Published in final edited form as:

Patient Educ Couns. 2011 November ; 85(2): 160–168. doi:10.1016/j.pec.2010.12.013.

Training peers to provide ongoing diabetes self-management support (DSMS): Results from a pilot study

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Abstract

Objective—This study determined the feasibility of training adults with diabetes to lead diabetes self-management support (DSMS) interventions, examined whether participants can achieve the criteria required for successful graduation, and assessed perceived efficacy of and satisfaction with the peer leader training (PLT) program.

Methods—We recruited nine African-American adults with diabetes for a 46-hour PLT pilot program conducted over 12 weeks. The program utilized multiple instructional methods, reviewed key diabetes education content areas, and provided communication, facilitation, and behavior change skills training. Participants were given three attempts to achieve the pre-established competency criteria for diabetes knowledge, empowerment-based facilitation, active listening, and self-efficacy.

Results—On the first attempt 75%, 75%, 63%, and 75% passed diabetes knowledge, empowerment-based facilitation, active listening, and self-efficacy, respectively. Those participants who did not pass on first attempt passed on the second attempt. Participants were highly satisfied with the program length, balance between content and skills development, and preparation for leading support activities.

Conclusion—Findings suggest that it is feasible to train and graduate peer leaders with the necessary knowledge and skills to facilitate DSMS interventions.

Practical Implications—With proper training, peer support may be a viable model for translating and sustaining DSMS interventions into community-based settings.

Keywords

peer support; self-management; diabetes

1. Introduction

Diabetes is a chronic illness that not only requires patients to initiate a complex regimen of self-care behaviors, but, more importantly, to sustain these efforts over one's lifetime. While diabetes self-management education (DSME) programs improve diabetes-related health

outcomes in the short-term, without continued follow-up and support, these gains cannot be maintained [1-5]. Although current national standards for DSME call for ongoing diabetes self-management support (DSMS) [6], our health care system is not currently designed to financially support long-term DSMS [7-10]. As a result, there is increasing interest in developing “peer support” programs as a promising model for long-term chronic illness management [11-12].

In the context of peer support interventions, peers may play different roles, have different responsibilities, and assume different levels of involvement. For instance, depending on the nature and purpose of the intervention, peer supporters can function as educators, advocates, cultural translators, mentors, case managers, or group facilitators [13-16]. Similarly, peer supporters can be charged with multiple responsibilities including teaching patients how to seek emotional support, communicate effectively with providers, establish linkages to clinical care, make informed self-management decisions, identify and obtain health care resources, set goals, make action plans, and solve problems [13-16]. Finally, peer supporters can be involved in interventions at varying degrees from playing an adjunct role in a larger, multi-component intervention [14], [17-20] to playing a primary role in the intervention delivery [21-23].

Depending on the specific role, responsibilities, and involvement peers have in a given intervention, the “training process” peers undergo can vary considerably. For instance, Dale and colleagues [24-25] trained peer supporters to deliver a 6-session, telephone-based, self-management support intervention designed to enhance routine clinic visits. The goal of the intervention was to motivate patients to implement treatment recommendations made by health care providers during clinic visits. To deliver this intervention competently, peer supporters participated in a 2-day training workshop that emphasized active listening skills, behavior change strategies and techniques to assess and enhance readiness to change. Peer supporters had the opportunity to practice and refine newly learned skills through role-play and telephone simulation exercises. Given that peers were serving in an adjunct role providing supplementary telephone-based support, such a brief and focused training process was appropriate.

Alternatively, in Lorig et al's study [21], peer educators were expected to facilitate a 6-week, comprehensive diabetes self-management program (DSMP) using a highly structured and scripted protocol. To successfully deliver the DSMP, peer educators completed a 4-day intensive training program (32 hours in total) that involved several activities. First, trainers played the role of “peer educators” and participants played the role of “patients” in a series of DSMP session simulations. Immediately following each session simulation, trainers discussed the rationale behind the information taught as well as the instruction methods used to deliver the information. Peer educators also learned additional skills including how to manage group dynamics and how to use various teaching approaches. Because peer educators in Lorig et al's [21] peer support intervention assumed a significantly larger and primary role, the peer training process required to prepare peer educators was more intensive and time consuming. Indeed, the type and extent of training peers receive likely reflects the nature and complexity of the intervention they are expected to deliver.

