+	+	+	+	0	0	0	0	+
Parental conflict	+	+	0	0	0	0	0	0	+	+	0	0	0	0	0	0
Parental mental health problems	0	0	0	0	0	0	+	0	+	+	0	0	0	0	0	+
Shorter time since abuse	0	0	+	0	+	0	0	0	0	0	0	0	+	+	0	0
Control for confounding factors	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	No	No	Yes	No	No	No	No
Quality score	12	12	11	11	10	10	10	10	9	9	9	9	8	6	4	4

+ positive evidence of risk factor in the paper.
- negative evidence of risk factor in the paper.
0 not assessed in the paper.

Types of maltreatment

Eight studies included children who had experienced any form of maltreatment (neglect, emotional abuse, physical abuse, sexual abuse).^{14–17 19 20 22 25} Six studies excluded child sexual abuse.^{10–13 21 23} One study was only of children who had experienced physical abuse¹⁸ and another included only children who had been sexually abused.²⁴ Most studies, including those which defined a specific type or types of maltreatment at the start, considered any form of subsequent maltreatment as a measure of recurrence.

Rates of maltreatment recurrence

There was a wide range of follow up times across the studies. A number of studies defined individual follow up times from index episode (range 1 month to 6 years).^{10–16 18 20 24 25} For the remaining studies,^{17 19–23} the precise length of follow up for individual cases was not clear.

There was wide variation in the rates of maltreatment recurrence across this body of studies. Some studies examined the recurrence of maltreatment in the same child.^{15–17 21 22 24 25} The largest and most inclusive of these,¹⁵ describes recurrence rates of 14.7% (range 3.5–22.2% across US states) at 6 months, and 22.6% at 18 months. In other studies^{10–14 17 19 20} maltreatment was considered recurrent if affecting any child in the same family. Of these studies, the largest, most inclusive found a recurrence rate of 6.4% at 6 months and 10.6% at 18 months.¹⁴

The time of greatest risk of recurrent maltreatment appears to be soon after an index episode—particularly during the first month.^{12 16 23} Two years after case closure the risk of recurrent maltreatment levels out and remains low.¹²

Factors associated with maltreatment recurrence

Details of the individual factors associated with maltreatment recurrence in each study are given in the tables.

Type and severity of abuse

The balance of research suggested that neglect is the type of abuse associated with the highest risk of future maltreatment.^{11 15 16 25} One study, with a low quality score, differed from this;¹⁷ while finding high rates of recurrent neglect, it found even higher rates of recurrent physical abuse.

Only two studies examined the relationship between the severity of index maltreatment and future recurrence. Swanston and colleagues²⁴ found that more severe forms of sexual abuse were related to subsequent notifications for maltreatment. In their court sample, Murphy and colleagues,²¹ found no association between severity or type of index maltreatment and a later return to court (note low quality score for this study).

Number of previous episodes of maltreatment

A prior history of maltreatment was the factor most consistently associated with recurrent maltreatment in the studies reviewed here.^{14 20–22 24 25} English *et al*¹⁴ found that the “largest single factor (in recurrence) is number of prior CPS referrals...” Other studies found that the risk of recurrent maltreatment increases after each maltreatment event, and that the time between episodes of maltreatment shortens as number of maltreatment episodes increases.^{12 15} Only two studies with good quality scores allowed for the calculation of a risk estimate:^{24 25} previously maltreated children were approximately six times more likely to experience recurrent maltreatment than children who had not previously been maltreated.

Child factors

A limited number of child factors were considered by researchers.

Four studies found that younger children were at higher risk of recurrence of maltreatment.^{14–17} Three other studies^{21 23 24} found no effect of age. (Rivara²³ gave no statistics to support these findings and Murphy *et al*²¹ achieved a low quality score.)

The three studies that examined gender differences found no significant differences in recurrence between boys and girls.^{16 22 24}

Only one study specifically examined ethnicity.¹⁶ There were no robust findings of differences in recurrence rates between ethnic groups.

Parent factors

Three studies found associations between recurrence of maltreatment and the child’s primary caretaker themselves having been maltreated as a child.^{14 22 25} Such an association was not found by Swanston *et al*’s²⁴ study of recurrence after sexual abuse.

Both English¹⁴ and Rittner²² found an association between a parental history of substance abuse and subsequent maltreatment. In Rittner’s study²² this association disappeared when other factors were controlled for using multivariate analysis. Swanston *et al*²⁴ found specifically that a history of alcohol abuse in a parent increased the risk of recurrence of maltreatment.

