

DIABETES

Efficacy of behavioral interventions in patients with poorly controlled diabetes mellitus

Health-care interventions aimed at improving self-management-related behaviors can help patients with poorly controlled diabetes mellitus achieve glycemic targets, show findings of two novel studies published in the *Archives of Internal Medicine*; however, caution must be exercised not to miss socially and economically disadvantaged patients, reveals a third study in the same journal.

A growing body of literature has shown that disease management programs, often led by nurses or certified diabetes educators, are successful in improving glycemia, particularly when a behavioral intervention is incorporated. However, little is known about the specific behavioral components and/or education strategies that are necessary to support lifestyle changes and overcome barriers to effective self-management.

“To reach large numbers of diabetes patients, effective behavioral and psychological approaches to breaking down self-care barriers must: address specific individualized patient barriers; be solidly grounded in the behavioral literature; be temporally and substantively linked to diabetes self-care education; build on educators’ background, clinical skills and expertise; and fit health-care providers’ clinical practice models,” argues Katie Weinger, from the Joslin Diabetes Center, lead investigator of one study.

Weinger and colleagues randomly allocated 222 adults with diabetes mellitus (type 1 diabetes mellitus 49%; HbA_{1c} ≥7.5%) to either five sessions of an educator-led, highly structured, behavioral and educational group intervention over 6 weeks (structured behavioral arm) or to one of two control interventions: five sessions of a curriculum-based, standard group education program over 6 weeks (group control) or unlimited one-to-one education with nurse or dietitian educators for 6 months (individual control). Participants allocated to group control were matched to the structured

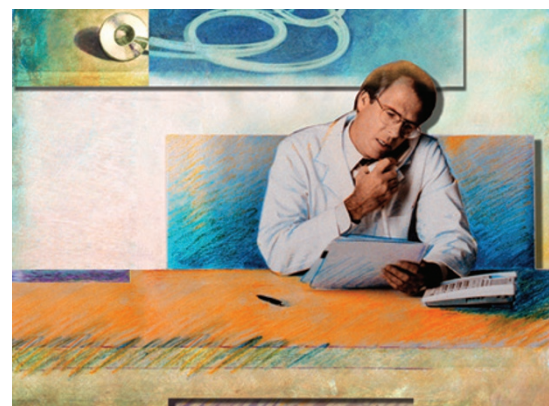
behavioral group with respect to exposure to health professionals and diabetes education content.

“We were interested in studying whether the structured behavioral approach would be more effective than two other successful education approaches for those who are struggling to achieve glycemic targets,” explains Weinger. “Few studies include head-to-head comparisons of interventions to determine their relative effectiveness in specific populations.”

Patients receiving the structured behavioral intervention showed the greatest improvements in glycemia over 1 year. Nevertheless, glycemic control improved in all three arms, which indicates that diabetes education in general is an important adjunct to medical therapy. Furthermore, Weinger *et al.* demonstrated that modified psychological and behavioral strategies designed to support diabetes self-care can successfully be incorporated into clinical practice.

By contrast, when Sperl-Hillen *et al.* compared group education, individual education and usual care (that is, no assigned education) in 623 US adults with type 2 diabetes mellitus and HbA_{1c} levels ≥7%, the researchers found individual education and counseling sessions by certified diabetes educators to be more effective than group education.

In a third study, Frosch *et al.* evaluated 201 patients with type 2 diabetes mellitus and poor glycemic control (HbA_{1c} levels ≥8%) from the most socially and economically disadvantaged backgrounds, as this population exhibits the greatest disparities between treatment and outcomes. Patients were randomly allocated to either viewing an educational video and receiving five sessions of telephone coaching by a trained nurse (experimental group) or to reading a 20-page brochure (control group). The investigators found no significant difference between the two interventions, as both approaches reduced HbA_{1c} levels by 0.5% at 6 months.



Notable differences in the study populations may underlie the diverging findings of these three studies. For example, Weinger *et al.* included patients with type 1 diabetes mellitus; however, those with type 2 improved more. Frosch *et al.* and Speri-Hillen *et al.* focused exclusively on patients with type 2 diabetes mellitus. Moreover, the interventions varied substantially in the duration of each educational program: the telephone coaching lasted a maximum of 2.5 h; the individual education program tested by Speri-Hillen and co-workers took 3.0 h; and the structured behavioral intervention of Weinger *et al.* was 10.0 h long in total.

Nevertheless, the studies show that a diabetes self-management support intervention is an important component of treatment for participants who have not achieved therapeutic targets.

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Original articles Weinger, K. *et al.* The effect of a structured behavioral intervention on poorly controlled diabetes: a randomized controlled trial. *Arch. Intern. Med.* doi:10.1001/archinternmed.2011.502 | Sperl-Hillen, J. *et al.* Comparative effectiveness of patient education methods for type 2 diabetes: a randomized controlled trial. *Arch. Intern. Med.* doi:10.1001/archinternmed.2011.507 | Frosch, D. L. *et al.* Evaluation of a behavior support intervention for patients with poorly controlled diabetes. *Arch. Intern. Med.* doi:10.1001/archinternmed.2011.497