

## EDUCATION IS MORE THAN INFORMATION

As a certified diabetes educator, I feel compelled to comment on the article about diabetic patient education by Bloomgarden et al. (1).

I am concerned that this and similar studies that appear to show that educational interventions are ineffective have a common methodologic defect. Although they appear to be measuring the same defined entity, i.e., diabetes education, they have not examined that entity at all. What they do frequently measure is the impact of some isolated means of information giving—an action that is one small part of a professional educational intervention.

Acceptable research methodology demands that investigators who purport to study education define that entity and their methods no less rigorously than they would define laboratory assessments or other variables. Any qualified educator knew long before this study was published that increased knowledge is not necessarily correlated with patient behavior change—the required measure of effectiveness in all types of patient education. If knowledge alone were able to significantly impact behavior, physicians would never smoke and dietitians would never be fat, neither of which is true.

There are remarkably few professional diabetes educators, i.e., individuals who combine educational expertise with the requisite array of clinical knowledge needed to effectively assist the individual with diabetes, and remarkably few educational programs that have been designed along accepted guidelines for educational process.

Purporting to measure the effectiveness of education as practiced by medical professionals who lack specific educational skills and training is akin to evaluating the effectiveness of brain surgery as practiced by a pediatrician. Although the person's intentions might be the best, his/her technique and problem-solving capabilities, once involved in the task, would not be up to the challenge.

Education as a therapeutic intervention has been shown repeatedly to be effective when practiced professionally. I eagerly await the day when standards for the educational process in diabetes are available. Only when such standards can be applied in combination with available quality-assurance tools, e.g., program recognition and certification of educators, will the diabetes community be confident that this important therapeutic tool is being appropriately applied and fairly evaluated.

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## REFERENCE

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## INDIVIDUALIZED DIABETES EDUCATION AS THERAPEUTIC TOOL IS NOT ELUCIDATED

Diabetes education is a tool required for the implementation of an individualized treatment plan. Sometimes it is mistakenly identified as a therapeutic goal per se. Sometimes it is offered overzealously as a required course that diabetic individuals need to master and be quizzed on. Sometimes a series of lectures on diabetes spread over time is labeled as education intervention and is hypothesized to improve metabolic status of patients. When such a hypothesis is disproven, all formats of diabetes education are erroneously deemed ineffective.

We read the recent study by Bloomgarden et al. (1) with interest. Several questions and comments are warranted. The authors note that all patients (both in the intervention and control groups) experienced a “change in the clinic protocol with full examinations and special follow-up forms” and that this may have caused some improvement in metabolic control in both groups. Unfortunately, the authors are unable to quantitate the effect of these changes on metabolic control. Thus, the study actually compares a controlled intervention (education) administered during a time of a second uncontrolled intervention (change in clinic procedures). To the extent that the latter may have led to better metabolic control, it would effectively make an improvement due to education more difficult to detect statistically. The authors also note that patients in the education groups attended  $5.7 \pm 2.7$  clinic visits, whereas those in the control groups attended  $5.2 \pm 2.7$  clinic visits. Was this difference between groups statistically significant?

Bloomgarden et al. hypothesized that “systematic education intervention would produce demonstrable improvements in outcome.” This systematic education process involved a maximum of nine sessions within a program that lasted  $1.6 \pm 0.3$  yr. The article concluded that this format or program was an “ineffective education intervention.” However, the authors proceeded to say that their “program was not designed as a therapeutic intervention aimed at improving metabolic control per se with self-monitoring of blood glucose, algorithms for insulin dose adjustment, and increased frequency of clinic visits and telephone contacts.” The program should then not have been evaluated for its impact on metabolic control per se. Was it expected that providing “an extensive overview of various aspects of the illness” would improve metabolic status? It is important to define patient education as a tool and not a goal. Having a diabetic person graduate from a series of lectures with increased knowledge about diabetes is not the ultimate

goal. The goal is good physical and mental health, which is likely to be fulfilled by teamwork, achieving reasonably tight glycemic control and total support.

We strongly agree with the authors' belief that "there is a need for new and innovative approaches to patient motivation in achieving healthful behaviors." We propose a format in which a weekly outpatient 4-day program is provided by a team of diabetologist, educator, dietitian, psychiatric nurse, and podiatrist (2). The program offers minimal didactic lectures and maximal individualized education plus diabetes monitoring, control, and treatment adjustments (2). The effect of this program on long-term metabolic control ( $HbA_{1c}$ ), cost of care, frequency of acute complications, and quality of life is under study.

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2. Abourizk NN, Reardon GE, Schnatz JD: Establishing and operating a third party-reimbursed outpatient diabetes care center. *Diabetes Educ.* In press

#### WHAT IS EDUCATION?

In response to the article about diabetic patient education by Bloomgarden et al. (1), I would like to make several observations. First, what is education? It is well known that the simple acquisition of information, if not applicable to the person's individual situation, will not cause a behavioral change. Most educators, including myself, would not consider the patient educated unless he/she would be able to apply the learning to his/her life-style and change behavior. In other words, even a perfect score on a posttest does not equal education. I therefore contest that the primary premise of this study, which assumes that a rise in score equals education, is false.

Second, I see no evidence that the patients were instructed in insulin dosage adjustment. I suggest that an intricate part of any appropriate diabetes education program that hopes to impact on metabolic status must include the ability to test blood sugars and respond to them by adjusting insulin dose.

Third, included in any educational program is the capacity of the person to learn and his/her previous experience with education. I would suggest that perhaps a population entirely of Blacks and Hispanics from a metropolitan area may not give a clear view of educational response in all people.

I believe that the standards that have recently been established by the American Diabetes Association are designed to avoid the pitfalls that it appears this group has fallen into, i.e., assuming that improvement on a test score equals education. True education equals behavioral change.

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#### DIABETIC PATIENT INFORMATION

We applaud the appearance of research related to the efficacy of diabetes patient education in *Diabetes Care*. We feel this is a demonstration of the American Diabetes Association's commitment to the furtherance of this timely dialogue, and we hope others will be encouraged to document potential benefits of patient education as a relevant factor affecting the patient's well-being and medical-cost savings.

However, we take exception to the article on diabetic patient education by Bloomgarden et al. (1). The premise for the study was based on an alleged "lack of scientific process" in previous efficacy studies that have been cited by proponents of implementation of national standards and third-party reimbursement. We suggest that this study also falls short of meeting those rigid scientific criteria. Our principle concerns are twofold: 1) drawing 1987 conclusions regarding efficacy based on 1980-1982 data and 2) failure to use the most timely accepted educational process. We are also concerned that the prominent position of this particular research study as a lead "Original Article" may add an additional bias regarding its perceived reliability and appropriateness. Indeed, its prominence in *Diabetes Care* will provide much ammunition to the insurance carriers who have historically opposed reimbursement for patient education and have used any piece of research that acknowledges the correctness of their position in this historical dialogue.