Two studies^{22 24} found that a parental history of mental health problems was associated with recurrent maltreatment. English *et al*¹⁴ found that caregiver impairments (mental, physical, emotional—not further specified) were associated with recurrent maltreatment. Murphy *et al*,²¹ one of the lower quality scoring studies, found that parental psychosis or “character disorder” was associated with an increased risk of return to court for repeated maltreatment. Wood *et al*²⁵ found that caretaker intellectual limitations were associated with subsequent neglect, but that caretaker age was not associated with recurrent maltreatment.

Factors related to parenting ability were studied by Johnson and L’Esperance.¹⁸ Variables were combined to produce a “parenting skills index” (mother’s skills and reasonableness of expectations) which was associated with recurrent maltreatment. English¹⁴ found that the degree of protection offered to the child by the non-abusing carer was linked to lower rates of recurrent maltreatment.

Family environmental factors

Parental conflict was associated with recurrent maltreatment in one study.²⁴ Two studies^{10 14} noted an association between domestic violence and recurrent child maltreatment.

Families who had a child previously placed in care (not necessarily the index child) were found to be at higher risk of recurrent maltreatment by Depanfilis and Zuravin.¹⁰ Swanston *et al*²⁴ found that a change in caregiver before intake, social workers’ rating of family functioning, and multiple changes in caregiver were each associated with both recurrent sexual abuse and maltreatment overall.

Wood²⁵ found that the number of victims involved in an incident of abuse was associated with recurrent maltreatment, as was inadequate supervision by either caregiver. Inadequate physical care was not associated with recurrent maltreatment.

DePanfilis and Zuravin¹⁰ found that a social support deficit construct (no support in extended family, no supportive friends, ineffective use of informal helping systems) was associated with recurrent maltreatment. English¹⁴ found similarly for “lack of social support”. Elsewhere, authors created “family stress”,¹⁰ “child vulnerability”,¹⁰ and “parental stress”¹⁸ constructs or indices, which were each significantly associated with recurrent maltreatment.

Rittner²² was alone in studying economic factors. She found that having no income was related to recurrent maltreatment.

Engagement with services

A number of factors related to compliance with services were found to be related to outcome.

Attendance was associated with a significant reduced risk of recurrence of maltreatment in one study.¹³ A number of service factors, however, were *not* related to risk of recurrence. These included: admission by perpetrator; numbers of caseworkers or casework contacts; use of the juvenile court; level of cooperation of caregiver; presence of signed service agreement; and degree of improvement by the end of the study.

Johnson and L'Esperance¹⁸ found that a client's capacity to use resources was associated with reduced risk of recurrent abuse. Littel¹⁹ examined participation in treatment planning ("collaboration") and found, as expected, a direct relationship with compliance with programme expectations. Equally, greater "compliance" (keeping appointments, completing tasks, and cooperation) was associated with reduced risk of recurrent maltreatment during service provision but not after service termination.

Rittner²² found that cooperation/compliance with court orders was not predictive of maltreatment recurrence. Rivara²³ also stated (without statistical support) that there was no relation between compliance with treatment and recurrent maltreatment.

Mixed effects and models

In some studies authors attempted to construct models of risk to predict later recurrences of maltreatment.^{10 18 22 24} Such models did not appear strongly predictive of recurrent maltreatment and there was no evidence of validation in other populations.

DISCUSSION

We identified factors associated with substantiated recurrent maltreatment in children and families. Individual factors most consistently identified were: the number of previous episodes of maltreatment in the child or family; neglect (as opposed to other types of maltreatment); parental conflict; and parental mental health problems.

A range of other parental, family, and environmental factors were also found to be associated with recurrent maltreatment, albeit less consistently. Those with some suggestion of association with recurrent maltreatment were: parental substance/alcohol abuse; "family stress"; a lack of social support; families with younger children; parental history of abuse; and already being in contact with child protection services.

It was consistently found that the period of greatest risk for maltreatment recurrence occurred directly after the index episode with the risk then gradually declining with time. (This should be interpreted somewhat cautiously however, as most studies did not use survival analysis techniques and so this finding may be somewhat artefactual.) Furthermore, the risk of recurrent maltreatment increased after each maltreatment event, and the time between episodes of maltreatment shortened as the number of maltreatment episodes increased.^{12 15}

It is notable that some factors identified elsewhere^{5 7} did not emerge as significant risk factors in this review. These include quality of attachment or closeness in the relationship between parent and child, and severity of abuse.

