APRN-Led Culturally Tailored Diabetes Self-Management Education (DSME) for Spanish-Speaking Hispanic Americans (SSHAs)

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Abstract

Type 2 Diabetes Mellitus (DM) disproportionately affects ethnic minorities in the United States, including Spanish-Speaking Hispanic Americans (SSHAs), and incurs a costly disease burden. This APRN-led project implemented a culturally tailored Diabetes Self-Management Education (DSME) program for SSHAs by combining the use of Bilingual Bicultural Trained Interpreters (BBIs) and the Diabetes Conversation Map™ (DCM). Eight SSHAs with hemoglobin A1c (HbA1c) over 7.0% were recruited to participate in the one-day DSME program. Pre-test/post-test measures of diabetes knowledge, self-efficacy, HbA1c, and program satisfaction were used to evaluate the one-day program. BBIs guided participants through the translated DCM "On the Road to Better Managing Your Diabetes," an engaging tool that facilitates learning through group conversation. The APRN leader incorporated a family-style approach and provided diabetes-friendly snacks. Low literacy take-home handouts depicted familiar carbohydrates and appropriate portion sizes. In this predominantly female sample from primarily El Salvador and Mexico [75% female, average age 52(12.8)], diabetes knowledge improved [Wilcoxon Signed Ranks Test (z = -2.041, p = .041)]; self-efficacy (p = .176) did not change. HbA1c was measured prior to the one day class and again three months later. HbA1c (p = .854) did not change significantly. Patient satisfaction was high at 4.839/5 (96.8%), an indication of active engagement. This APRN-led team of BBIs provided effective culturally-tailored DSME for this sample of SSHAs. Future longitudinal evaluation will examine relationships between satisfaction, attendance, knowledge, self-efficacy, behavior change, and HbA1c to identify DSME factors associated with reduced disease burden in this vulnerable population.

Keywords: Type 2 diabetes mellitus, Hispanic, glycemic control, diabetes knowledge, self-management, self-efficacy, Diabetes Conversation Map™

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to prevent or minimize complications

for a better quality of life.

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APRN-Led Culturally Tailored DSME for SSHAs

Diabetes Mellitus (DM) incurs a costly disease burden in the United States (Gonzalez, Berry, & Davison, 2013). Total health care expenditures for diabetes are $245 billion dollars a year (Centers for Disease Control and Prevention, 2014). More personal health care dollars are spent on diabetes than on any other health condition at $101.4 billion dollars, surpassing ischemic heart disease at 88.1 billion dollars (Dieleman et al., 2016). Comparing a person with and without DM, the person with DM has double the health care costs (Centers for Disease Control, 2010).

Diabetes Mellitus (DM) is burdensome due to comorbid complications (Gonzalez et al., 2013). DM increases the risk of heart disease by 2 to 4 times; DM is the leading cause of renal failure, lower limb amputations, and adult-onset blindness. DM may lower life expectancy by up to 15 years (Centers for Disease Control, 2010). DM is the 7th leading cause of death (National Center for Health Statistics, 2016); other sources place DM as the 3rd leading cause of death (Stokes & Preston, 2017).

The prevalence of DM is increasing. In the United States, there are 29.1 million people with DM (Centers for Disease Control and Prevention, 2014). In 2011-2012, the estimated prevalence of DM among all U.S. adults was 12% to 14%, with a higher prevalence among people of color (Menke, Casagrande, Geiss, & Cowie, 2015). According to the Centers for Disease Control and Prevention (2014), prevalence rates for DM in adults aged 20 years and older are 7.6% for non-Hispanic whites and 12.8% for Hispanics.

Healthy People 2020 is a national health promotion and disease prevention initiative which aims to "reduce the disease and economic burden" of disease, including diabetes (DM). A DM-specific goal of Healthy People 2020 is "to increase [by 10%] the number of adults aged 18

and older with diagnosed diabetes who report they have received formal diabetes education" (U.S. Department of Health and Human Services, 2015). As demonstrated in the Joint Position Statement of the American Diabetes Association (ADA), the American Association of Diabetes Educators (AADE), and the Academy of Nutrition and Dietetics (Powers et al., 2015), people who have diabetes self-management education (DSME) delivered by health care professionals have better control of their DM (Brunisholz et al., 2014; Norris, Lau, Smith, Schmid, & Engelgau, 2002).

Among ethnic minority groups, disparities exist in receiving this type of education. Hispanic American adults, in particular, have the lowest self-reported rate of receiving DSME (Centers for Disease Control, 2017). There are many potential contributing factors. SSHA adults are more than twice as likely as non-Hispanic white adults to be uninsured (Lucas & Benson, 2015). However, even among insured people with diabetes, only 5% of Medicare beneficiaries with DM received DSME during their first year after diagnosis (Li et al., 2014; Strawbridge, Lloyd, Meadow, Riley, & Howell, 2015). More likely reasons to account for these disparities include cultural and language barriers, competing priorities, and less perceived need (Chen, Cheadle, Johnson, & Duran, 2014).

Diabetes Mellitus in the Hispanic Population

Within the U.S. Hispanic population, DM prevalence rates vary from a low of 8.5% for Central and South American adults to a high of 13.9% for Mexican American adults and 14.8% for Puerto Rican adults (Centers for Disease Control and Prevention, 2014). Hispanic adults, as a group, are nearly 3 times more likely to experience DM complications, disability, and mortality compared with non-Hispanic white adults (Dominguez et al., 2015).

The Hispanic population is projected to be the largest minority group in the U.S. by the

year 2060. In 2014, the Hispanic population represented 17.4% of the U.S. population; in 2060, the Hispanic population is projected to represent 28.6% of the U.S. population (Colby & Ortman, 2015). As the Hispanic population grows, the number of DM cases and the burden of their emotional, physical, and financial impact will grow. By increasing DSME delivery to the Hispanic American community, it is hypothesized that DM health outcomes will improve.

