

In Brief

Groups offer a forum for people with diabetes to gather and learn together. Group attendees and educators have an opportunity to use creative approaches to learning. This article defines groups, discusses related constructs, reviews effectiveness research and some of its unanswered questions, describes implementation challenges, and offers skill-building suggestions to educators who use groups as a part of an educational practice.

Group Education in Diabetes: Effectiveness and Implementation

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Since the 1970s, teaching people in groups has been seen as an effective intervention for diabetes education. Traditional group diabetes education was a 5-day inpatient course—a scheduled event in which a nurse and dietitian co-taught patients with diabetes the information and skills needed at home. The focus was on teaching skills and imparting knowledge to newly diagnosed people with diabetes. Sometimes, superficial coping information was also delivered. Patients had preset notions of “going to class” for lectures. One patient remarked that this meant having to “attend class and take notes . . . with a lot of people (like a mob scene!),” and the “teacher” is described as “an older lady . . . making me do stuff . . . I don’t like to do!”

Fortunately, the process of education has evolved over time. Patient education is now a well accepted and essential part of practice for all health professionals,¹ it is a cornerstone of diabetes self-management,² and it is central to achieving improved outcomes of care. Redman¹ refers to education as “practice and movement,” i.e., the practice of education is based on a set of theories, research findings, skills learned and practiced, and movement, whereby the education of patients and teachers is constantly evolving. Some health educators consider diabetes education, in its current

state as demonstrated in the Diabetes Control and Complications Trial,³ to be the most fully developed patient education program in any health field.¹

Calabretta⁴ described a shift in provider roles from the traditional medical model to more patient-centered education goals and clinical management. This shift is particularly evident in diabetes education, in which the person with diabetes, rather than the health care team, provides the majority of diabetes care. The teacher is now a team of teachers: medical and lay professionals who facilitate or lead a learning process. Patients are referred to as “people with diabetes,” “learners,” or “students.” The learning process also includes others affected by diabetes, such as family members, friends, and others in the social support network. Classes are styled as “sessions,” “groups,” or “gatherings.”

A group can be defined as a gathering or an assembly of people with a common interest, such as diabetes self-management. The number of attendees varies from 2 to 20;^{5,6} some lecture-style classes may have even more. Group size depends on the payor, the topic, the delivery method, and instructor preference. Previously, we often grouped patients together to quickly impart information with a lecture; today we assemble and awaken learners to information and empower

them with opportunities to make informed choices.

Why Group Education?

Group education is currently receiving a great deal of attention among educators, policy-makers, and payors. Some educators prefer groups whenever possible and recommend using groups as a first-line approach to improve diabetes outcomes.^{5,7} Group education is a cost-effective alternative to individual education.^{6,8,9} Fiscal intermediaries and reimbursement constraints are important factors influencing the format of diabetes education in today's practice. The federal Balanced Budget Act of 1997 resulted in changes in reimbursement by the Centers for Medicaid and Medicare Services (CMS, formerly the Health Care Financing Administration) that supported group delivery of diabetes education.¹⁰ Other payors, following suit, may encourage the delivery of diabetes education in group settings, viewing it as potentially cost-saving and efficient.^{8,9} Thus, many diabetes self-management education and medical nutrition therapy programs now consider delivering diabetes education in groups.

The Effectiveness of Group Education

Several reviews and meta-analyses provide valuable information on the effectiveness of diabetes self-management education.¹¹⁻¹⁵ The effectiveness of the group education format specifically, however, is more difficult to address.

A number of issues arise when reviewing the literature on the relative effectiveness of group interventions compared to individual interventions. Wilson¹⁶ noted that it is difficult to distinguish whether outcomes come from an educational approach based on a specific theory or from an intervention applied to a particular setting and population, making it difficult to draw conclusions about group effectiveness. In addition, very few studies in the literature directly compare group versus individual formats for delivering a specific intervention. Typically, studies compare group or individual programs with usual care, shedding no light on their relative effectiveness.

Studies often examine different outcomes, because researchers may believe that different outcomes are important with different delivery formats. For example, researchers may focus on patient-centered values for individual

programs and on health care system outcomes, such as cost or utilization, when examining group programs, thus making comparisons difficult. In addition, researchers may try to answer different questions using different educational formats and not specifically to examine the relative merits of individual versus group education.