To date, most training programs have exclusively focused on preparing peer leaders to deliver DSME interventions that are time-limited and based on tightly scripted standardized, structured curricula [21]. Few published studies describe programs training peer leaders to facilitate DSMS interventions that are designed to be ongoing and driven by patients' self-management priorities, concerns, and questions.

The present authors developed a program training peer leaders to assist community-based African-American patients in sustaining and/or improving the diabetes-related health gains achieved through a completed short-term formal DSME program. Specifically, we sought to train peer leaders to facilitate the Peer-Led, Empowerment-based Approach to Self-management Efforts in Diabetes (PLEASED) intervention, an ongoing DSMS intervention with patients who recently completed 3 months of DSME delivered by certified diabetes educators (CDEs). The purpose of this study is:

1. To determine the feasibility of implementing a program training peers to lead DSMS interventions. Feasibility of conducting the PLT pilot program was defined as: the ability to (1) enroll 10 peer leader candidates, (2) maintain 80% attendance rate during the training program, (3) retain 4 peer leaders at the end of the program, and (4) maintain participants' commitment to facilitate the PLEASED program at the end of the program's completion.
2. To examine the extent to which participants achieve competency criteria (diabetes-related knowledge, empowerment-based facilitation skills, active listening skills, self-efficacy) required for successful graduation.
3. To assess participants' satisfaction with and perceived efficacy of the PLT program.

While there are multiple terms used for describing individuals who provide peer support throughout this paper, we will use the term, “peer leader.”

2. Methods

2.1 Participant recruitment and selection

This study was approved by the University of Michigan Institutional Review Board. We recruited participants via contacting graduates from our previous professional-led DSMS programs, and obtaining recommendations from diabetes-specific providers and community leaders. We employed two levels of eligibility screening. Individuals interested in participating were instructed to call a toll-free number to undergo the first level of eligibility screening. During this telephone call, we described the study and assessed whether individuals met basic inclusion criteria which included: (1) having diabetes, (2) being a resident of the greater Ann Arbor/Ypsilanti, MI community, (3) being 40 years old, (4) having transportation to attend training, and (5) being able and willing to commit 3–4 months for training.

Individuals who passed the first level of screening were then scheduled for the second level of screening: an evaluation of communication and interpersonal skills. Although many peer training programs cite good baseline communication skills as an inclusion criterion, few studies publish the protocol used to determine the presence or absence of this requirement. For this reason, we present a detailed protocol to assess communication skills in the context of one-on-one and group interactions (See Appendix A). The interview consisted of 2 components: an individual interview and a group interview. The purpose of the individual interview was to assess basic communication skills – such as the ability to convey thoughts and ideas, to express empathy, and to provide thoughtful responses. In addition to these three questions, we also assessed basic problem solving skills by presenting a challenging, yet realistic group session scenario to the individual. After presenting the scenario, we then asked the individual how he/she would respond to the participant if in the role of the peer leader.

The purpose of the group interview was to assess communication skills in a group setting as well as to examine group dynamics. To accomplish this goal, we conducted group simulations in which each individual was assigned a role. These roles included “the

participant with a problem”, “the group facilitator”, or a “group participant.” Each individual had the opportunity to play all three roles. We created five different scenarios to stimulate group discussion (See Appendix A). During these discussions we were looking for any serious communication problems such as being disrespectful, passing judgment, or rudely interrupting.

Those individuals who passed the second level of screening participated in a study orientation where we provided detailed information about the training program, discussed the expectations and what participation entailed, and obtained informed consent. Individuals who completed the informed consent documents were enrolled into the study. To reimburse participants for their time and effort as well as to offset costs of participation (e.g. transportation, childcare), participants received a \$40 stipend for each training session.

