A meta-analysis of interventions for bereaved children and adolescents

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CRD summary
This review concluded that there were small to moderate effect sizes of interventions for bereavement and grief reactions in children and adolescents. The authors' conclusions may be not reliable, given a lack of full details on study quality, the possibility of poor quality of included randomised controlled trials and some methodological concerns in the review methods.

Authors' objectives
To evaluate the effectiveness of interventions for bereavement and grief reactions in children and adolescents.

Searching
MEDLINE, EMBASE, PsycINFO, BIOSIS Previews, ERIC, PILOTS, OAlster, Current Contents, Web of Science, Social Services Abstracts and The Cochrane Library (DARE) were searched from inception to June 2006. Search terms were reported. Dissertation Abstract International, ProQuest, Theses Canada, British Theses Service and TheO (Theses Online, German) were searched for unpublished studies. Two German literature databases (PSYNDEXplus and SOMED) were searched. The Cochrane Library, PsiTri and Current Controlled Trials were searched for controlled studies. Reference lists of relevant publications were screened. More than 40 relevant journals were handsearched. Researchers were contacted for unpublished studies or studies in progress.

Study selection
Studies that evaluated various interventions that followed loss in bereaved children and adolescents (younger than 18 years old) were eligible for inclusion. Eligible studies had to provide quantitative outcome measures and sufficient data for calculation of an effect size. Studies that reported only post-intervention or follow-up data were included if there was no additional intervention between pre and post follow-up data collection. The review outcomes included change in severity of depression, anxiety, post-traumatic symptoms, social adjustment, well-being, somatic symptom and other symptoms.

The evaluated interventions involved two types: preventative and psychotherapeutic interventions. Preventative interventions included counselling, music therapy, psychoeducation, normalising of bereavement and social sharing, attachment theory, psychodynamic and expressive art therapy. Psychotherapeutic interventions included psychoeducation and cognitive-behavioural music therapy. Preventative interventions targeted patients with or without symptoms. Psychotherapeutic interventions targeted patients who were symptomatic. Interventions were mostly conducted in group and/or individual and family settings. Among the controlled studies, controls involved waiting list, no treatment or an alternative intervention. The relationship to deceased for included participants were primarily family members or friends. The age of included participants ranged from zero to 20 years. Only two studies reported follow-up data; duration of follow-up ranged from two weeks to 40 months.

Two reviewers independently assessed studies for inclusion. Any disagreement was resolved by discussion.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Mean and standard deviations (SDs) were extracted to enable calculation of the effect size (Hedges's g) with 95% CI for different symptom outcomes. Hedges's g was calculated by the mean difference divided by the pooled standard deviation, corrected for small sample bias. If means and standard deviations were not available, an imputation was employed using recognised methods (details in the paper). Following the effect sizes for each symptom outcome, an overall effect size was calculated for each individual study. Study authors were contacted for additional information when data for the effect size calculation were not sufficient.
The authors did not state how many reviewers performed data extraction.

**Methods of synthesis**
The studies were combined in a meta-analysis. Pooled effect sizes, with 95% CIs, were calculated using a random-effects model. Separate analyses were performed with controlled and uncontrolled studies. Sensitivity analyses were performed by calculation of effect sizes using the Cohen’s d method. Statistical heterogeneity was assessed using $Q$ and $I^2$ statistics. Publication bias was assessed by calculation of fail-safe N. Subgroup analyses were conducted to assess the impact of the following factors on the outcomes: symptom severity, age, amount of treatment, different lengths of time between bereavement and intervention, therapeutic confrontation and publication type. A weighted random-effects regression analysis was used to test for moderator effects.

**Results of the review**
Thirteen controlled studies ($n=812$) and 12 uncontrolled studies ($n=261$) were included in the review. Eight of the controlled studies were randomised controlled trials (RCTs). No RCTs used intention-to-treat analyses. Reporting of drop-outs varied substantially across controlled studies.

When pooling all controlled studies, interventions were associated with a significant improvement in symptoms for bereavement and grief reactions in children and adolescents (Hedges’s $g$ 0.35, 95% CI 0.15 to 0.57; 13 studies). Significant heterogeneity was observed for this outcome ($I^2=92.84\%$).

When pooling all uncontrolled studies, interventions were associated with a significant improvement in symptoms for bereavement and grief reactions in children and adolescents (Hedges’s $g$ 0.49, 95% CI not reported; 12 studies). Significant heterogeneity was observed for this outcome ($I^2=62.17\%$).

Subgroup analyses showed that in both controlled and uncontrolled studies there were larger effect sizes of interventions for symptomatic or impaired children and adolescents compared with those without symptoms. Results of other subgroup analyses were reported.

Sensitivity analyses did not significantly alter the results. The fail-safe N showed little evidence of publication bias. Regression analyses showed possible moderators of treatment effects: symptom severity, age, amount of treatment, time since bereavement, confrontation and publication bias.

**Authors’ conclusions**
There were small to moderate effect sizes of the interventions for bereavement and grief reactions in children and adolescents. Interventions for symptomatic or impaired children and adolescents tended to show a larger effect size than interventions for those without symptoms.

**CRD commentary**
This review’s inclusion criteria were clear. Relevant databases were searched. Sufficient attempts were made to find both published and unpublished studies, which minimised potential for publication bias. It was unclear whether language restrictions were applied in the search, which made it difficult to assess the risk of language bias. Steps were taken to minimise errors and biases by having more than one reviewer independently undertake study selection; it was unclear whether data extraction was performed in duplicate. No formal validity assessment was conducted. The authors reported some aspects of study quality of RCTs and found that none of them used intention-to-treat analyses, which threatening the validity of trial results. Given the diversity of included studies, using a meta-analysis to pool the results might be not have been appropriate.

A lack of full details on study quality, the possibility of poor-quality RCTs and some methodological concerns in the review methods mean that the authors’ conclusions may be not reliable.

**Implications of the review for practice and research**
**Practice:** The authors did not state any implications for practice.
The authors stated that future studies should develop reliable and valid measures for different age groups. The most promising measure (Expanded Childhood Grief Inventory) should be applied and evaluated in children and adolescents with other types of bereavement and without comorbid post-traumatic stress disorder. Future research should focus on bereaved youth with clinically significant distress in terms of the development of clinical symptoms beyond an acute grief reaction. Given that counselling provided support and comfort in difficult times, the outcome measures for counselling interventions should reflect this goal.

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