A number of limitations of this review should be considered when interpreting the findings. Firstly, we only selected studies that included cases of substantiated maltreatment. This led to some studies, particularly those

including all referrals to child protection services, being excluded. There has been considerable debate about whether it is meaningful to separate studies in this way,^{13 25} and by doing so we may have introduced an element of bias in that these findings may not reflect accurately the risk factors for all children who are maltreated, rather just those who pass into Child Protection Services. However, the decision to do this does mean that the findings considered here are from studies with clearly verified outcomes. In order to maintain this focus on the child at risk, we also excluded studies which focused specifically on predictors of recidivism in adult offenders. These are reviewed elsewhere.^{26–28}

The literature itself is heterogeneous in design, types of abuse studied, populations sampled, risk factors considered, and methods of statistical analysis. Of the studies selected, most were retrospective in design, and several lacked important information about the conduct of the research. Unsurprisingly, given the difficulties in following up families where abuse has occurred, there were significant drop-out rates. The different populations studied and the wide variations in quality between studies meant that meta-analysis could not be meaningfully undertaken;⁹ this limits the extent to which robust conclusions can be drawn.

As with any systematic review, there is a possibility of publication bias (whereby studies with positive results are more likely to be published). We endeavoured to reduce this by contacting researchers in the field to obtain unpublished research. A further criticism sometimes levelled at systematic reviews in this field is that by excluding all but the most methodologically robust studies, important research findings are lost. While there is an omission of some research, this critique also reflects a strength of systematic reviews compared to narrative reviews—the reader can be clear on what basis the studies have been selected, and the review is less prone to other forms of bias, introduced by too much weight being given to the findings of studies which are flawed or weaker in design. In this context systematic reviews should be seen as complementary to narrative reviews, providing a clear and sometimes different view of the literature. Indeed we have also undertaken more narrative reviews of this kind.^{5 29}

A further limitation to be noted is that 15 of the studies in this review were conducted in the United States and the sixteenth in Australia; some caution should therefore be exercised in extrapolating the findings directly to the United Kingdom and other jurisdictions where different services and definitions may prevail. Large differences in demographic factors such as levels of poverty are also important to consider when extrapolating the findings to other settings.

It is of interest that the findings of the present review accord broadly with previous reviews^{5 7} that have not restricted themselves to substantiated abuse, or to particular (more robust) study designs. These have linked the following psychosocial risk factors with recurrent maltreatment: neglect; severe maltreatment; multiple types; lack of acknowledgement, or cooperation; younger children; prior history of abuse; parental mental disorder, substance abuse; larger families; young caregivers; step parents; rural families; poor families; domestic violence; and lack of social support. This degree of concordance provides support for the robustness of the present findings.

This study underscores evidence for the existence of a variety of family, child, parental, and environmental indices associated with recurrent child maltreatment. This lends support to the use of multi-modal assessment approaches, and in turn implies a need for clinicians to use the factors identified as part of a structured approach to the management of risk of recurrence.³¹ The factors themselves may be identified by different professionals, thus emphasising the

What is already known on this topic

- Child maltreatment is common and can have serious adverse consequences for those affected. Those children who have been maltreated are also at increased risk of further maltreatment
- Competent identification of those at highest risk of further maltreatment is an important part of safe and effective practice, but is a complex and demanding task

What this study adds

- Systematic review of those factors that are associated with an increased risk of recurrent maltreatment
- The most important predictors of recurrent maltreatment are: number of previous episodes of maltreatment; neglect (as opposed to other forms of maltreatment); parental conflict; and parental mental health problems

need for inter-professional collaboration to improve the quality and process of assessment and management of risk. Only then can we hope to reduce the likelihood of subsequent maltreatment recurrence in individual cases.