A distinction must be made between program delivery format and the intervention's degree of individualization. Education delivered in a group format can vary in the degree to which individual needs are incorporated. A group educational session could involve tools for an individual needs assessment followed by the development of an individualized program. On the other hand, an intervention delivered to an individual may be a series of standard lectures that offer little opportunity for individual attention. The degree of individual participation in groups and opportunities to develop collaborative relationships among group members also vary among interventions. Group-based interventions typically involve group interactions and processes, and these concepts may be incorporated in video form into an individual educational session. However, some group interventions may involve minimal group process, e.g., a didactic lecture with no patient participation. Thus, in sorting out whether a group or individual presentation of educational material is preferred in specific circumstances, consideration of the closely related constructs of individualization and group process is necessary.

Applying the results of a particular study to other interventions, populations, and settings can be difficult. Until we know more about which factors relate to improved outcomes, the applicability of specific studies will be uncertain. Because there is a paucity of literature on the relative effectiveness of group versus individual education, little information is available to guide us at the present time. In addition, the existing literature often does not adequately describe interventions that are being evaluated,¹² so that one cannot determine which intervention characteristics may have contributed to outcomes.

Given these issues and limitations, what can we learn from the literature on group education? Some studies^{6,11,12,17-20} explicitly compare group and individual educational interventions to determine which delivery for-

mat is preferred. Other studies that examine group interventions and compare them to usual care also provide useful information.^{8,9,20-29}

Studies Comparing Group and Individual Education

Several reviews of educational interventions compare the effectiveness of group and individual education. Mullen et al.¹⁷ performed a meta-analysis of educational programs for people with chronic conditions whose care included pharmacotherapy. Educational techniques were examined, including one-to-one counseling, group education, written and other audiovisual materials, patient package inserts, counseling or group education plus materials, and behavior modification. They found that, for patient knowledge about their medications, significant improvements were noted for one-to-one counseling, group education, and written and other audiovisual materials. Patients' ratings of educational quality were the strongest predictor of knowledge regardless of whether an individual or group format was used. For drug utilization errors, effect sizes did not relate to educational strategy.

Norris et al.¹² compared group and individual education in a narrative fashion, concluding that the literature in diabetes education is divided, although effects may be more positive for group delivery of lifestyle programs (interventions focusing on diet and physical activity) than for individual programs. Teaching self-care skills was effective in both group and individual settings. In a recent meta-analysis of the effectiveness of diabetes educational interventions, group versus individual delivery was not found to be a statistically significant predictor of glycemic control.¹¹

Several studies compare group and individual educational interventions.^{6,18-20,30} In a population of adults with asthma, Wilson et al.¹⁸ compared group education, individually administered education, self-study, and usual care for asthma patients. They found that individual and group education were superior to the other methods and that the group program was associated with a significant improvement in patients' level of activity and in asthma status as rated by the physician.

A randomized, controlled trial recently compared the effectiveness of delivering diabetes education in a

group versus an individual setting.⁶ Glycemic control improved in both groups, with a slightly more marked reduction in the group setting (between-group difference in hemoglobin A_{1c} of 0.8%, $P = 0.05$). Both group and individual interventions also showed improvements in body weight, psychosocial adjustment, attitude towards diabetes, and mental health, thus supporting the conclusion that group sessions are just as effective as individual sessions in educating adults with diabetes. The authors noted, however, that the applicability of this study is somewhat limited by its high attrition rate (50% of participants in the group setting and 59% of those in the individual setting completed the program). The follow-up interval was only 6 months and, although the study was a randomized trial, subjects were randomized by allocating consecutive patients in blocks. Allocation was thus not adequately concealed, which may have introduced bias into the results.³¹

Comparison of a group insulin starter program to an individual intervention revealed a greater level of treatment satisfaction in the group intervention, with similar glycemic control at the 1-year follow-up.³⁰ Cohen¹⁹ compared a group education program to individual education in a population of overweight people with hypertension. The comparison group was self-selected, but the groups were comparable on common demographic variables. Both groups improved in general knowledge. However, the intervention group improved to a greater degree. Neither group had significant changes in blood pressure or weight. Campbell et al.²⁰ compared a minimal group program, an individual program, a more extensive group program, and an individualized behavioral program in diabetes education, finding reductions in hemoglobin A₁ and body mass index with no significant difference between groups. Thus, evidence suggests that group and individual education may be equally effective in helping those with diabetes manage their self-care.