Among Hispanic American adults and within Hispanic population subgroups, there are similarities and differences. There are variations in the Spanish vernacular among different populations. Cultural, health, and religious beliefs may also be diverse (Hatcher & Whittemore, 2007). In order to deliver an effective DM education program, a tailored approach is required (Powers et al., 2015).

Hispanic DSME programs for SSHAs can be culturally tailored by utilizing community health workers (CHWs) and by using educational materials that reflect literacy, language, and cultural nuances. Common to all Latino cultures is the importance of family (Hu, Wallace, McCoy, & Amirehsani, 2014) and the inclusion of family in diabetes education interventions.

Theoretical Framework

The social cognitive theory (Bandura, 2004) served as the framework for this literature review. The social cognitive theory incorporates a dynamic triad between health behavior, personal factors, and environmental factors that interact to influence behavior change (Allen, 2004). The core determinants of the social cognitive theory upon which this literature review is based are (a) knowledge of the risks and benefits to health, and (b) perceived self-efficacy when presented in the context of social learning (Bandura, 2004).

Knowledge

For knowledge to contribute to health behavior change, people must first learn what the health benefits are in favor of behavior change. People then evaluate what the health risks are to maintain unhealthy choices. Coupled with a belief that changing behavior will lead to improved health, people are then motivated to learn the specific behavioral skills and the general knowledge needed for a basic understanding of DM self-management (Allen, 2004). Part of this knowledge is the ability to correctly interpret symptoms and to know how to react appropriately to improve their health (Coffman, Norton, & Beene, 2012). For example, in a population of Mexican Americans living in Texas, the symptom of "excessive thirst" was not well understood in the context of the usual hot weather. The symptom was better recognized when it was called "intense thirstiness" associated with a dry mouth and burning sensation (Garcia, 2011).

Self-efficacy

Perceived self-efficacy is the belief that people have the ability and confidence to change behavior, and that improved self-care behaviors lead to improved health (Bandura, 1977). In order to build self-confidence, DSME focuses on building skills mastery. The process of skills mastery is enhanced through vicarious social learning with CHWs as role models (Edberg, 2015). Self-efficacy may be achieved, in part, by observing CHWs succeed in sustainable DSME behaviors within a culturally appropriate context.

DSME programs for SSHAs that emphasize self-efficacy improve health status outcomes (Lorig, Ritter, & Jacquez, 2005). A higher self-efficacy score is associated with performing a greater number of self-care behaviors. The frequent performance of self-care behaviors, in turn, is related to improvements in glycemic control (Powers et al., 2015; Sousa, Zauszniewski, Musil, McDonald, & Milligan, 2004; Sousa, Zauszniewski, Musil, Lea, & Davis, 2005). As HbA1c

improves, the physical, economic, and social costs of DM to society also improve, fulfilling the DM recommendation of Healthy People 2020 to reduce the disease burden of DM.

DM self-efficacy is a significant predictor of adherence to DM self-management behaviors (Krichbaum, Aarestad, & Buethe, 2003). With each 10% increase in self-efficacy score, patients are more likely to report following self-care behaviors (Sarkar, Fisher, & Schillinger, 2006). DM self-management, in turn, plays a key role in improving glycemic control (American Diabetes Association, 2013; Funnell et al., 2011; Sousa et al., 2005). This was further supported by a systematic review of 120 randomized controlled trials (RCTs) demonstrating that DSME improved HbA1c outcomes in 61.9% of the studies; the mean reduction in HbA1c was 0.74% compared with 0.17% for all participants randomized to a control group (Chrvala, Sherr, & Lipman, 2016). This is paramount because, for every 1% reduction in HbA1c, there can be a 35% reduction in the risk of DM complications (Srimanunthiphol, Beddow, & Arakaki, 2000). Therefore, even small reductions in HbA1c are critical to improving health status (Kent et al., 2013).

Bilingual, Bicultural Interpreters as Community Health Workers

Bilingual, bicultural interpreters (BBIs) are community health workers (CHW) who live in the community in which they serve. BBIs function as liaisons between the Latino community and the health care system. They are able to interpret both language and cultural domains (Deitrick et al., 2010). While BBIs generally do not have professional medical training, they usually share the same chronic condition as their target population. BBIs maintain close, personal relationships with clients. Their targeted knowledge shared in a social context provides a culturally acceptable method of facilitated learning (Deitrick et al., 2010).

BBIs have a key role in establishing partnerships with community organizations (Deitrick et al., 2010). For example, BBIs invite Spanish speaking health care professionals to a class. Participants appreciate the content from bilingual health care providers in the community with whom they can establish care.

BBIs relate to their clients as fellow community members who understand the culture and often know their clients and their families personally. They facilitate access to health care and social services, enroll participants in educational and physical activities, support lifestyle changes, and conduct intervention activities. Their role transcends that of educator and advocate as they foster community partnerships to implement health related programs. They partner with the community both to promote and to sustain healthy Hispanic communities.

BBIs serve as role models for incorporating DM self-management behaviors into daily living. They help participants understand the meaning of symptoms they might otherwise ignore. For example, DM and strong emotions commonly coexist (Concha et al., 2009). A symptom of hypoglycemia, such as a tremor, might mistakenly be attributed to anxiety. BBIs teach participants with DM that anxiety symptoms should be responded to by measuring glucose levels, due to the possibility that they may need to treat themselves for hypoglycemia.

Education programs and materials need to address cultural and dialect-specific nuances among SSHAs from different countries of origin. For example, one intervention used in a Puerto Rican population described the role of the *promotora*, a bilingual CHW whose role is familiar to Mexican American adults. The Puerto Rican population in the Northeast United States was not familiar with this educator role (Deitrick et al., 2010). As a part of study implementation, the Puerto Rican adults were familiarized with the extensive training which *promotoras* receive to qualify for their highly regarded status as knowledgeable health educators

(Brown, Garcia, Kouzekanani, & Hanis, 2002; Nimmons, 2016).

