

The effectiveness, acceptability and cost-effectiveness of psychosocial interventions for maltreated children and adolescents: an evidence synthesis

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Scientific summary

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Background

Maltreatment adversely affects the development of children and young people in many ways, often over long periods of time, and the cumulative consequences of maltreatment in early childhood can be particularly devastating. Despite recent emphasis on the importance of early intervention, significant numbers of children continue to have to deal with the realities of physical and emotional abuse, physical and emotional neglect, and sexual abuse, whether directly, or indirectly as the result of witnessing the abuse of others.

Objectives

We set out to answer the following questions:

- i. What interventions are effective, for which children, with what maltreatment profiles, in what circumstances?
- ii. When two or more interventions might be appropriate, which is most likely to be effective?
- iii. Which interventions are of no benefit or may result in harm?
- iv. Which interventions are most accessible and acceptable to carers, children and young people?
- v. What do we know about the economic benefits of interventions, and the potential value of undertaking future research?

Project oversight

The research team were experienced in systematic review methodology and provided topic expertise in this field. A Steering Group was also established to guide the overall direction of the project and to ensure that a range of expertise and perspectives were properly considered.

The evidence synthesis work was planned in accordance with guidance provided by the Centre for Reviews and Dissemination and The Cochrane Collaboration. A protocol for the review consistent with Preferred Reporting Items for Systematic Reviews and Meta-Analyses criteria was developed and agreed with the Steering Group. The review protocol is registered with PROSPERO (PROSPERO 2013:CRD42013003889).

Inclusion and exclusion criteria

As this review was designed to address questions of effectiveness, acceptability and economic benefits, it was necessary to consider different study types. The inclusion criteria were tailored accordingly and our inclusion criteria and associated searches were kept deliberately broad to identify studies that were relevant to our aims.

Types of study

Synthesis of evidence of effectiveness

Any controlled study in which psychosocial interventions were evaluated for this population was considered, including randomised and quasi-randomised trials, quasi-experimental (QEx) controlled studies and

controlled observational studies (COSs). Where no controlled effectiveness studies were identified, other study designs were considered, purely for the purposes of informing the development of future research.

Synthesis of acceptability studies

Studies that asked participants for their views were included, irrespective of study design or data type.

Economic evaluation

In addition to the study designs included in the synthesis of evidence of effectiveness, uncontrolled costing studies were considered. For the purposes of the synthesis of economic studies, randomised controlled trials (RCTs) were prioritised, although QEx controlled studies and COSs (cohort studies and case-control studies) were also considered.

Types of populations/patients

Studies were eligible if they involved children aged between 0 and 17 years 11 months, who had experienced maltreatment. Whole studies were included if recruitment was targeted at maltreated children and young people of this age range. Studies of young people up to the age of 24 years 11 months were included if the maltreatment had taken place before the age of 17 years and 11 months.

Types of interventions

Any psychosocial intervention provided to maltreated infants, children or adolescents in any setting (e.g. family, community, residential, school) and by any provider, aiming specifically to address the consequences of any form of maltreatment, with or without the involvement of a carer or carers.

We included any intervention based on cognitive theories [e.g. cognitive-behavioural therapy (CBT), trauma-focused CBT (TF-CBT), and abuse-focused CBT]; eye movement desensitisation and reprocessing; interventions based primarily on forms of expression and communication drawn from the arts (e.g. art therapy, drama therapy, music therapy, play therapy and narrative group therapy); attachment-based interventions; interventions based on psychoanalytic theories, offered to the child or parent-child dyads; family/systemic interventions; multisystemic therapy; peer mentoring; enhanced foster care, including treatment foster care; and residential care, including models of therapeutic residential care. We included studies where interventions were targeted at those responsible for the child (e.g. parents or services) *and* that included outcomes for children. Studies where psychotropic medication was provided alongside psychosocial interventions were included.

Types of comparisons

Studies comparing psychosocial interventions with no-treatment arms, wait-list control groups, treatment as usual (TAU) and other active treatment controls were included.

Types of outcomes

Primary outcomes

Psychological distress/mental health [particularly post-traumatic stress disorder (PTSD), depression and anxiety, and self-harm]; behaviour (particularly internalising and externalising behaviours); social functioning, including attachment and relationships with family and others; cognitive/academic attainment; and quality of life.

Secondary outcomes

Substance misuse, delinquency, resilience and acceptability. We were also interested in any outcome related to carer distress, carer efficacy and, where appropriate, placement stability.

Consultations were undertaken with key stakeholders in order to identify appropriate primary and secondary outcomes.

Search methods

One overarching search strategy was developed to ensure coverage across all elements of the review. Research, professional, policy and grey literature were searched using systematic and comprehensive search strategies. No language limits or study design filters were applied. The main databases for health and allied health literature, social sciences and social welfare literature, education literature, other evidence-based research repositories and economic databases were searched to June 2014.