2.2 Peer Leader Training Program

All participants were required to participate in PLT, which is a 12-week program **conducted face-to-face in a group setting** with training sessions held two times each week, 2-hours per training session (46 hours in total). A team of four health professionals (two nurse CDEs, one dietitian CDE, and one clinical psychologist) were involved in the PLT and led training sessions based on their expertise area. A detailed description of the PLT program and its development is reported elsewhere [26]. Briefly, the program consists of the three core components: (1) building a diabetes-related knowledge base (e.g., principles of patient empowerment; core content areas for the national standards of DSME programs), (2) developing effective communication facilitation, and behavior change skills, and (3) applying skills in experimental scenarios (e.g., role plays, and group simulations).

Table 1 presents the PLT program structure. Week one discussed the overview of the program and patient empowerment, the conceptual framework for the program. Specifically, the three main principles of patient empowerment are: (1) diabetes is a patient-managed disease. It is the patient, not provider, who makes over 95% of the daily decisions in managing his/her diabetes. (2) when the patient chooses a behavior change that is personally meaningful, then he/she is more likely to make and sustain that behavior change; and (3) empowerment is a collaborative relationship in which providers function as educators or consultants to the patient, who ultimately, make the informed decisions.

After the introductory sessions, each week focused on a specific critical DSME content area as defined by the National Standards for DSME (See Table 1). Each weekly DSME content area addressed a specific set of learning objectives. Learning objectives included both content-related information as well as skills development. Basic communication skills included active listening, asking open-ended questions, making reflections. Advanced communication skills included dealing with resistance, clarifying personal values, and eliciting statements that reflect participants' desire to make changes (i.e., “change talk”). Empowerment-based facilitation skills emphasize focusing on participants' feelings and emotions associated with the problem, exploring participants' self-identified self-management problem, and promoting participant-directed goal-setting (See Table 2). Alternatively, facilitation skills that are not empowerment-based include solving problems for participants and passing judgment on participants' feelings, thoughts, or behaviors (See Table 2). Behavioral change skills included applying the 5-step empowerment-based behavioral goal-setting process (See Table 3), and developing an I-SMART diabetes action plan (See Appendix B). Table 4 presents the different instruction methods utilized in the training program.

The PLT was conducted in an integrated fashion with each training session designed to address DSME information; teach communication, facilitation, or behavior change skills;

and discuss psychosocial aspects of the diabetes experience. Appendix C presents an example of the “What is diabetes: Session 1” training session.

2.4 Measures

Diabetes-related knowledge was measured using the Diabetes Knowledge Test (DKT) [27] and the Diabetes Knowledge Questionnaire (DKQ-24) [28], a 14-item and 24-item instrument, respectively, assessing knowledge of self-management topics including dietary issues, physical activity, long-term complications, foot care, hyperglycemia, and blood sugar testing, and causes of diabetes. We also used the Understanding Management Practice (UMP), an 8-item instrument that assessing understanding of diabetes self-care [29]. For the diabetes-related knowledge domain, participants must score 80% on the DKT and DKQ and a mean score of 4 or greater on the UMP.

Empowerment-based facilitation skills was assessed using video vignettes of self-management scenarios developed by the research team. Participants are presented with typical self-management statement patients making regarding their diabetes experience and then asked to write a 1-sentence response to the statement. Table 2 presents categories for empowerment-based responses. Responses were scored using the following rating scheme: focus on feelings or exploring the problem received a +2; focus on goals received a +1; solving the problem for the patient -1; making judgments of the patient -2. This assessment methodology has been found to be sensitive to change in Anderson et al's [20] empowerment training program for health professionals. For the empowerment-based facilitation domain, participants must score +2 on three of the six empowerment-based vignettes and at least a +1 on the remaining three vignettes.

Active listening skills were measured using an adapted version of the Active Listening Observation Scale (ALOS) [31]. The original ALOS scale has 7-items that assess different aspects of active listening. For the purpose of our training, we modified this scale by adding two items: avoids giving advice or expressing judgments and thoroughly explores and identified all aspects of the problem. In addition we re-worded some of the items to add clarity and to be more consistent with terms and language used in our training. For example, we changed “shows not to be distracted during the consultation” to “is not distracted during the conversation.” Our resulting adapted ALOS scale included 9-items. For the active listening domain, participants must receive a mean score 4 on the modified ALOS.