Problem Statement

DM prevalence is increasing, particularly among ethnic minority groups such as SSHAs. The costly disease burden can be minimized through receipt of tailored DSME. DSME is tailored by using BBIs to build knowledge and self-efficacy with language-congruent, low-literacy, and culturally adapted programs. Increasing delivery of culturally tailored DSME to SSHAs can reduce the DM disease burden and improve health outcomes.

Increasing delivery needs to be distinguished from increasing access. Increasing access would involve overcoming a broad range of psychosocial barriers to DSME including transportation access, financial access, and access to human resources and staffing. This project was designed to increase the delivery of culturally and literacy tailored DSME; this project did not address access issues related to transportation, program cost, or program staffing. People who did not have transportation were excluded from participation; this is unfortunate, as those without transportation may be most in need of DSME. Additional studies would need to address how to overcome barriers to access in this population.

Purpose

This project aimed to increase the delivery of linguistically, culturally, and literacy tailored DSME to SSHA adults, in order to decrease diabetes burden and improve health outcomes. To be effective, DSME needs to be presented in a practical and actionable manner to the participants for whom it is intended. Ways to tailor a DSME program include adapting information to a low literacy level by using videos and food models; integrating cultural beliefs and values into lesson content; and demonstrating familiar activities such as dancing and soccer (Hu, Amirehsani, Wallace, McCoy, & Silva, 2016). For Mexican American adults,

incorporating the support of family and community, holding education programs in Spanish, and utilizing bilingual health care workers was found to be effective (Brown et al., 2002).

Review of Literature

In order to improve health outcomes for SSHAs with diabetes, DSME programs need to be culturally tailored. The purpose of this literature review was to synthesize what is currently known about Hispanic culturally tailored DSME programs.

The inclusion criteria were as follows: the majority (more than 50%) of the study population was Hispanic American adults; the subject of the intervention was an individual at least 18 years of age with a medical diagnosis of Type 2 DM; measured outcomes included glycemic control, DM knowledge, and DM self-efficacy; the DSME intervention was culturally- and literacy-tailored utilizing a CHW or a Diabetes Conversation Map™; program materials and delivery were conducted in Spanish for participants who preferred to speak Spanish; and studies were published in 2010 or later. Studies included people of any literacy level who were able to speak Spanish or English, and who were low-income or at or below poverty.

The exclusion criteria were as follows: pregnant women, comorbid untreated depression or other psychiatric condition; interventions requiring the use of computers, mobile phones, or tele-health platforms; DM prevention programs; adolescents or children; single-case studies; single-gender studies; studies to compare men and women; studies measuring family outcomes in addition to individual outcomes when family was included; review articles; and CHWs as the main focus of the study.

The Ovid MEDLINE, CINAHL, and PubMed data bases were searched using subject headings and key words “Hispanic Americans,” “Hispanic,” “self-efficacy,” “diabetes,” “type 2 diabetes,” and “diabetes mellitus.”

In Ovid MEDLINE, the search terms were combined with the Boolean operator “OR” as follows: “Hispanic American” OR “Hispanic;” “self efficacy” OR “self-efficacy;” “knowledge”

OR "Health, Knowledge, Attitudes, Practice;" "Hemoglobin A, Glycosylated" OR "Diabetes Mellitus, Type 2" OR "Diabetes Mellitus" OR "Diabetes Education." These searches were then combined with the Boolean operator "AND" to yield 35 articles. Removal of duplicates yielded 33 citations. Twenty-four were excluded by title, four were excluded by abstract, and one was excluded by retrieval and reading the study. A total of 4 articles remained (Castillo et al., 2010; Rosal et al., 2011; Swavely, Vorderstrasse, Maldonado, Eid, & Etchason, 2014; Valen, Narayan, & Wedeking, 2012).

The CINAHL search combined the Boolean operator "AND" with the keywords as follows: "Hispanics" AND "self-efficacy" AND "Type 2 DM" AND "Glycosylated Hemoglobin A1c." This search yielded 16 articles. Fourteen of these were excluded by title. The two articles that remained overlapped with those already found in the Ovid MEDLINE search (Rosal et al., 2011; Valen et al., 2012).

The PubMed search used the "All Fields" feature and the Boolean operator "AND" to search for "Hispanic," "self-efficacy," "diabetes mellitus," "diabetes knowledge," AND "glycosylated hemoglobin." The search returned 10 studies. Seven were excluded by title, leaving three references. These three overlapped with those already found in the Ovid MEDLINE search (Castillo et al., 2010; Rosal et al., 2011; Swavely et al., 2014). A summary table of these four studies may be found in Appendix A.

A separate search using the keyword "conversation map" in Ovid MEDLINE, CINAHL, and PubMed, returned 11, 26, and 14 articles, respectively. Of these, the only one that met all criteria to study a predominantly Hispanic population in the United States using a Conversation Map™ intervention was the study by Swavely et al. (2014).

Culturally Tailored Diabetes Self-Management Interventions

Randomized controlled trial (RCT). Rosal et al. (2011) conducted a well-designed one year DSME program for participants held at centrally located community settings. There were 12 weekly sessions followed by 8 monthly sessions; attendance was greatest during the weekly sessions. Participants received reminder calls on the evening before each session.

The social cognitive theory was used as the theoretical framework. Low literacy was addressed by using picture-based food guides to engage participants in activities that reinforced key concepts. Experiential teaching methods were emphasized by having participants cook and eat healthy meals at the sessions.

A culturally tailored educational soap opera was used to model positive self-management behaviors and attitudes. When introducing dietary modifications, an emphasis on making traditional foods healthier was used. To support exercise, participants received a step counter and were encouraged to increase their walking steps progressively. Participants received a glucose meter and log to track their glucose values, diet, and physical activity. They were provided with personalized counseling and feedback; help with goal setting and problem solving was also provided. Attendance by family members or friends living in the household was encouraged.

This RCT enrolled a total of 252 participants who were randomly assigned to the intervention group (n=124) or the control group (n=128). The sample was mostly middle-aged, female, low literacy, Puerto Rican, Spanish-speaking, and unemployed. Mean baseline HbA1c was 9.0%. Almost half were using insulin.