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REFERENCES

- 1 Lord Laming. *Inquiry into the death of Victoria Climbié*. London: Stationery Office, 2003.
- 2 Kaplan S, Pelcovitz D, Labruna V. Child and Adolescent abuse and neglect research: a review of the past 10 years. Part I: Physical and emotional abuse and neglect. *J Am Acad Child Adolesc Psychiatry* 1999;**38**:1214–22.
- 3 Hamilton C, Browne K. Recurrent maltreatment during childhood: a survey of referrals to police child protection units in England. *Child Maltreatment* 1999;**4**:275–86.
- 4 Paz I, Jones DPH, Byrne G. Child maltreatment, child protection and mental health. *Curr Opin Psychiatry* 2005;**18**:411–21.
- 5 Jones DPH. The effectiveness of intervention. In: Adcock M, White R, eds. *Significant harm: its management and outcome*. Croyden: Significant Publications, 1998:91–119.
- 6 Department of Health. *Framework for the assessment of children in need and their families*. London: The Stationary Office, 2000.
- 7 Fluke JD, Hollinshead DM, Walter R. Macdonald and Associates Inc. *Child maltreatment recurrence*. Duluth, GA: National Resource Center on Child Maltreatment, 2003.
- 8 Altman DG. Systematic reviews of evaluations of prognostic variables. In: Egger M, Davey Smith G, Altman DG, eds. *Systematic reviews in health care. Meta-analysis in context*, 2nd edn. London: BMJ Books, 2001:228–47.
- 9 Egger M, Schneider M, Davey Smith G. Spurious precision? Meta-analysis of observational studies. *BMJ* 1998;**316**:140–4.
- 10 DePanfilis D, Zuravin SJ. Predicting child maltreatment recurrences during treatment. *Child Abuse Negl* 1999;**23**:729–43.
- 11 DePanfilis D, Zuravin SJ. Epidemiology of child maltreatment recurrences. *Social Service Review* 1999;**73**:218–38.
- 12 DePanfilis D, Zuravin SJ. Assessing risk to determine the need for treatment. *Child and Youth Services Review* 2001;**23**:3–20.
- 13 DePanfilis D, Zuravin SJ. The effect of services on the recurrence of child maltreatment. *Child Abuse Negl* 2002;**26**:187–205.
- 14 English DJ, Marshall DB, Brummel S, et al. Characteristics of repeated referrals to child protective services in Washington State. *Child Maltreatment* 1999;**4**:297–307.
- 15 Fluke JD, Yuan YYT, Edwards M. Recurrence of maltreatment: an application of the National Child Abuse and Neglect Data System (NCANDS). *Child Abuse Negl* 1999;**23**:633–50.
- 16 Fryer GE, Miyoshi TJ. A survival analysis of the revictimization of children: the case of Colorado. *Child Abuse Negl* 1994;**18**:1063–71.
- 17 Herrenkohl RC, Herrenkohl EC, Egolf B, et al. The repetition of child abuse: how often does it occur? *Child Abuse Negl* 1979;**3**:67–72.
- 18 Johnson W, L'Esperance J. Predicting the recurrence of child abuse. *Social Work Research and Abstracts* 1984;**20**:21–6.
- 19 Littel JH. Client participation and outcome of intensive family preservation services. *Social Work Research* 2001;**25**:103–14.
- 20 Littel JH, Schuerman JR. What works best for whom: a closer look at intensive family preservation services. *Child and Youth Services Review* 2002;**24**:673–99.
- 21 Murphy JM, Bishop SJ, Jellinek MS, et al. What happens after the care and protection petition? Re-abuse in a court sample. *Child Abuse Negl* 1992;**16**:485–93.
- 22 Rittner B. The use of risk assessment instruments in child protective services case planning and closures. *Child and Youth Service Review* 2002;**24**:189–207.
- 23 Rivara FP. Physical abuse in children under two: a study of therapeutic outcomes. *Child Abuse Negl* 1985;**9**:81–7.
- 24 Swanston HY, Parkinson PN, Oates RK, et al. Further abuse of sexually abused children. *Child Abuse Negl* 2002;**26**:115–27.
- 25 Wood JM. Risk predictors for re-abuse or re-neglect in a predominantly Hispanic population. *Child Abuse Negl* 1997;**21**:379–89.
- 26 Marshall DB, English DJ. Survival analysis of risk factors for recidivism in child abuse and neglect. *Child Maltreatment* 1999;**4**:287–96.
- 27 Hanson RK, Steffi RA, Gauthier R. Long-term recidivism of child molesters. *J Consult Clin Psychol* 1993;**61**:646–52.
- 28 Hanson RK, Bussiere MT. Predicting relapse: a meta-analysis of sexual offender recidivism studies. *J Consult Clin Psychol* 1998;**66**:348–62.
- 29 Jones DPH, Hindley N, Ramchandani P. Making plans: assessment, intervention and evaluating outcomes. In: Rose W, Aldgate J, Jones D, eds. *The developing world of the child*. London: Jessica Kingsley, 2006.