Self-efficacy was measured by an 8-item survey adapted from Heisler & Piette [32] assessing perceived confidence in performing the following skills: asking open-ended questions, making reflections, using the 5-step goal-setting model, making an action plan, addressing emotions, deferring to a health care provider, and facilitating weekly groups. For the self-efficacy domain, participants must score at least a 4 or greater on each self-efficacy skill and be able to identify at least 2 areas for additional training.

Program satisfaction was assessed using a 5-item quantitative survey measuring satisfaction with program length, session length, balance between diabetes education content and skills development, preparation for facilitating a support group, and preparation for working individually with future participants.

Perceived efficacy of training was assessed using an 8-item survey followed by three open-ended questions. Respondents were asked to rate how effective the various instructional methods were on a 5-point Likert scale from 1 = “not effective to 5 = “extremely effective” and qualitative approaches. Open-end questions included the following: (1) What was most effective about the training program? (2) What was least effective about the training program, (3) Do you have any suggestions to improve the training program?

3. Results

3.1 Characteristics of the sample

Participants were between the ages of 48 and 72 years with a mean of 63 years ($SD=7.2$). Of the participants, 75% ($n=6$) were women and 25% ($n=2$) were men. Mean years since diagnosis was 14.3 ($SD=5.0$). Seventy-five percent had a college degree or higher.

Feasibility of conducting the PLT pilot program was defined as the ability to (1) enroll 10 peer leader candidates, (2) maintain a mean attendance rate of 80%, (3) retain 4 peer leaders at the end of the program, and (4) have all graduating participants express the future intention to facilitate an empowerment-based DSMS intervention.

We identified, recruited, and enrolled nine participants who met the criteria for the first and second level of eligibility screening. At the end of the first week of the training program, one participant dropped out due to family problems. Of the twenty-four training sessions, only two participants missed one session and one participant missed two sessions. The three participants who missed a training session(s) completed the necessary number of make-up sessions. Mean attendance rate for participants was 98% (range = 92% to 100%). With the make-up sessions, the group mean attendance rate was 100%. One hundred percent ($n=8$) completed the PLT program and expressed the intention to facilitate the PLEASED program in the near future.

3.2 PLT competency criteria

To successfully graduate from the PLT program, participants had to achieve the following pre-established criteria across four competency domains at the summative evaluation. Participants had three attempts to pass each competency domain.

Domain 1: Diabetes-related knowledge—On the first attempt, 75% ($n=6$) of participants passed the DKT (score range: 79% to 100%); 88% ($n=7$) passed the DKQ (score range: 79% to 100%). Participants who did not pass the DKT and DKQ on the first attempt passed on the second attempt.

Domain 2: Empowerment-based facilitation skills—On the first attempt, 75% ($n=6$) of participants passed the empowerment-based vignette responses. 38% ($n=3$) achieved the highest score (+2) across all six vignettes. All participants who did not pass the empowerment-based vignette responses on the first attempt passed on the second attempt.

Domain 3: Active Listening Skills—On the first attempt, 63% of participants passed the active listening skills assessment. Mean score for active listening skills was 4.16 ($SD=0.50$). Scores ranged from 3.42 to 4.98). All participants who did not pass the active listening skills assessment on the first attempt passed on the second attempt.

Domain 4: Self-efficacy—On the first attempt, 75% of participants achieved a passing score for the self-efficacy domain. All participants who did not pass the self-efficacy assessment on the first attempt passed on the second attempt.

Given that all participants passed the four core competency domains on the first or second attempt, these 8 participants successfully graduated as peer leaders. It should be noted that in spite of passing the competency criteria, prior to conducting the peer support intervention (i.e., the PLEASED program) we had to drop one of the eight peer leaders due to an underlying and persistent interpersonal communication concern that was not resolved upon remediation.