All health care providers for both groups received laboratory results and provided care as usual. Measures included HbA1c, DM knowledge, and self-efficacy for diet and physical activity

change. While the intervention group received the 1-year DSME program, the control group received usual care.

DM knowledge was measured by an adaptation of the Audit of Diabetes Knowledge scale (Speight & Bradley, 2001). This instrument was pretested and adapted for the target population (Rosal, Carbone, & Goins, 2003). Self-efficacy for changing diet and activity levels was measured using a questionnaire developed by the research team, tested on the target population, and found to have adequate psychometric properties (Cronbach's α=0.85). Data was analyzed using *t* tests for continuous variables and Fisher exact tests for categorical variables.

The intervention group showed a significant improvement in HbA1c at 4 months (mean change in HbA1c of -0.53, $p < .001$) compared with the control group; this was not maintained at 12 months. There was a significant change in DM knowledge ($p = .001$) and self-efficacy ($p = .001$). The percentage of participants with HbA1c < 7% at 4 months was nearly 30% in the intervention group and 12% in the control group ($p = .013$). The proportion of patients reporting blood glucose self-monitoring two or more times per day increased significantly in the intervention group compared with the control group at 4 months (25.2% vs 6.4%, $p = .02$) and 12 months (22.5% vs 7.9%, $p = .023$). Measuring glucose before and after a change in diet demonstrated the effect of food selection on glycemic control.

The mean baseline HbA1c was 9.0% (1.87%). Change in HbA1c was inversely associated with baseline HbA1c in both the control and intervention groups, respectively (regression coefficient, control = .42; regression coefficient, intervention = .45). A lower baseline HbA1c demonstrated a smaller change in HbA1c. Other associations with HbA1c improvements at 12 months were general improvements in diet ($p = .036$), decreased percentage

of saturated fat intake (p = .003), increased diabetes knowledge (p = .001), and increased self-efficacy (p = .026).

Sustainability of positive outcomes required greater session attendance. There was a significant association between intervention attendance and HbA1c, with greater session attendance resulting in lower HbA1c outcome at 1 year (p=.005). This dose-response relationship has been seen in other Hispanic American adult studies (Brown et al., 2005).

As a RCT, the study by Rosal et al. (2011) had many strengths. This study used a power analysis to determine that 250 participants would be needed to account for a 20% dropout rate to provide 90% power for detecting a 7% or greater change in HbA1c between the intervention and control groups. This difference in change corresponds to a HbA1c difference of 0.5 to 0.6% (Rosal et al., 2009). Intent to treat analysis was used; IRB approval was obtained.

Pretest/posttest studies.

Empowerment, knowledge, and BBIs. Valen et al. (2012) used the Diabetes Empowerment Scale-Short Form (DES-SF), the Diabetes Knowledge Questionnaire (DKQ-24), and HbA1c levels to measure the effect of a DSME program delivered by CHWs to a Mexican American population. The setting was a Midwestern migrant clinic. Like Rosal et al. (2011), phone call reminders were given to increase participation; family members or close friends were invited to attend.

DM self-efficacy was measured using the Diabetes Empowerment Scale-Short Form (DES-SF) (Anderson, Fitzgerald, Gruppen, Funnel, & Oh, 2003) with a reliability of 0.84. It has eight questions rated on a Likert scale measuring improvements in self-efficacy achieved through DSME (Michigan Diabetes Research and Training Center (MDRTC), 2008). This was developed

for a Mexican American population and written to facilitate reading aloud. Possible responses were "Yes," "No," and "I don't know."

To improve self-efficacy, the DSME program by Valen et al. (2012) emphasized mastery of hands-on activities to improve performance skills; vicarious experience by observation of CHWs performing activities; and verbal persuasion to encourage participants throughout the program. During a shared meal, CHWs engaged participants in preparing healthy food by modifying favorite recipes (Valen et al., 2012), a strategy also used in Rosal's 2011 study. Participants had opportunities to practice serving appropriate portion sizes and making healthier food choices. The CHWs promoted physical activity through dancing and music, two culturally important activities (Valen et al., 2012).

Participants completed a program evaluation questionnaire to determine program effectiveness. The twenty item questionnaire addressed knowledge, handouts, and delivery of the program with 3 open-ended questions and 17 Likert scale items. All Likert scale items were scored as a 5/5, or "strongly agree," the highest rating possible, indicating a high level of participant satisfaction with the program.

The DSME program was delivered over six, 2-hour sessions by Spanish-speaking CHWs. Group interaction was spontaneous and encouraged. Common cultural beliefs such as *susto,* or fright, were discussed. The natural course of the disease process was emphasized, allaying participants' fears that insulin makes DM worse.

Only three adult female participants attended at least 5 sessions and had outcome data available. They all showed an improvement in DES-SF and DKQ-24 scores. No improvements were noted in HbA1c level after 3 months. Greater improvements in HbA1c were seen at higher starting levels of HbA1c, a common finding in the literature (Brown et al., 2005; Rosal et al.,

2011). It was hypothesized that because baseline HbA1cs were already near or at goal (6.3% to 7.3%), there was little room for improvement.

This DSME program emphasized interventions to improve self-efficacy. Specific interventions to improve behavioral skills included developing a personal DM action plan, selecting healthy food choices, and exercising with a leader and peers. Participants showed improvement in DM knowledge and self-efficacy scores from pre-to-post testing. Statistical significance could not be determined due to the small number of participants (Valen et al., 2012).

Self-efficacy and empowerment. The study by Castillo, Giachello, Bates, Concha, Ramirez, Sanchez, Pinsker, & Arrom (2010) enrolled 70 participants. Forty-seven participants completed pretest and posttest data. CHWs delivered the Diabetes Empowerment Education Program (DEEP), originally developed in Spanish and translated into English, to facilitate behavioral change in a bilingual Hispanic population with DM (Castillo et al., 2010).