We searched the following databases from their date of inception between 28 February and 5 March 2015 and conducted an updated search of the main databases between 29 May and 2 June: Ovid MEDLINE, CINAHL, PsycINFO, EMBASE, CENTRAL, CDSR, DARE, Science Citation Index Expanded (SCIE), Health Managing Information Consortium (HMIC), Social Care Online, Social Science Citation Index, Campbell Library of Systematic Reviews, ERIC, Australian Education Index, British Education Index, Database of Promoting Health Effectiveness Reviews (DoPHER), Trials Register of Promoting Health Interventions (TroPHI), NHS Economic Evaluation Database (NHS EED), Paediatric Economic Database Evaluation (PEDE), Health Economic Evaluations Database (HEED), EconLit and the IDEAS economics database.

Data collection and analysis

Screening of citations and study selection

The original search was completed on 26 June 2013 and an updating search was undertaken on 4 June 2014. Two reviewers read full reports and determined eligibility for all studies.

Data extraction and management

Forms tailored to review objectives were developed and refined for both the effectiveness and acceptability studies. Two review authors independently extracted and recorded the data.

Data synthesis: effectiveness studies

All studies were mapped against type of maltreatment (specific or multiple) and goals of treatment (outcome domains and measures). Interventions were grouped according to a simple classification system. Priority was given to randomised and quasi-randomised trials.

Dichotomous measures of treatment effect: we calculated effect sizes as odds ratios (ORs) with 95% confidence intervals (CIs).

Continuous measures of treatment effect: we extracted unadjusted data where possible, both for consistency of interpretation across studies and because we anticipated that this data source would be less susceptible to selective reporting bias (in particular, the strategy prevents the possibility of biased selection of covariates for inclusion in the model). We converted continuous outcome data (e.g. post-intervention depression) into standardised mean differences (SMDs) and presented data with 95% CIs.

Where appropriate data were available, data synthesis was performed to pool the results. As clinical and trial heterogeneity were expected (even similar interventions are provided under different circumstances, by different providers, to different groups), we used a random-effects model.

Assessment of heterogeneity We explored the extent to which age (< 10 years old vs. > 10 years old), gender, ethnicity, type of maltreatment (sexual vs. physical), intervention type and parent involvement (child-only intervention vs. parent-and-child intervention) might moderate the effects of psychosocial interventions.

Sensitivity analyses Publication bias and small study effects were investigated using standards methods (e.g. funnel plots) and also within the synthesis models. When the data did not support such methods, the likelihood of publication bias was summarised narratively.

We examined the impact of trial/study factors, including risk-of-bias domains and cointerventions.

For outcomes for which there was an indication of intervention efficacy, we checked the robustness of results to using a 'change from baseline' measure, rather than post-treatment 'follow-up' measure as part of our sensitivity analyses.

Data synthesis: acceptability studies

A synthesis of acceptability data was undertaken using a narrative approach. Studies were grouped into the same intervention groups used for the synthesis of effectiveness studies.

Data synthesis: economic evidence

We conducted cost-effectiveness analyses for the most promising intervention using SMDs from meta-analyses as the measure of outcome and additionally using the results of a meta-analysis of a subgroup of studies that reported outcomes in terms of a single clinical measure: for example, the Children's Depression Inventory (CDI). Intervention costs were calculated from data included in each paper on the nature of the intervention under evaluation, including the number and duration of sessions, and the format of delivery (group or individual). Unit costs were estimated using nationally applicable UK unit costs per hour of face-to-face contact for relevant professionals (www.pssru.ac.uk/project-pages/unit-costs/2014/). It was not always clear from the papers what professionals had delivered the interventions and thus we estimated costs for three categories of professional: (1) clinical psychologist; (2) psychologist; and (3) counsellor. Cost-effectiveness was explored initially through the calculation of incremental cost-effectiveness ratios, defined as the difference in mean costs divided by the difference in mean effects between the two groups. Uncertainty was explored using probabilistic sensitivity analysis, a form of analysis that involves assigning probability distributions to parameters (costs and effects) and sampling at random from the distributions to generate an empirical distribution for each parameter.

Results

We identified 198 studies assessing the effectiveness of relevant psychosocial interventions for maltreated children (including 62 trials); six studies assessing the cost-effectiveness (including five carried out using data from a trial and one decision-analytic model); and 73 studies that looked at acceptability of treatment.