3.3 Program Satisfaction

As a group, participants were highly satisfied with the program length (mean=4.5; SD=.75); training session length (mean=4.6, SD=.52); balance between content and skills development (mean=4.5, SD=.75); preparation for leading a DSMS group (mean=4.3, SD=.70), and preparation for leading individual-based support activities (mean=4.5, SD=.53).

3.4 Perceived efficacy of program

While participants reported that all instructional methods were generally effective (mean scores: 4.0 to 4.8), the highest mean score was for group brainstorming (mean=4.8, SD=.46) and group sharing (mean=4.8, SD=.46), and the lowest mean score was for quizzes (mean=4.0, SD=.53). When asked what was most effective about the training program participants reported the following: sharing diabetes-related experiences, thoughts, and problems; practicing skills with other participants in the group, learning how to avoid passing judgment, conducting group simulations, and receiving group support. When asked about suggestions to improve the training program, participants reported the following: needing more opportunities to practice skills (e.g., co-facilitation simulations), needing more time for the early training sessions in which active listening skills was introduced, spending more time on topics that needed more discussion (e.g., depression), and extending the training program over a longer period of time (more than 3 months) to help participants absorb the new diabetes education content and refine communication and behavior change skills.

4. Discussion and Conclusion

4.1. Discussion

Peer support has been proposed as a potentially effective model for diabetes management. While preliminary evidence demonstrates that peer support models for DSME are promising [14], [33-34], there has been less research examining its application for ongoing DSMS.

Results from this study confirm the feasibility of implementing the PLT program. We recruited 9 participants who all passed the first and second level of eligibility screening. Early on in training, one participant dropped out due to a family health emergency. Accounting for the participants who attended make-up sessions for the training sessions missed, the attendance rate for PLT was 100%. All 8 participants who completed the PLT training program achieved the pre-established competency criteria (diabetes-related knowledge, empowerment-based facilitation skills, active listening skills, self-efficacy) required for graduation on the second attempt. The time interval between the first and second attempts were approximately ten to twelve days. For remediation, a trainer met with the participant individually to discuss the results of the evaluation. For example, for active listening skills, the trainer invited the participant to watch a videotape of their interview with the standardized patient and then self-assess their performance using the active listening rating form. Participants were instructed to identify strengths and weaknesses of their performance. Following the self-assessment, the trainer would provide feedback to the participant on ways to improve their skills.

We also found that participants were uniformly satisfied with the PLT program. While some members of the PLT action committee voiced initial concern about the length and intensity of training, at the end, several participants requested even more training sessions for topics that were more complex in nature such as depression. In fact, for Thompson et al's [19] CHW diabetes self-management intervention, training includes 12 hours on the topic of depression. It should be noted, however, that this intensive training component is designed to prepare CHWs for assisting health professionals facilitate a psychoeducation group

specifically on depression. Nonetheless, our future PLT programs need to address this participant-identified critique. According to participants, the more DSME content they learned, the more confident they felt in facilitating an ongoing DSMS program. Not surprisingly, of the instructional methods used, quizzes were least preferred while simulation-based activities were most preferred.

Even though one objective of our training program was to help participants develop good communication skills such as active listening and making reflections, from the outset, we wanted to eliminate candidates whose baseline communication habits were undesirable. For example, habits such as passing judgment, speaking disrespectfully or interrupting rudely all run counter to good active listening skills. Our 2-component group and individual interview protocol was very useful in screening for the presence of communication “red flags.” To date, many peer training programs do not explicitly discuss how communication skills are assessed at the point of recruitment. Based on our experience, providing a detailed protocol used for assessing communication skills is important especially since it is a fundamental quality we seek in peer leaders.

Our study also builds on prior work by noting the specific training outcomes participants are expected to achieve for successful graduation, something which has been omitted in prior reports of peer training programs [19], [22-24]. Programs tend to emphasize the knowledge and skills taught in training, yet rarely mention what competency criteria participants need to meet and how these criteria are evaluated. For example, following Dale et al's [23] 2-day peer training workshop, 2 participants were dropped post-training because they did not demonstrate the skill level required to effectively conduct a 6-session, telephone-based DSMS intervention. Unfortunately, these authors did not specify what skill or technique peer supporters were being assessed nor what the passing criteria was for graduation [22]. In the absence of clear training outcomes and criteria, we do not know what skills peer leaders are expected or qualified to perform. For this reason, our competency-based training program explicitly articulates the criteria peer leaders are expected to achieve to qualify as a PL. Clearly, the need for transparency in training expectations are important for both the trainers and the trainees.