This program featured interactive classes delivered in 2-hour group sessions over a period of 10 weeks. As a pretest posttest pilot study, conclusions were limited to demonstrating feasibility of implementation. Statistically significant changes in HbA1c and reported frequency of self-management behaviors were found.

To further delineate aspects of the program that did not result in positive outcomes, a qualitative analysis of focus groups utilizing rigorous methodology was conducted. The authors used audio, video, and/or digital recording of transcripts with computer analysis followed by hand-analysis among at least 2 reviewers for common themes, with any discordance resolved through discussion and by consensus (Sandelowski, 1986). Former participants of the quantitative study were invited to attend one of two focus groups held at the same location as the

original program. A small sample size (n = 15) of mostly females (n = 13) with a mean age of 58 participated.

Participants learned to be more aware of their body, adjusting their management style by how they felt physically, using symptoms as cues. Participants learned what common DM symptoms are, how to correctly interpret them, and how to respond appropriately to them. In turn, by focusing on correct symptom interpretation, the potential negative impact of limited health literacy on glycemic control can be overcome (Castillo et al., 2010). This has been demonstrated repeatedly in the contemporary literature (Coffman et al., 2012; García, Brown, Horner, Zuñiga, & Arheart, 2015).

Paired with the skill of checking blood glucose levels, this provided patients with a tool for experiential learning, where they could correlate for themselves how various sensations, foods eaten, and activity contributed to fluctuations in diabetes control. Improvements were significant for HbA1c (8.39 ± 1.96 to 7.79 ± 1.67, $p < .001$), systolic blood pressure (146 ± 22.7 to 137 ±16.7, $p = .006$), diabetes knowledge (% correct: 68.8 ±11.2 to 86.4 ±11.2, $p < .001$), following a healthy eating plan (number of days of the week, 3.3 ± 2.2 to 4.9 ± 1.5, $p < .001$), spacing carbohydrates throughout the day (number of days of the week, 2.9 ± 2.1 to 4.8 ± 1.8, $p < .001$), eating five or more daily servings of fruits/vegetables (number of days of the week, 3.7 ± 2.3 to 5.7 ± 1.6, $p < .001$), performing thirty minutes of physical activity (number of days of the week, 2.8 ± 2.3 to 4.0 ± 2.3, $p = .013$), measuring blood glucose (number of days of the week, 3.6 ± 3.0 to 5.1 ± 2.1, $p < .001$), checking their feet (number of days of the week, 3.8 ±3.2 to 5.4 ± 2.3, $p = .005$), checking the inside of their shoes (number of days of the week, 3.4 ± 3.3 to 5.5 ± 2.3, $p < .001$), taking recommended medications (number of days of the week, 5.5 ± 2.5

to 6.6 ± 1.3, p = .009), and depression scores (PHQ-9, 8.15 ± 6,16 to 6.2 ± 5.73, p = .04). Self-efficacy did not change significantly (Castillo et al., 2010).

Group education. Swavely et al. (2014) performed a pretest, posttest prospective study to examine outcomes for diabetes knowledge, self-efficacy, and HbA1c values. Over 12 months, a total of 277 patients enrolled. One hundred and six patients had complete demographic, health literacy, and pretest/posttest low health literacy (LHL) DM education program survey data. Overall, seventy-seven percent were Hispanic, mostly from Puerto Rico, living in the United States for more than 10 years, and preferred to speak Spanish. Their mean age was 56±10 years, and 66% were female. Most had Medicare or Medicaid, were low income or below poverty, and nearly half did not have a high school diploma. More than half did have adequate health literacy as measured by the Short Test of Functional Health Literacy in Adults (STOFHLA). Initially, 12 weeks were planned for program completion; most took longer than 14 weeks to complete the program due to work or family commitments.

DM knowledge, the primary outcome, was measured using the Spoken Knowledge in Low Literacy in Diabetes (SKILLD) tool (Rothman et al., 2005), a 10-item open-answer test, where each question has a value of "1" (see Appendix B). The range of possible scores is 1 to 10. This assessment tool is designed to be read and answered verbally. Over the 12 month study period, diabetes knowledge (p < .001) improved significantly.

A pre-determined knowledge score of 80% was used as the benchmark consensus from the education team as the score that represents attainment of sufficient, clinically relevant DM knowledge. The percentage of DM knowledge scores at 80% or above increased from 40% before program implementation to 84% after the program (Chi squared (1) = 31.41, p<.001). When stratified by literacy level, all knowledge scores maintained a significant difference

(p<001). This demonstrates that improvements in knowledge were not dependent on literacy level; rather, people of all literacy levels demonstrated a significant improvement in knowledge scores.

Self-efficacy was measured using the Stanford Diabetes Self-Efficacy tool (see Appendix B). This was measured on a scale of 1-10. This is a tool available through the National Institute of Nursing Research (Stanford School of Medicine). Over the 12 month study period, diabetes self-efficacy ($p < .001$) improved significantly.

Glycemic control was measured at baseline and at 3 months after completion of the program. HbA1c measured 3 months following the study significantly improved ($p = .007$) from the pre-intervention level of 7.98(±1.4) to the post-intervention level of 7.43(±1.4), n=58 (Swavely et al., 2014). This was accomplished by actively engaging patients in their care (Gherman, 2011). The program used principles of adult learning to introduce the human body and its normal functions in order to create a point of reference for future learning. Then, people could more easily link new information about the diseased state of DM and how it contrasts and compares to the normal state.

Self-efficacy and HbA1c were evaluated by comparing pretest and posttest mean scores using a paired *t*-test. Data were then stratified categorically into adequate and inadequate health literacy groups as measured by the Short Test on Functional Health Literacy in Adults (STOFHLA) instrument. The intervention was equally effective in improving self-efficacy and HbA1c for participants with adequate and inadequate health literacy, suggesting that health literacy can be overcome by interventions that accommodate for this.

The Diabetes Conversation Map™ (DCM) inspired personal sharing among group participants through visual cues and a facilitative style. This differs from traditional DM

education programs that use a structured, didactic approach. For an adult population with variable literacy levels, conversation and active participation encourage people with DM to take responsibility for their own self-care. Strategies such as the Teach Back method were employed to reinforce learning.