Meta-analyses of effectiveness were possible only for CBT for sexual abuse and relationship-based interventions (RBIs). Summarising data in this way for studies of CBT for sexual abuse suggested a post-treatment reduction in PTSD [SMD -0.44 (95% CI -4.43 to -1.53)]; a post-treatment reduction in

depression [CDI mean difference -02.83 (95% CI -4.53 to -1.13); and a post-treatment reduction in anxiety [SMD -0.23 (95% CI -0.03 to -0.42)]. No differences were observed for post-treatment sexualised behaviour, externalising behaviour, behaviour management skills of parents or parental support to the child. It was not possible to undertake meta-analyses for the remaining comparisons. Findings from attachment-focused interventions suggested improvements in secure attachment [OR 0.14 (95% CI 0.03 to 0.70)], reductions in disorganised behaviour [SMD 0.23 (95% CI 0.13 to 0.42)], but no differences in avoidant attachment or externalising behaviour. Effectiveness research rarely considers issues of accessibility/acceptability and, although this project highlighted the important role of parents/other caregivers, relatively few studies had addressed this, or indeed the impact of the therapist–child relationship.

The results of the six ‘full’ economic evaluations located were conflicting. Exploration of the cost-effectiveness of the most promising intervention, CBT for children who had been sexually abused, using outcome data from meta-analysis, was still unable to provide a clear conclusion. Very limited economic evidence of RBIs, psychoeducation, co-ordinated models of care and intensive service models was available. No economic evaluations of systemic interventions, group work, psychotherapy/counselling, peer mentoring, therapeutic residential or day-care services, or activity-based therapies with children who have been maltreated, were located.

Conclusions

The available evidence provides only partial answers to our review questions.

1. It is difficult to draw very firm conclusions about which interventions are effective for which children, with what maltreatment profiles, in what circumstances. The use of other-treatment controls, plus susceptibility to bias, may account for the evidence being less than clear cut in relation to some interventions. For some interventions, the results of studies are unequivocally positive, but they are few in number and some also suffer from weaknesses in design and implementation. In almost all cases they have been conducted in policy and practice contexts that differ markedly from the circumstances in which interventions might be offered in the UK. Furthermore, the intervention has often been monitored and quality assured to an extent that the studies evaluating them are closer to efficacy trials than effectiveness trials. This means that even where we have identified evidence of positive outcomes following specific therapeutic approaches, there can be no expectation that these results would necessarily be observed in practice.

For treating the symptoms of PTSD, TF-CBT currently enjoys the strongest evidence of effectiveness, although there have been few independent evaluations of this intervention. The most effective CBT interventions for children who have been sexually abused appear to be those that involve the non-offending parents. Therapeutic day care and peer mentoring may also provide opportunities to address developmental and social-specific sequelae of maltreatment in preschool children. For infants and preschool children, the evidence suggests that interventions that target parental sensitivity and responsiveness [Attachment and Biobehavioral Catch-up (ABC); child–parent psychotherapy; multidimensional treatment foster care for preschoolers] may be effective in promoting secure attachments with birth parents and foster carers. Given the importance of secure attachment in promoting children’s overall development and well-being, these are important findings.

2. Although a number of studies compared an intervention with TAU, few studies compared treatments ‘head to head’, and it was not possible to confidently draw conclusions about the comparative effects of different interventions.
3. On the basis of the studies identified in this review, it is not currently possible to conclude, with any certainty, which interventions were of no benefit, or may result in harm, but we identified a total absence of robust evidence for many of the interventions currently provided to maltreated children within the UK.

4. Few unequivocally clear answers are to be found from studies seeking to ascertain which factors encourage people to seek therapy, to accept an offer of therapy, to actively engage with therapy and to 'stick with it'. A key observation is that researchers routinely miss the opportunity to consider issues of accessibility and acceptability, although there are some low-cost strategies that could be deployed to explore the barriers and facilitators both of engagement or retention in therapy. Given the difficulty of disinterring retention in a study from retention in an intervention, there is a research gap in relation to these important issues within the UK. Some of the studies did focus on issues that mattered to the young people in our advisory group, and some of the findings resonate with their concerns. The pivotal role that parents and other caregivers play in ensuring the availability of therapy to young people, particularly younger children, was recognised as an issue in our consultations, and mirrored in the findings from the included studies. Only one study included in this review mentioned the importance of being believed, but the concern about not being believed was a very significant issue for some of the young people with whom we talked.
5. The profile of included studies indicates a bias towards the psychiatric sequelae of maltreatment. Although these are important, they represent only one of the many adverse consequences of maltreatment on children's development, and studies of interventions that promote children's social, emotional and physical development are needed.
6. Little is known about the cost-effectiveness of alternative interventions for maltreated children. Only six economic evaluations that could be considered 'full' economic evaluations (comparative analysis of alternative interventions in terms of both costs and effects) were located and the results are conflicting.
7. Well-designed and carefully implemented RCTs are required to test the relevance of promising interventions in the UK context, and to evaluate those interventions that are most commonly provided, but which currently lack empirical support. The particular needs of seriously maltreated children raise important issues about the most appropriate conceptualisations of need and their implications for professional training and the nature of services required.

Study registration

This study is registered as PROSPERO CRD42013003889.

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