There were several limitations to this study. Unfortunately, our training evaluation exhibited high sensitivity; therefore, we did encounter the risk of identifying false positives. In particular, we had one participant who consistently demonstrated good communication skills (as measured by the ALOS) under “testing conditions.” However, in “real-life” conditions on a day-to-day basis, this individual had a tendency to be defensive, confrontational, and abrasive. Midpoint during the training, we conducted a remediation with this individual with no success. Based on feedback from multiple sources (trainers and participants) throughout the course of training, we felt compelled to drop this individual even though she had achieved the pre-established competency criteria for graduation.

4.2. Conclusion

Findings from this study suggest that it is feasible to develop, implement, and evaluate a program training adults with diabetes to develop the necessary communication, facilitation, and behavior change skills to provide long-term DSMS. The success of the PLT program is contingent on the quality of participants recruited for training. Consequently, it is critical to employ a rigorous screening protocol to identify candidates ideally suited for this role. Finally, to ensure participants are fully qualified to function as peer leaders and to replicate this training process with other diverse patient populations, training outcomes and expected competencies need to be clearly defined.

4.3. Practical Implications

Using a peer support model for DSME and DSMS interventions increases the likelihood that we can translate empowerment-based interventions into existing community infrastructures without complete and continued reliance on the health care system and formal service providers. Given that peers live in the same communities as patients we are attempting to serve, peer support interventions can be more relevant to the cultural norms, social dynamics, and economic background of the community. Ultimately, the goal is to provide a new model of DSMS designed to be ongoing, patient-driven, and conducive to promoting long-term maintenance of behavior change.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This study was supported by a BRIDGES Grant from the International Diabetes Federation (IDF). BRIDGES, an IDF project, is supported by an educational grant from Eli Lilly and Company. The study is also supported by a Peers for Progress Grant from the American Association of Family Physicians Foundation, and a K23 patient-oriented career development award from National Institutes of Health, 1 K23 DK068375-01A1, National Institute of Diabetes and Digestive and Kidney Diseases.

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Table 1
Program structure and learning objectives

Week	DSME topic	Learning objectives
Week One	Introduction and Patient Empowerment	<ul style="list-style-type: none"> Understand facilitation and the role of a Peer Leader Define empowerment in your own words Relate your definition of empowerment to your own diabetes experience Provide constructive feedback to other participants in the Peer Leader training group Demonstrate the skill of “active listening” Demonstrate the skill of “asking open-ended questions”
Week Two	Making behavior changes	<ul style="list-style-type: none"> Demonstrate the process of self-assessment Create a LIFE[*] plan Engage in self-reflection Describe the 5-step behavioral goal-setting process Make and evaluate an I-SMART diabetes action plan Describe and demonstrate empowerment-based facilitation
Week Three	What is diabetes	<ul style="list-style-type: none"> Demonstrate the skill of “making reflections.” Describe what diabetes is List symptoms of high blood sugar Describe how to take care of diabetes Discuss the role of insulin in diabetes Describe the importance of the ABCD's of diabetes Describe ways to improve the ABCD's of diabetes
Week Four	Healthy eating	<ul style="list-style-type: none"> Identify influences on eating behaviors Identify the major food groups and their influence on blood glucose and health Identify strategies to incorporate healthy eating habits into your life. Identify foods that contain carbohydrates Understand the influence of carbohydrates on blood glucose Identify strategies to better manage blood glucose, blood pressure, cholesterol and weight through healthy eating Create an I-SMART diabetes action plan to make one change in eating behavior Understand the plate method, counting carbohydrate servings, and carbohydrate grams Keep a food diary and analyze the results Gain experience with all three methods for one day
Week Five	Stress, Coping & Depression	<ul style="list-style-type: none"> Discuss the role of stress in diabetes Recognize the signs of stress Understand the different emotional experiences people with diabetes have Identify effective coping strategies Identify resources for support Discuss the relationship between diabetes and depression