Access was addressed by offering make-up sessions on an individual basis using the same curriculum. To improve communication between the primary care providers who referred participants to the program, both the participants and their health care providers were given a copy of targets and goals created during the sessions.

Swavely (2014) also measured program performance. The number of patients referred to the program was tracked. The number of patients who entered and who completed the program were also collected. Patient satisfaction was measured by a survey developed by the evaluation team. Patient satisfaction was captured using an 8-point Likert scale survey and calculated as a mean total score. Satisfaction was also captured and calculated as a mean value for each question. Patient satisfaction ranked high, as 4.95(±0.18) out of a 5-point Likert scale.

In this study, areas for improvement were identified as communication between the program staff and referring provider as well as challenges with patients who had psychological and social problems. The cohort used the Spanish DM map in a population of Puerto Rican Hispanics. These results cannot be broadly applied to all Hispanic populations. Most patients in this study were low income and had insurance. This has not been studied in the uninsured population.

Diabetes Conversation Map™. There are a limited number of published studies in peer reviewed journals on the effectiveness of DCMs for SSHAs in the United States. The only one to incorporate SSHAs in a culturally tailored approach using the DCM was the study by Swavely

et al. (2014), which studied a Hispanic population predominantly from Puerto Rico. To date, no other SSHA DCM studies have been published in a peer-reviewed journal, although many have been presented at conferences.

There are no DCM studies on SSHAs who were born outside of the United States and who prefer a more traditional lifestyle. This study will add to the literature by testing the Spanish DCM on a population of uninsured SSHAs living in the Southeastern portion of the United States.

This intervention is highly visual and adapts well to a culture that embraces the conversation, or story. The soap opera, or *novela*, is a popular means of entertainment in the Hispanic culture and has been successful in educational interventions (Frazier, Massingale, Bowen, & Kohler, 2012). The DCM, like the soap opera, is a visual tool to encourage storytelling. Also, it is easily adapted for all literacy levels.

In summary, the combined search procedure returned one randomized controlled trial (RCT) and three pre-test/post-test study designs. The RCT by Rosal (2011) provided the strongest level of evidence. The remaining studies were pre-test/post-test studies (see Appendix A). All studies evaluated culturally tailored interventions that included CHWs or the DCM.

This project will examine the feasibility and effectiveness of a Spanish-language DCM DSME program delivered by two bilingual, bicultural interpreters (BBIs). This will be the first study to the author's knowledge of uniting a diverse community of SSHAs in the Southeastern U.S. using reliable measurement tools for evaluation.

Nursing Practice Implications

Implications for nursing practice were to increase the delivery of culturally tailored DSME in order to reduce DM complications and cost burden in the SSHA population. This

helps to fulfill the Healthy People 2020 goal of reducing disparities and providing DSME to more people with DM. This program demonstrates that language differences and literacy levels need not be barriers in culturally appropriate DSME. This framework also highlights a process by which to approach culturally-tailored DSME programs for other ethnically diverse populations.

Implications for Present Project

The Hispanic population suffers disproportionately from DM complications and is the fastest growing minority group in the United States. Differences in language, literacy levels, learning styles, and cultural norms determine what will work best for a DSME intervention to improve knowledge, self-efficacy, and glycemic control. The DCMs have been tested worldwide, but there are no RCTs that have been done on SSHAs that have been published in peer-reviewed journals.

The only study utilizing the DCM for Hispanic Americans has been for those of Puerto Rican heritage. In Central Virginia, the Hispanic population is diverse. There is a need to study the effectiveness of the Spanish DCM DSME program for a diverse SSHA population.

Project Question

Does participation in a DSME program utilizing the DCM that is culturally tailored for SSHAs improve (a) DM-related knowledge, (b) self-efficacy, (c) glycemic control, and (d) participant satisfaction?

Methods

Purpose

The purpose of this scholarly project was to evaluate the feasibility and effectiveness of a brief, culturally tailored Diabetes Conversation Map™ (DCM) education intervention to positively affect knowledge, self-efficacy, glycemic control, and participant satisfaction in order to improve clinical practice.

Project Design

This was a quasi-experimental study. A pre-test post-test design was used.

Hypotheses

The hypotheses to be tested were as follows:

1. The culturally- and literacy-tailored DCM-based class would improve knowledge post-test scores from pre-test scores.

2. The culturally- and literacy-tailored DCM-based class would improve self-efficacy post-test scores from pre-test scores.

3. The culturally- and literacy-tailored DCM-based class would improve HbA1c levels at 3 months post-intervention from pre-intervention.

4. The culturally- and literacy-tailored DCM class would be rated highly by participants.

Definition of Terms

APRN – Advanced Practice Registered Nurse

American Association of Diabetes Educators (AADE) – a multidisciplinary organization of health care professionals dedicated to integrating successful *diabetes self-management* as a key outcome in caring for people with diabetes. Members include dieticians, exercise physiologists, nurses, nurse practitioners, PAs, PharmDs, and MDs.

AADE7 Self-Care Behaviors – the 7 *diabetes self-care* behaviors that are essential for improved health status and quality of life; these are healthy eating, being active, monitoring, taking medication, problem solving, healthy coping, and reducing risks (AADE Position Statement, 2008).

Bilingual, bicultural trained interpreters (BBIs) – an inclusive term used to describe the general role of a *promotora*, or community health promoter, that is formally established in some states, such as Texas, but is not a formal role in Virginia.

Community Health Promoter – the English translation for the Spanish term *promotora*.

Community Health Worker (CHW) – a broader term referring to someone who usually lives in the same community as the population needing DSME. Often, the CHW also has diabetes.

Diabetes Conversation Map™ (DCM) - a visual tool created by Healthy Interactions to facilitate learning about diabetes through discussion.

