Psychological interventions with siblings of pediatric cancer patients: a systematic review
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CRD summary
The authors concluded there was tentative evidence that psychological interventions aimed at siblings of paediatric cancer patients can effectively reduce psychological maladjustment and improve medical knowledge about cancer. However, the number of studies was small and there were several methodological shortcomings that included single group study design. The authors’ cautious conclusions reflected the evidence presented.

Authors' objectives
To evaluate the effectiveness of psychological interventions aimed at siblings of paediatric cancer patients.

Searching
MEDLINE, EMBASE, CINAHL, PsycINFO, Database of Cochrane Systematic Reviews and ProQuest Digital Dissertation database were searched from 1980 to September 2008. Search terms were reported. Reference lists of relevant studies and reviews were searched. Doctoral dissertations were screened if they were available in full text.

Study selection
Studies that evaluated the effects of intervention programmes aimed at improving the psychological adjustment of siblings of paediatric cancer patients were eligible for inclusion. Eligible participants were children or adolescents up to 18 years old with a sibling who was diagnosed with childhood cancer. Eligible studies needed a sample of at least 10 participants that included 50% or less of bereaved children. Studies needed to report standardised and validated outcome measures with self or proxy report of psychological adjustment, quality of life, satisfaction with the intervention or medical knowledge.

Most of the included interventions were conducted in a group setting. Number of sessions and group size varied between studies. Other interventions included a camp format with a duration of four to seven days and an individual intervention. In two studies, parents were involved with the programmes. Most programmes were provided by psychologists or interdisciplinary teams; one programme was provided by nurses. Outcomes included depression, anxiety, social adjustment, self esteem, behavioural problems, post-traumatic stress and health-related quality of life (HRQoL). These were measured with various published scales that included Sibling Perception Questionnaire (details reported in review). Participant age ranged from six to 20 years. Time since diagnosis of cancer varied between studies (where reported). Most studies were set in USA; the rest were from Canada, Israel, the Netherlands and Australia.

One reviewer screened studies for inclusion from titles and abstracts. Two authors independently assessed full-text papers for inclusion.

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

Data extraction
Data on relevant outcomes were extracted by one reviewer and used to calculate the effect size using within-group differences between pre/post intervention means divided by the weighted pooled pre/post standard deviation for the intervention groups. Between-group effect sizes were calculated, where possible, by comparison of the difference between pre/post mean for intervention and comparison groups divided by the pooled standard deviation. Where necessary, authors were contacted for additional information.

Methods of synthesis
The studies were combined in a narrative synthesis.

Results of the review
Fourteen studies (n=518, range 11 to 90 siblings) were included in the review: three RCTs, one non-randomised controlled study and 10 pre-post intervention studies.

There were significant improvements reported for psychological interventions for siblings' depressive symptoms (four studies) and self-reported HRQoL (two studies). There were inconsistent results for anxiety (10 studies), behavioural problems (four studies), social adjustment (two studies), self-esteem (four studies) and post-traumatic stress symptoms (two studies).

Six studies reported Sibling Perception Questionnaire results and found improvement in siblings' affective response (two studies) and medical knowledge (three studies). Results were inconsistent for perception of impact of illness, interpersonal and intrapersonal subscales (five studies), communication (four studies) and fear of disease (three studies).

A high level of satisfaction with the intervention was reported for siblings and parents (four studies).

**Authors' conclusions**

There was tentative evidence that psychological interventions aimed at siblings of paediatric cancer patients can effectively reduce psychological maladjustment and improve medical knowledge about cancer. However, the number of studies was small and several methodological shortcomings were noted.

**CRD commentary**

The review question was clearly defined with appropriate inclusion criteria. Some relevant sources were searched, apparently without language restriction. Attempts were made to reduce publication bias. Appropriate methods were used to reduce reviewer error and bias during study selection. It appeared that only one reviewer conducted data extraction, so there was potential for error and bias. Validity of the studies was not assessed, so results from these studies and any synthesis may not have been reliable. A narrative synthesis was appropriate given differences between studies in design, interventions and reported outcomes. Most of the included studies were single group pre-post intervention studies and so subject to multiple potential biases. There were limited details of participants and so it was unclear how generalisable to other groups the findings may have been. No details of follow-up were reported, so it was unclear whether results were sustained long term. The authors appropriately highlighted limitations in the review, such as the small number of studies, small sample sizes and single group designs. It would have been helpful had emphasis been put on the reporting of the RCTs and statistical information was reported more clearly.

The authors' cautious conclusions reflected the evidence presented.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that future studies should be of rigorous methodological quality, include RCTs, and use larger sample sizes, with sibling programmes that were theory based and used manuals. Future studies should distinguish content components and evaluate them separately, include direct comparisons between different settings (individual versus groups) and evaluate cost effectiveness.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.