Week	DSME topic	Learning objectives
		<ul style="list-style-type: none"> Recognize the signs and symptoms of depression Discuss treatment options for depression
Week Six	Solving Problems	<ul style="list-style-type: none"> Demonstrate the process of problem solving Identify strategies to stay motivated with self-management plan Identify and address barriers to achieving self-management goals Understand the different roles of people on a diabetes health care team. Demonstrate how to prepare for a clinic visit (i.e. diabetes concerns assessment).
Week Seven	Physical Activity	<ul style="list-style-type: none"> Understand the relationship between physical activity and blood sugar List positive effects of regular physical activity on health Demonstrate the skill of “rolling with resistance” Describe the special things a person with diabetes needs to do before exercising Demonstrate how to take a target heart rate Compare and contrast aerobic exercise and resistance Demonstrate the skill of “clarifying personal values” Demonstrate the skill of “eliciting change talk”
Week Eight	Acute Complications	<ul style="list-style-type: none"> Define hypoglycemia and hyperglycemia Describe the causes, symptoms, and treatment for hypoglycemia Describe the causes, symptoms, and treatment for hyperglycemia Describe strategies to manage your diabetes on “sick days”
Week Nine	Long-term Complications	<ul style="list-style-type: none"> Identify the long-term complications of diabetes Identify risk factors for the long-term complications List strategies to lower your risk for the long-term complications Identify strategies for presenting information about the long-term complications Identify the long-term effects of diabetes on the heart and blood vessels Define nephropathy and retinopathy List strategies to lower your risk for large and small blood vessel damage from diabetes Identify the long-term effects of diabetes on the peripheral and autonomic nerves List strategies to protect and care for your feet Identify the long-term effects of diabetes on sexual health
Week Ten	Taking Medications	<ul style="list-style-type: none"> Identify benefits of and barriers to taking medications for diabetes Understand the purpose, action, side effects and guidelines for taking oral medications for diabetes Identify strategies to take medications more faithfully Understand the purpose, action, side effects and guidelines for taking other injectable medications for diabetes Understand the purpose, action, side effects and guidelines for taking insulin Identify reasons why many people are resistant to taking insulin
Week Eleven	Monitoring	<ul style="list-style-type: none"> Identify benefits of and barriers to monitoring blood sugar levels List factors that affect blood sugar levels

Week	DSME topic	Learning objectives
		<ul style="list-style-type: none"> • Interpret the results from blood sugar testing based on an understanding of these factors • Interpret results from monitoring • Identify common responses to blood glucose monitoring results • Identify strategies to monitor and use the results of blood sugar monitoring more faithfully
Week Twelve	Wrap-up	<ul style="list-style-type: none"> • Demonstrate active listening skills • Demonstrate the 5-step goal-setting process. • Demonstrate making an I-SMART action plan • Demonstrate problem solving • Demonstrate clarifying personal values • Demonstrate empowerment-based facilitation skills • Demonstrate a one-on one-session with a participant • Demonstrate a follow-up telephone call with a participant

* LIFE stands for Learn all you can about your diabetes, Identify your guiding principles, Formulate a plan, Experience and evaluate your plan.