Diabetes Mellitus (DM) - Ninety to ninety-five percent of all cases of DM are type 2 DM (Centers for Disease Control and Prevention, 2014). Thus, estimates inclusive of all cases of DM are reasonable estimates for type 2 DM.

Diabetes Self-Care – the behaviors essential for successful and effective *diabetes self-management*. As defined by AADE, these 7 behaviors are healthy eating, being active, monitoring, taking medication, problem solving, healthy coping, and reducing risks (AADE Position Statement, 2008).

Diabetes Self-Management – the regular performance of *diabetes self-care* behaviors which result in improved diabetes outcomes and quality of life.

Diabetes Self-Management Education (DSME) – the process of facilitating the knowledge, skills, and ability necessary for performing daily *diabetes self-care* behaviors (Powers et al., 2015).

Evaluating Group Diabetes Education (EDGE) study – a standardized DCM participant satisfaction survey.

Established patients – patients for whom the clinic is their primary care provider for their diabetes. Glycemic control must have been measured in the last 6 months by the clinic's laboratory as part of their regular medical care.

Ethnicity – in 1997, the Office of Management and Budget (OMB) revised the classification of federal data on Race and Ethnicity and created two categories for ethnicity, "Hispanic or Latino" and "Not Hispanic or Latino." The U.S. Census data was first able to distinguish race (white, black, some other race alone, two or more races) from ethnicity (Hispanic, not Hispanic) in the 2010 census with the added instruction that, "For this census, Hispanic origins are not races." In 2011, the U.S. Department of Health and Human Services revised data collection standards for ethnicity. (https://www.census.gov/content/dam/Census/library/publications/2011/dec/c2010br-02.pdf).

Hispanic – a descriptive term referring to persons of Spanish-speaking origin or ancestry. This is more commonly used in academic settings and library search engines.

Latino – a broader term referring to anyone of Latin American origin or ancestry, including people from Brazil, many of whom speak Portuguese. This is also the preferred ethnic term for the clinic population of SSHAs.

Participant Satisfaction Survey – a standardized satisfaction survey used in the EDGE study for DCMs.

Post-A1c Measurement – the standard of care for uncontrolled diabetes is to measure HbA1c every 3 months. As a part of their regular clinic care, participants would have their HbA1c rechecked every 3 months. Therefore, a retrospective chart review 3 months after the study date would capture a post-A1c measurement, if it is available.

Promotora – the Spanish word for *community health promoter*.

SCT – Social Cognitive Theory.

Self-efficacy – a measure of the degree of an individual's confidence in being able to incorporate and adopt self-management skills into daily life. In this project, the Stanford Diabetes Self-Efficacy Scale was used.

SKILLD – Spoken Knowledge in Low Literacy Diabetes Scale.

SSHAs – Spanish – Speaking Hispanic Americans.

Setting

The project took place in the Southeast United States as a quality improvement initiative within a large health care organization that provides significant community outreach to underserved populations. The intervention was scheduled in advance in a large classroom with an attached kitchen inside of a church. Several other classrooms on the hallway were available to bring individuals privately to conduct the orally presented questions and verbal response answers for the SKILLD assessment. The classrooms were on opposite ends of the hallway; individuals were unable to hear other participants' responses.

The number of program participants as defined in the DCM criteria of class set-up was limited to a maximum of 10 in order to facilitate equal participation and optimal benefit for all.

A minimum of 5 participants was recommended; a minimum of 5 participants was also needed to be able to perform statistical analysis.

Description of the Sample

Participants were recruited from the organization's primary care clinic for uninsured patients. The inclusion criteria were as follows: self-identified as Hispanic, preferred to speak Spanish, age ≥ 18; established clinic patient; formally diagnosed with type 2 DM with HbA1c greater than 7 in the past 6 months; able to provide verbal responses to questions read aloud; those who could be contacted by telephone. The exclusion criteria were as follows: women known to be pregnant on the day of the study; not available on the day of the study; inability to be reached by telephone; those who did not wish to participate for any reason. A detailed description of participant characteristics is found in Table 1.

Measures

SKILLD. Before-and-after knowledge scores were measured with the Spoken Knowledge in Low Literacy in Diabetes (SKILLD) scale (Rothman et al., 2005), a 10-item open-answer test, where each correct response to a question provides a score of 1 point for the question. Some questions have two parts. Both parts must be correct in order to receive the point for that question. The range of possible scores is 1 to 10 (see Appendix B). Cronbach's alpha was calculated to be 0.72 (Rothman et al., 2005). Permission was obtained from the author to use this scale (see Supplemental Materials).

Stanford Self-Efficacy for Diabetes scale. Before-and-after self-efficacy scores were measured with the Stanford Patient Education Research Center Self-Efficacy for Diabetes scale (see Appendix B), an 8-question tool measured with a Likert scale ranging from 1 to 10, where higher numbers indicate higher self-efficacy (Lorig, Ritter, & González, 2003). Permission was

not needed to use the scale. The score for each item was the number circled; the score for the scale was the mean of the eight items. Internal consistency reliability in a previously published population was calculated to be 0.854 (Lorig et al., 2003). This was developed in Spanish; the English version is also included (see Appendix B).

Participant satisfaction. A brief satisfaction survey was conducted. This was based on a standardized survey used in the Evaluating Group Diabetes Education (EDGE) study (Herrman, Savas, Cyzman, Schurman, & Macchi, 2012). This is available in Spanish and English (see Appendix B).

Participant demographics and characteristics. Demographic data collected were gender, age, marital status, country of birth, number of years of education, number of years diagnosed with diabetes, self-rated health status, fatigue level, pain level, and degree of shortness of breath (see Appendix B). Social and role activity limitations, owning a home glucometer, and measuring glucoses outside of clinic were also determined. Higher numbers represented worse self-rated health and worse symptom burden.

Procedures

Recruitment. Primary care providers were asked to identify potential participants among their patient population. Recruitment took place primarily by word of mouth among bilingual staff members in person and over the phone. Participants were given flyers when they were personally invited (see Appendix C).

Staff Training.

