

Review: Self-management training in type 2 diabetes mellitus is effective in the short term

Norris SL, Engelgau MM, Venkat Narayan KM. Effectiveness of self-management training in type 2 diabetes. A systematic review of randomized controlled trials. *Diabetes Care*. 2001 Mar;24:561-87.

QUESTION

What is the effectiveness of diabetes self-management education (DSME) in patients with type 2 diabetes mellitus?

DATA SOURCES

Studies were identified by searching MEDLINE, Educational Resources Information Center (ERIC), and CINAHL (from 1982) with the terms health education and diabetes mellitus and by hand searching 5 diabetes journals.

STUDY SELECTION

English-language studies published between 1980 and 1999 were selected if they were randomized controlled trials of the effectiveness of DSME in patients > 18 years of age with type 2 diabetes. Studies with multifactorial interventions were included only if the educational component was reported separately.

DATA EXTRACTION

Data were extracted on study design, methodologic quality, patient characteristics,

interventions (classified on the basis of the educational focus areas of knowledge or information [didactic or collaborative], lifestyle behaviors, mechanical skills, and coping skills), and outcomes (classified as knowledge, attitudes, and self-care skills; lifestyle behaviors, psychological outcomes, and quality of life; glycemic control; cardiovascular disease risk factors; and economic measures and health-services use).

MAIN RESULTS

72 studies reported in 84 papers were identified. Studies varied in patient characteristics, educational interventions, outcomes, study design, and methodologic quality. Studies showed short-term (< 6 mo) positive effects of DSME on diabetes knowledge, frequency and accuracy of self-monitoring of blood glucose levels, self-reported dietary habits (e.g., improved dietary carbohydrate intake, reduced fat and caloric intake, and increased consumption of lower glycemic-index foods), and glycemic control. The effectiveness of DSME on psychological outcomes, quality of life, lipid profiles, physical activity, weight,

and blood pressure varied across studies. Interventions involving active patient participation were generally more effective than didactic interventions for improving glycemic control, weight, and lipid profiles. Studies did not show an effect of DSME on cardiovascular disease events or mortality. No cost-benefit studies were identified, and studies of economic outcomes and health-services use did not show improvement.

CONCLUSION

Studies show that self-management education in patients with type 2 diabetes mellitus, especially interventions involving active participation, have short-term effectiveness for improving diabetes knowledge, self-monitoring of blood glucose levels, self-reported dietary habits, and glycemic control.

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COMMENTARY

In this well-done, well-reported systematic review, Norris and colleagues found evidence of limited and variable efficacy of DSME in achieving the goals of diabetes care. The review provides useful insights for those delivering diabetes care and possible explanations for the apparent inefficacy of DSME. DSME is a broad term that includes both effective interventions (collaborative educational sessions reiterated over time) and ineffective interventions (single didactic sessions). Furthermore, DSME alone may have benefits that are too difficult or too small to measure. Indeed, educational interventions may not affect patients' metabolic control or cardiovascular risk but may yield improvements in their ability to cope, satisfaction with self-care, and quality of life. Unfortunately, few studies have assessed these outcomes, and valid tools for this purpose are lacking.

DSME may only be efficacious as part of an intensive and multifaceted strategy (1). For instance, patient education has been a component of moderately effective interventions to improve adherence to medication regimens (2). DSME may improve patient outcomes by enhancing adherence to evidence-based interventions.

For many diabetes caregivers, DSME has involved dictating to patients how to live, take medications, and record blood glucose levels and has required routine testing of patients' hemoglobin A_{1c} levels. Caregivers often become frustrated when patients fail to "comply" with recommendations. Current trends support patients taking a central role in their own care. The health care team provides emotional and technical support and collaborates with the patient on achieving patient-determined goals. Validation of this approach awaits further study.

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References

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