Studies Examining Group Programs

Diabetes educators can learn from reviews of the efficacy and effectiveness of group education performed in several clinical areas. Plante et al.⁸ reviewed the efficacy of group interventions for pediatric conditions. They classified group interventions by

primary goals and intended outcomes: emotional support, psychoeducation, adaptation/skill development, or symptom reduction. They also noted that summer camps are a form of group education. Randomized comparisons between group and other education formats were rarely reported, and often outcomes were not commensurate with the stated objectives of the intervention. Little information on cost-effectiveness existed, although cost-effectiveness was frequently used as a justification for group education in the studies reviewed. These authors noted that much work needs to be done to establish the efficacy of group treatments.⁸

Taal et al.²¹ reviewed the effectiveness of group education programs for patients with rheumatoid arthritis. These programs increased the knowledge and physical health status of participants but seldom led to improved psychosocial health status. The authors felt that further work is needed to examine the mechanisms that make educational interventions effective and to determine what specific interventions or combinations are most effective. The authors found that long-term effects are usually not maintained and that further research is needed to develop strategies for long-term health improvement.

A large number of studies have examined the effectiveness of group programs, usually comparing them to usual care^{9,20,22-29} rather than to individual presentation of educational materials. The Take PRIDE study³² examined the impact of self-management education on the functional health status of older individuals with heart disease. The intervention, a group-format program of meetings for older adults with heart disease, focused on problem solving and self-management. The group shared ideas and experiences, rehearsed communication skills needed in their daily lives, and provided social support. At the 12-month follow-up, group program participants experienced less impact of illness on their psychosocial capacity than did the control group. The authors postulated that the intervention increased participants' feelings of self-efficacy and an increased feeling of control over issues related to their heart disease.

Lorig et al.³³ have published extensively in the field of arthritis self-management education. These programs generally involve the teaching of

groups, often in community settings, by either trained lay leaders or health care providers. Education focuses on improving the function and quality of life. Programs typically led to improvements at 1-year follow-up in health behaviors (exercise, cognitive symptom management) and health status (fatigue, shortness of breath, pain, depression)³³ and long-term (4-year follow-up) improvements in self-efficacy, pain, and health care utilization.³⁴ Lorig and her group have also explored more innovative group formats, such as e-mail discussion groups.³⁵ One year of participation in e-mail groups produced improvements in health status (pain, role function, and health distress) and a trend toward decreased physician visits.³⁵

How to Facilitate Group Education in Your Setting

The provision of self-management education is challenging and constantly changing for students and educational leaders. Both the educator and attendee are learners, each adjusting to new technology, new approaches, new settings, and new fiscal constraints. Just as people with diabetes are learning about diabetes, educators are striving to learn how to better deliver educational concepts and skills. Franz et al.⁵ commented that we are indebted to our colleagues and the many patients who have been our best teachers.

The National Standards for Diabetes Self-Management Education² have led the way towards providing quality education. These standards encourage more creative educational options that can be implemented in diverse settings and will improve health care outcomes. The National Standards define 10 content areas: diabetes disease process, nutritional management, physical activity, medications, monitoring, acute complications, risk reduction, goal setting, psychosocial adjustment, and preconception care/pregnancy.² New educators may find that adapting an existing commercial curriculum to meet these standards is easier than developing their own.^{36,37} More experienced educators may develop their own curriculum, focusing on unique ways to deliver their information, adding creative alternatives, and encouraging more interaction in encounters with learners.

When converting information from an individual to a group format, first

read about group process and consider the issues enumerated in the section on preparation below. Begin the group experience with comfortable topics, perhaps by expanding one-to-one sessions into small groups of two to four people, increasing the number of participants and topics in a step-wise fashion. This expansion requires attention to the differences between group and individual sessions. Involving other team members with different educational backgrounds and skills brings new perspectives to the group, offers a variety of personalities and experiences, and lessens the burden of sole responsibility for the group.

One of the most compelling influences driving programs to provide groups is time—time for people (patients, their families, and others) to attend educational offerings and time for team members to develop and provide appropriate programs. The decision to use a group format may be driven by time constraints and economic efficiency, yet the key issue is whether educators have the skills and strategies they need to deliver effective programs.³⁸

Instructor Skills—Opportunities of a Group Setting

The process of teaching requires educators to learn and renew teaching skills as well as to plan and prepare in advance the topics and content to be covered. Instructors, especially new group educators, must use multiple resources and build strategies and alternatives that evolve over time. Experience, repetition, and an open-minded approach enable educators to change the concept of a group from a forced function to an educational delivery opportunity. As skills and experience increase, comfort levels rise. Educators using this approach do not just teach; they develop strategies to assist people in overcoming obstacles. This involves problem solving and using counseling skills effectively and efficiently.³⁹ Continuing education courses and experience can help educators use teaching strategies and counseling skills effectively. The biggest challenge for educators is to communicate information and engage people in the learning process so learners can successfully implement changes to manage their own disease.⁴⁰

