Self-management teaching programs and morbidity of pediatric asthma: a meta-analysis

Bernard-Bonnin A C, Stachenko S, Bonin D, Charette C, Rousseau E

Authors' objectives
To assess the impact of self-management teaching programmes on the morbidity of paediatric asthma.

Searching
MEDLINE, Index Medicus, American Journal of Nursing International Index, Dissertation Abstracts Online Database and the bibliographies of retrieved articles were searched. Authors of preliminary or pilot studies were contacted. Only English or French literature published between 1970 and 1991 were searched with the keywords 'asthma', 'education' and 'self-management programs'.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were included.

Specific interventions included in the review
Self-management teaching programmes were included.

Participants included in the review
Children aged 1 to 18 years with asthma were included.

Outcomes assessed in the review
One or more of five morbidity variables: emergency visits, hospitalisation, hospital days, asthma attacks and school absenteeism.

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 authors performed the selection.

Assessment of study quality
The quality of each study was assessed with the clinimetric scale of Chalmers (modified): the selection description, the reject log, the intervention definition, blinding procedures, randomisation blinding, blinding of patients, the prior estimate number, comparability, blinding and compliance. All studies were evaluated by each of the five co-authors. Item scores were discussed in order to reach a consensus.

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

Methods of synthesis
How were the studies combined?
The homogeneous studies were combined to calculate a pooled effect size by the method suggested by Hedges and Olkin. The effect size was defined as the difference in mean outcome scores between a treatment group and a control group divided by the average of the standard deviation (sd).

How were differences between studies investigated?
The chi-squared statistic was used to test homogeneity of effects across the studies.
Results of the review
Eleven RCTs (intervention n=716, control n=574) were included.

The mean score for the quality of the experimental design was 20.9 (sd 8.4) for a total possible score of 39. Randomisation was not blinded in 7 studies and the reject log was either not described or poorly described in 6 studies.

There was no significant heterogeneity of effects across the pooled studies for each of the outcomes.

Overall, pooled effect sizes were quite small: school absenteeism 0.04 (sd 0.08); asthma attacks 0.09 (sd 0.14); hospitalisation 0.06 (sd 0.08); hospital days -0.11 (sd 0.08); emergency visits 0.14 (sd 0.09).

Cost information
No

Authors’ conclusions
This meta-analysis shows that self-management teaching programmes have little influence on morbidity of paediatric asthma, most probably because of multiple confounding factors not directly amenable to change by education. Future programmes should focus more on intermediate outcomes, such as behaviour.

CRD commentary
The quality of individual studies was assessed rigorously. However, details of the individual studies (e.g., interventions, participants) were not clearly presented in the review.

Bibliographic details

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Subject indexing assigned by NLM

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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.