Table 2
Empowerment-based facilitation skills

Responses	Goal	Examples of Responses
Empowerment-based: Focusing on Feelings or exploring the Problem	Focusing on the participant's feelings	<ul style="list-style-type: none"> How do you feel about that? It sounds like you are feeling overwhelmed.
	Exploratory questions to clarify the meaning	<ul style="list-style-type: none"> Tell me more about that Why is this a problem for you? Can you give me some examples? How would you like things to be different?
	Making reflections	<ul style="list-style-type: none"> So, it is a nuisance to have to remember to check your blood sugar 2 hours after eating.
Empowerment-based: Focusing on goals	Eliciting patient commitment	<ul style="list-style-type: none"> What are you willing to do? Are you reading to make a change?
	Eliciting options and goals	<ul style="list-style-type: none"> What do you want to accomplish? What are the steps you can take?
Miscellaneous	Asking and answering technical questions (i.e., simply gathering factual data	<ul style="list-style-type: none"> How long have you diabetes? What medication did your provider prescribe?
	Miscellaneous	<ul style="list-style-type: none"> Any statement that does not fit the other four scoring categories.
NOT empowerment-based: Solving problems for the person	Giving advice	<ul style="list-style-type: none"> A better way to handle that situation would be Why don't you try to do it this way?
	Offering to solve-problems for the patient.	<ul style="list-style-type: none"> I think you should talk to your wife about that. I would be glad to call your sister and talk to her about her nagging you.
NOT empowerment-based: Judging the person	Blaming the patient	<ul style="list-style-type: none"> You need more willpower. That does not seem like the best solution.
	Forgiving the patient	<ul style="list-style-type: none"> Nobody could follow a diet on vacation. That's not really your fault you couldn't help yourself.
	Invalidating the patient	<ul style="list-style-type: none"> Your situation does not seem as bad as other people's. You shouldn't feel angry about that.

Table 3
5-Step behavioral goal-setting process

Step One: Define the problem
<ul style="list-style-type: none"> • What is the hardest thing about caring for diabetes for you? • Please tell me more about that. • Are there some specific examples you can give me.
Step Two: Recognize your feelings
<ul style="list-style-type: none"> • What are your thoughts about this? • Are you feeling (insert feeling) because (insert meaning)
Step Three: Choose a goal
<ul style="list-style-type: none"> • What do you want? • How would this situation have to change for you to feel better about it? • Where would you like to be regarding this situation in (specific time, e.g. 1 month, 3 months, 1 year)? • What are your options? • What are barriers for you? • Who could help you? • What are the costs and benefits for each of your choices? • What would happen if you do not do anything about it? • Let's develop a plan.
Step Four: Make a plan (I-SMART plan) to reach your goal
<ul style="list-style-type: none"> • Are you willing to do what you need to do to solve this problem? • How important is it to you on a scale of 1-10? • How confident are you that you will be able to reach this goal on a scale of 1-10? • What are some steps you could take to help you reach this goal? • What are you going to do? • When are you going to do it?
Step Five: Experience and Evaluate the Plan
<ul style="list-style-type: none"> • How did it go? • What did you learn? • What barriers did you encounter? • What, if anything, would you do differently next time? • What will you do when you leave here today?

Table 4
Instructional methods used in training program*

Instructional Method	Purpose and Description
Self-assessment	invited participants to reflect on their own performance, recognize their strengths, and identify areas for improvement.
Peer-assessment	encouraged participants to provide constructive feedback to other participants regarding their presentation, communication, and facilitation skills.
Quizzes	were used to help reinforce the content and skills learned in the previous training session. Quizzes were designed as an educational tool rather than as assessment tool, therefore, participants graded their own quiz and were not expected to submit their responses to trainers.
Individual “peer leader” simulations	provided the opportunity for participants to become more comfortable talking in a group of peers through presenting “lecturette” topics learned in the previous training session.
Group brainstorming	invited participants to generate ideas, examples, or responses to a question posed by the trainers. This activity is objective in nature.
Group sharing	encouraged participants to share personal experiences, feelings, and thoughts in response to a topic posed by the trainers. This activity is subjective in nature.
Lecturettes	introduced core self-management topics in a brief and concise manner.
Skills Building	created an environment where participants could develop and refine communication, facilitation, and behavior change skills.
Role-plays	provided the opportunity for participants to pair up with another and apply the communication, facilitation, or behavioral change skills learned.
Pair and share	encouraged participants to share diabetes-related experiences and feelings with one another participant.
Group facilitation simulations	created an experiential setting for two participants to work as a team and practice facilitating discussion in a group setting.

* This table is adapted from Table 3. Instructional methods of PLT program in Tang et al.³⁵