Successful group teaching involves several skill sets. The first skill is preparation. Constructive interactions

must be appropriately planned and facilitated; they depend on characteristics of the participants as well as the educator's style.¹⁶ Teaching materials must be available to support the curriculum and reflect the fact that diabetes self-management involves a complex regimen and often necessitates lifestyle changes on the part of learners and their families. Teaching materials can include videos, booklets, and self-paced computer programs.

Preparation includes careful consideration of the teaching environment; educators often must teach in space not initially designed for education. Presentations that impart basic "need to know" information may be scheduled in a more formal, typical classroom, in which chairs are suited to note-taking. Lecture-style classrooms should be avoided when course content focuses on personal storytelling or intimate details of family life or when behavior changes are being discussed. These topics may be better suited to round tables, overstuffed couches, or chairs in a circle.

Audiovisuals such as slides, electronic presentations, overhead transparencies, or videos are good alternatives available to instructors and may ensure completeness of content. However, such visuals require light adjustment in the room and low noise levels for listening, particularly for those who have visual or hearing impairments. In electronic presentations, fancy, rapid visual techniques may work well for younger, technologically savvy learners, but not so well for slower-learning adults. Instructors need to be comfortable with a variety of multimedia and traditional delivery methods.

A second skill set is the development of delivery options created to enhance subject content. Such options include role-play, role modeling by the instructor or others in the group, demonstration, discussion, or visits to real-world settings, such as grocery stores. Age-specific games, art therapy, and humor are playful options that can be tailored to specific audiences.^{1,41} Educators who lack skills or the desire to enhance their current practice or skills are encouraged to seek guidance from and observe other team members and colleagues. Group educational events can be videotaped, audited, monitored, and reviewed by instructional teams for effectiveness and appropriateness. The positive effects and improvements needed can

be discussed and practiced at the next group event. Participant feedback alerts educators to the real world as experienced by group attendees.

A third skill set necessary for group teaching is assessment of learners. Assessment and its documentation are fundamental to educational planning. This process recognizes people as individuals and provides the foundation for individualizing educational plans to maximize learning.^{2,5,40,42} Educators must be flexible and well versed in planning for individualization and uniqueness. They must acknowledge the dignity and autonomy of each individual.⁴² For some educators, this comes naturally; others must build experience and confidence by practicing different approaches, receiving feedback, and reflecting on outcomes.

Educators must be skilled in using techniques and educational theories, including motivational interviewing and empowerment techniques.^{5,43,44} They must also be able to assess participants' readiness to learn, stages of change, and learning style. Tailoring interventions and instructional methods to personal needs, instructor skill levels, and support systems and matching instructional methods to readiness to learn is more effective than using a one-size-fits-all approach.^{16,45-47}

Shintzky and Kub⁴⁸ noted that most education and counseling is targeted to preparation and action stages. Knowing this, educators are encouraged to offer group activities and content that fit the stage of the group's learning readiness. For example, educators can offer choices of behaviors to consider changing and practice sessions to familiarize learners with new content (such as serving sizes for carbohydrate counting, meal selection at a local restaurant, and label reading).

The key to all education is the establishment of rapport and development of a relationship with learners to support them in taking responsibility for change or to reinforce changes already begun. Teaching knowledge for its own sake is inconsistent with the fundamental goal of diabetes self-management education.⁴⁹ Instructors' sincerity, interest, passion for the topic, charisma, and belief that they can affect and improve the lives of those affected by diabetes may make the difference between teaching and educating. Educators' responsibility is to develop skills to facilitate learning and to appreciate the difference

between teaching, learning, the processes known as education, and instruction (Table 1).

Groups offer a forum in which educators advance their skills by developing multiple instructional strategies and creative methods to deliver them. Table 2 offers tips on the preparation and delivery of group instruction. In addition, groups offer instructors an opportunity to become learning facilitators by fine-tuning existing teaching skills and instructional techniques. This increases the comfort level with the group format, provides a forum in which to test alternative teaching techniques and delivery methods, and defines personal teaching styles and preferences. Table 3 offers references on skill building and communication for educators.

