Empirically supported treatments of disease-related symptoms in pediatric psychology: asthma, diabetes, and cancer
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Authors' objectives
To review empirical studies of psychological treatments for:

1. Reducing physical symptoms in children and adolescents with asthma.
2. Improving glycaemic control in children and adolescents with diabetes.

Searching
MEDLINE and PsycLIT were searched from 1970 using the search terms 'asthma', 'diabetes' or 'cancer' combined with phrases relating to psychological treatments, e.g. treatment, intervention, therapy, relaxation, biofeedback. In addition, reference lists of retrieved articles were examined for other relevant publications.

Study selection
Study designs of evaluations included in the review
Studies were included in the review if they met the following criteria:

1. Inclusion of children or adolescents with the relevant target illness.
2. Administration of a psychological intervention in an attempt to affect physical symptoms directly.

Study designs were predominantly between participants, but also included a number of within-participants and single case designs.

Specific interventions included in the review
Asthma:

1. Relaxation; 5 to 6 sessions of Jacobsonian progressive muscle relaxation (PMR) lasting from 20 to 60 minutes.
2. Biofeedback; 3 to 9 sessions of biofeedback (sometimes in conjunction with PMR) over a 3 to 8 week period. The number of sessions ranged from 1 to 3 per week, and each session lasted between 10 and 30 minutes.
3. Family therapy; 2 to 21 sessions.

Diabetes:

1. Psychoanalysis; 3- to 5-weekly sessions over a 15- to 148-week period.
2. Social skills training; 10 to 15 sessions, 2 to 5 times per week.
3. Stress-management; 13 group sessions (10 over 12 weeks then 3- monthly sessions).

Cancer:

1. Imagery with suggestion; 1 to 3 (5 to 40 minute) sessions before chemotherapy course.
2. Distraction and relaxation; 1 session before first or each chemotherapy course.
3. Video games; 1 or 2, 10 minute access sessions to video games.

**Participants included in the review**
Children and adolescents (4 to 19 years) with relevant target illness, i.e. asthma, diabetes or cancer.

**Outcomes assessed in the review**
Primary outcomes for each illness were as follows:

1. Asthma; peak expiratory flow rate and forced expiratory volume.

2. Diabetes; urine glucose content and haemoglobin A1c levels.

3. Cancer; nausea and vomiting.

**How were decisions on the relevance of primary studies made?**
The authors do not state how the papers were selected for the review, or how many of the reviewers performed the selection.

**Assessment of study quality**
The authors do not state that they assessed quality.

**Data extraction**
The authors do not state how the data were extracted for the review, or how many of the reviewers performed the data extraction.

**Methods of synthesis**
How were the studies combined?
A narrative synthesis is provided. Studies were grouped according to illness and intervention, e.g. asthma and biofeedback.

How were differences between studies investigated?
A narrative discussion of illness by intervention is provided.

**Results of the review**
Twenty-nine studies were included in the review (n=570): 14 were for asthma (n=383), 6 for diabetes (n=80), and 9 for cancer (n=107). In total, 19 studies used a between-participants design, 7 were within-participants, and 3 were single case studies.

Treatment efficacy was assessed using the Chambless criteria (see Other Publications of Related Interest), which classifies the evidence for the efficacy of an intervention as well-established, probably efficacious, promising, or insufficient evidence to determine efficacy. Two well-established treatments (biofeedback for children with emotionally-triggered asthma and imagery with suggestion for children undergoing chemotherapy), two probably efficacious treatments (relaxation for children with emotionally-triggered asthma and distraction with relaxation for children undergoing chemotherapy), and two promising treatments (family therapy for children with emotionally-triggered asthma and video games for children undergoing chemotherapy) were identified. There was a lack of evidence to evaluate the efficacy of treatments for diabetes-related symptoms.

**Authors’ conclusions**
There are well-established psychological treatments for directly alleviating physical symptoms in children with asthma and in children experiencing chemotherapy side-effects. Additional research evaluating psychological treatments for improving metabolic control among children and adolescents with diabetes is needed before any determination of
efficacy can be made. There is a need to identify characteristics of children who are likely to respond to psychological treatment as an adjunct strategy for symptom management, and to elucidate clearly mechanisms of effect of various interventions.

**CRD commentary**
This was a methodologically-limited systematic review. The review question was adequately defined and there was sufficient detail of individual studies included in the review. Individual studies were synthesised in an appropriate manner, though the better quality evidence was not highlighted explicitly. The search for relevant studies was adequate but not extensive, and appeared to have been restricted to English language papers only. The quality of the included studies was not addressed, and no details relating to the review process were provided, e.g. how many reviewers were involved, whether decisions were made independently, whether reviewers were blinded to source, and how discrepancies were resolved. The authors' conclusions are largely consistent with the evidence presented. However, given the limitations of the review noted previously, both the results and conclusions should be treated with caution.

**Implications of the review for practice and research**
Practice: The authors state that matching treatment approach to child temperament in psychological intervention could result in more effective treatments.

Research: The authors state that there is a need to identify characteristics of children who are likely to respond to psychological treatment as an adjunct strategy for symptom management, and to provide a clearer assessment of the specific mechanisms of effect of each intervention. The authors also state that additional research is needed to evaluate the efficacy of treatments for diabetes-related symptoms.

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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.