A systematic literature review of the effectiveness of diabetes education of school personnel

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Authors' objectives
To examine the effectiveness of educating school personnel about diabetes in the school setting.

Searching
MEDLINE, ERIC, CINAHL and the Combined Health Information Database were searched for literature published in English between January 1966 and April 2001. The following MeSH terms were used (including all subheadings): 'schools', 'school health services', 'school nursing', 'nursery schools', 'child day care centers', 'special education legislation' and 'review literature'. The reference lists of reviewed articles were examined for additional citations.

Study selection
Study designs of evaluations included in the review
Inclusion was not limited by the study design.

Specific interventions included in the review
Studies that investigated diabetes education were eligible for inclusion. The interventions in the included studies were: researcher-led type 1 diabetes education or participant-led education versus control; parent-led education; poster education or posters and cards with guidelines versus control; and a specific diabetes education programme.

Participants included in the review
Studies of school personnel were eligible for inclusion.

Outcomes assessed in the review
Study inclusion was not limited by the outcome. The following outcomes were reported in the included studies: the percentage correct on a 22-item questionnaire; the change in teacher knowledge about hyperglycaemic symptoms; the percentage of children or adolescents in which diabetic ketoacidosis occurred; and the overall test scores.

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 validity.

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. Data were extracted under the following headings: location, study design, follow-up interval, the number of participants, limitations, demographic characteristics, description of the intervention, and summary effect measures.

Methods of synthesis
How were the studies combined?
Each study was described individually. The findings were used to draw conclusions and recommendations.

How were differences between studies investigated?
Differences between the studies were discussed within the text of the review.
Results of the review

Four studies were identified. Three studies used a pre-test post-test design, while one study used a cohort with comparison group design.

One study demonstrated an improvement in teacher knowledge of treatment, another reported a significant improvement in comprehensive knowledge scores, and a third demonstrated significant knowledge deficits across four measures of teacher knowledge about diabetes. The fourth study demonstrated an increase in the cumulative frequency of diabetic ketoacidosis.

Authors’ conclusions

The literature regarding the effectiveness of diabetes education of school personnel is scant, the methodology is inadequate, the results are mixed, and the focus is on a narrow range of outcomes. Further research is needed to define effective interventions for improving the health and quality of life of school-age children and adolescents with diabetes.

CRD commentary

The authors undertook a comprehensive literature search, but details of the methodological conduct of the review were lacking. There were no details of the study selection, data extraction or quality assessment processes. Details of the studies were well presented in tabular format, and the study findings were discussed appropriately. The authors’ conclusions follow from the data presented.

Implications of the review for practice and research

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

Research: The authors state that several research questions need to be addressed. In particular: (1) Who should deliver these interventions - parents, diabetes educators, or other clinical personnel; (2) What is the most desirable intensity, duration, and frequency of the intervention; and (3) Is group education of personnel or individual education referencing a specific student preferred. The authors state that, in summary, future studies should be rigorously designed and executed, employ comparative study designs and utilise statistical analyses. These studies should focus on the psychosocial and physiological needs of children and adolescents with both type 1 and type 2 diabetes, and aim to prevent short-term and long-term complications from diabetes and improve quality of life.

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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.