A fourth skill set involves using appropriate and timely documentation. Written records capture the essence of curriculum content and document learner appreciation, acceptance, and level of understanding of information, skills, and coping mechanisms. Documentation includes the plan for behavior changes and lifestyle choices and what learners expect to accomplish. Thus, records are the cornerstone for reevaluation of progress and communication among the treatment team. Staff can review records in follow-up for appropriateness and achievement and make changes in plans and goals.

Checklists, preprinted documents, and forms help educators capture this information for later reference, evaluation, and assessment.^{1,5} Some may think that groups limit the amount of time available for obtaining stories and histories from each individual. Forms completed before a session, however, establish baseline information, assess current status, and empower people to make their needs known. Forms help maintain privacy and provide essential planning and individual information needed for a group's success. In addition, as Redman¹ stated, documentation is vital to establishing interventions and results, corroborating judgments made for delivery options, and setting behavioral goals and serves as a legal document.

Conclusions

As diabetes educators and health care professionals, we focus much effort on defining what is best for our patients. However, it is difficult to define what

Table 1. Definitions

Teaching:	a system of actions to bring about learning
Learning:	an active, goal-directed process, transforming knowledge skills and values into new behavior
Education:	a combination of learning experiences ⁴⁰
Instruction:	the deliberate arrangement of conditions to promote attainment of some intentional goal ¹

is best with respect to the format of education.¹⁶ Is it based on theoretical grounds or demonstrated effectiveness in practice? If the latter, there are so many facets to group education that we need to make our questions much more specific. Which facets of group education lead to improved outcomes? Which characteristics of patients, settings, and educators lead to positive outcomes? Which characteristics of diseases and behaviors are most conducive to group treatment? How homogeneous must a group have to be to be effective?

There is a paucity of quality literature to guide us on the relative effectiveness of individual versus group education. More evaluation research must be done to answer these and other important questions. Distinctions must be made among the format of educational program delivery, instructional interventions, and the degree of individualization of the program. The

degree of interaction and group process needs assessment and description. Studies need to provide better descriptions of populations, interventions, and settings in order to support reasonable conclusions about generalizability.

Group education is an important part of our armamentarium for maintaining and improving the health and well-being of people with diabetes. Educators and learners involved in group education have unique opportunities to learn, offer new perspectives, try out alternative strategies, share creativity, and work together to evolve optimal learning strategies.

Because conclusive studies have not been conducted, no one strategy is best; each has advantages and disadvantages, and each is more suited than others to specific kinds of learning.¹ In the future, further evidence may become available to guide educators in choosing strategies that are most

Continued on p. 102

Table 2. Instructional Tips

Terminology	
<i>New</i>	<i>Old</i>
Sessions	Groups or classes
Facilitator	Teacher or instructor
Member, learner, participant	Patient, client
Guest, supporter, coach	Family or significant others
Participation invitation	Tell, ask, invite
Promotionals and Preparation: Consider Using the Following:	
<ul style="list-style-type: none"> • Comfort descriptors in marketing flyers: "casual dress," "bring a snack," "invite a friend" • Volunteer greeters at opening sessions • Alternative to paper assessment tools: e-mails, faxes, pre-group tutorials, self-learning packet 	
Tools	
<ul style="list-style-type: none"> • Use of several interactive alternatives or gadgets to demonstrate a point • Quick phrases and humor: "Is that your final answer," offer a "lifeline" to solve a question • Use of money-like "carbohydrate chips" for participants to use to buy snacks during meetings • Librarians, American Diabetes Association members, and past learners as community resources, in a panel • Books, literature, storytelling, or music to demonstrate a point, an emotion, or a technique • Drawing a nametag/picture, describing one's self: for example, as a musical note, clown face, emoticon • Three interactive delivery options to clarify one educational topic or concept (audio, visual, kinesthetic approaches) 	

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Continued from p. 100

effective in a variety of situations. In the meantime, readers are urged to try new teaching techniques, methods, and approaches and to be more flexible, increase personal skills, examine alternatives, and raise comfort levels by “utilizing a variety of strategies to greatly enhance the amount of learning that is retained.”⁵⁰ Education in the group setting is less about the group and more about interesting interventions and about the group process of engaging and empowering learners to determine their own behavior changes.

Research is needed to further knowledge of the effectiveness of group education for specific settings, populations, interventions, and educational goals. Most importantly, we need to determine the role of groups in promoting long-term behavior changes, and we need information on the cost-effectiveness of this delivery format. Diabetes educators, organizations, and funding agencies are urged to continue to support research and make it a personnel and corporate priority.

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