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[Intervention Review]

Individual patient education for people with type 2 diabetes mellitus

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ABSTRACT

Background

Type 2 diabetes is a common and costly chronic disease which is associated with significant premature mortality and morbidity. Although patient education is an integral component of diabetes care, there remain uncertainties regarding the effectiveness of different methods and modes of education.

Objectives

To evaluate the effectiveness of individual patient education on metabolic control, diabetes knowledge and psychosocial outcomes.

Search methods

Multiple electronic bibliographic databases were searched, including *The Cochrane Library*, MEDLINE, Premedline, ERIC, Biosis, AMED, Psychinfo, EMBASE, CINAHL, APAIS-health, Australian Medical Index, Web of Science, dissertation abstracts and Biomed Central.

Selection criteria

Randomized controlled and controlled clinical trials which evaluated individual education for adults with type 2 diabetes. The intervention was individual face-to-face patient education while control individuals received usual care, routine treatment or group education. Only studies that assessed outcome measures at least six months from baseline were included.

Data collection and analysis

Information was extracted by two reviewers who summarized both study characteristics and outcome statistics. A meta-analysis using a fixed-effect model was performed if there were adequate studies with a specified outcome of sufficient homogeneity. For outcomes where there were too few studies or the assessment measurements were not standardized or variable, the results were summarised qualitatively.

Main results

Nine studies involving 1359 participants met the inclusion criteria. Six studies compared individual education to usual care and three compared individual education to group education (361 participants). There were no long-term studies and overall the quality of the studies was not high. In the six studies comparing individual face-to-face education to usual care, individual education did not significantly improve glycaemic control (weighted mean difference (WMD) in HbA1c -0.1% (95% confidence interval (CI) -0.3 to 0.1, P = 0.33) over a 12 to 18 month period. However, there did appear to be a significant benefit of individual education on glycaemic control in a subgroup analysis of three studies involving participants with a higher mean baseline HbA1c greater than 8% (WMD -0.3% (95% CI -0.5 to -0.1, P = 0.007). In the two studies comparing individual to group education, there was no significant difference in glycaemic control between individual or group education at 12 to 18 months with a WMD in HbA1c of 0.03% (95% CI -0.02 to 0.1, P = 0.22). There was no significant difference in

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the impact of individual versus usual care or group education on body mass index systolic or diastolic blood pressure. There were too few studies to perform a meta-analysis on the effect of individual education on dietary self management, diabetes knowledge, psychosocial outcomes and smoking habits. No data were available on the other main outcome measures of diabetes complications or health service utilization and cost analysis in these studies.

Authors' conclusions

This systematic review suggests a benefit of individual education on glycaemic control when compared with usual care in a subgroup of those with a baseline HbA1c greater than 8%. However, overall there did not appear to be a significant difference between individual education and usual care. In the small number of studies comparing group and individual education, there was an equal impact on HbA1c at 12 to 18 months. Additional studies are needed to delineate these findings further.

PLAIN LANGUAGE SUMMARY

Individual patient education for people with type 2 diabetes mellitus

Nine studies involving 1359 participants met the inclusion criteria. Six studies compared individual education to usual care and three compared individual education to group education (361 participants). There were no long-term studies and overall the quality of the studies was not high. Individual face-to-face patient education for type 2 diabetes over a six to twelve month period did not significantly improve glycaemic control, body mass index (BMI - measure of overweight; body weight in kilogram divided through squared height in meters, kg/m²), blood pressure or total cholesterol in the short or medium term compared with usual care. However, there did appear to be a significant benefit of individual education on glycaemic control in a subgroup analysis of studies involving participants with a higher baseline HbA1c greater than 8% (that is, too high blood sugar levels over a couple of months or inadequate 'metabolic control'). In the studies comparing individual education to group education, there was no significant difference between individual or group education at 12 to 18 months nor a significant difference in the impact of individual education versus group education on BMI, systolic or diastolic blood pressure.

An exact analysis on dietary self management, diabetes knowledge, psychosocial outcomes and smoking habits could not be performed because there were limited studies and varied measurement tools. However, descriptive evaluation suggested that there was no significant difference in quality of life, self management skills or knowledge between group and individual education. When comparing individual patient education to usual care, the limited number of studies available suggested a positive outcome on self management, smoking and knowledge, however there was conflicting evidence surrounding psychosocial outcomes. No data were available on the other main outcome measures of diabetes complications or health service utilization and cost analysis in these studies.