PI preparation. The PI has a certification in advanced diabetes management (BC-ADM) from the American Association of Diabetes Educators (AADE) in addition to the American Nurses Credentialing Center (ANCC) certification as a family nurse practitioner (FNP-BC).

Online training was required to obtain the DCM, including additional training to obtain the Spanish language maps. This took place during June 2015. Educator guides accompanied each kit.

BBI training. The PI prepared an English/Spanish combined version of the first DCM guidebook to assist with class flow (see Supplemental Materials). One week prior to the study, the principal investigator sent out reading materials by e-mail to the 2 BBIs to familiarize them with the fundamentals. The morning of the class, staff arrived at 8:00 am in order to review the questionnaires in which they would be assisting participants to complete. Later in the week, the BBIs also completed the satisfaction survey.

Project Intervention

Description. Once a participant was recruited, a reminder phone call was delivered the evening before. On the day of the DSME event, the PI, BBIs, and a staff nurse arrived one hour before the participants to set up the space and prepare for the DSME. Participants began to arrive at 8:30 am and were checked in by the staff nurse. One of the BBIs had primary responsibility for organizing and distributing the snacks. She set up warming stations in the attached kitchen and spread a tablecloth over a large table in the adjoining classroom. Coffee, artificial sweeteners, and sugar-free creamer were available for participants, as well as bottled water.

The DCM was placed on top of two adjoining tables around which all participants sat. Confidentiality of information shared and expectations for class flow were introduced. The BBIs helped participants complete the demographics questionnaires and the knowledge and self-efficacy pretests (see Appendix B). After delivering the 2-hour DSME program, the BBIs helped participants complete the knowledge and self-efficacy posttests and the participant satisfaction

survey (see Appendix B). Permission to use the diabetes knowledge scale was obtained (see Supplemental Materials). No permission was required to use the self-efficacy scale. Data collection began on October 31, 2016. A retrospective chart review was conducted on January 31, 2017 to obtain levels of glycemic control following the intervention. On March 31, following completion of the final scholarly project, all collected data was destroyed by placing it in the commercial shredder receptacle and shredded by an automated shredder operated by the PI.

The educational intervention was derived from the literature review of best practices (see Appendix A) and incorporated the first DCM (see Appendix C) and 2 BBIs. The format closely followed the script of the Spanish handbook with enhanced visual and kinesthetic aids to facilitate learning about nutrition (see Supplementary Materials). A detailed outline of the class content can be found in Appendix C. The class content was 2 hours with an hour break for lunch and an hour each for the pretest and posttest evaluations.

As incentives for participation, participants were offered a glucometer with test strips or a $10 Wal-Mart gift card. Door prizes were also available including step counters and Spanish cookbooks. The principal investigator (PI) self-funded this study including time and effort independent of employment.

Protection of Human Subjects

Protection of human subjects oversight was provided by the Institutional Review Board at the University of Virginia (see Appendix D). Human subjects protections was also provided by the healthcare organization employing the PI, which determined the project to be a quality improvement project and IRB exempt (see Appendix D). Permission was also obtained from the

healthcare organization's Regulatory and Compliance Committee (see Supplementary Materials).

The PI addressed informed consent by providing oral instructions prior to the class that attendance and participation were voluntary. The PI also set ground rules that all participants were expected to protect personal, medical, and private information and that the information must not be shared outside of the group setting.

Risks to participants were identified prior to IRB review and included that their knowledge, self-efficacy, and glycemic control may remain the same or may worsen from baseline; the snacks provided may raise their glucose levels; and their glucose levels may drop during the 4-hour intervention if snacks are not planned. Benefits included the potential to experience an enjoyable educational intervention; the possibility of improving their knowledge, self-efficacy, and glycemic control; and the potential to meet others who may be able to provide disease-management support.

In accordance with the Regulatory and Compliance Committee, those who participated implied consent to have personal data collected about them. No names were used in the data collection. Medical record numbers were assigned a study participant number. These assignments were stored in a locked cabinet accessible by the principal investigator in the administrative office of the clinic. All protected health information was kept confidential (see Appendix D).

Results

Participants

The demographic and descriptive characteristics of the participants are presented in Table 1. Demographic data were reported on all 8 participants. One participant who arrived late missed all of the pre-test assessments. Data analysis was limited to the 7 participants for whom there was complete pre/post-test data.

Demographic data. The sample was 75% female. The majority of participants were from El Salvador or Mexico, with an even distribution between the two. Other countries represented were Guatemala (12.5%) and Honduras (12.5%). Mean age in years was 52 (*SD* = 12.8) with a range of 35 to 71 years. Ages were proportionally distributed across three decades, with 28.6% of the sample each from the age ranges of 35-44, 45-54, and 55-64. The range of 65 and older comprised 12.5%. Overall, less than half (43%) of participants were married. Half of the males were married, while 60% of females were married. The number of years since being diagnosed with diabetes ranged from one to sixteen years, with a mean of 7.4 years and a median of 5 years. The majority (86%) had less than a high school education. Most (71%) completed the sixth grade. Of these, forty percent of participants completed the second grade (see Table 1).

Participant survey.

Among all participants, less than half measured glucose readings (43%) outside of clinic. Four participants (57%) owned a glucometer; of those, three quarters (75%) measured their glucose readings. Most (86%) of self-rated health scores were poor on a scale of 1 to 5, where 5 = poor, 4 = fair, 3 = good, 2 = very good, and 1 = excellent. Shortness of breath was the symptom with the lowest average score among participants (3/10), followed by fatigue (5/10) and pain (6/10). In terms of symptom burden, higher numbers represented poorer self-rated

health. Health interfered most with household activities and least with normal social activities with family, friends, and groups. Health also interfered, to a lesser extent, with hobbies/recreational activities and errands/shopping. Participants with the highest individual scores on the health interference test also rated symptoms of pain as high. For those participants with the highest cumulative symptom scores, the symptoms that most contributed to increased scores were pain and fatigue (see Table 1).

Statistics

Hypothesis testing.

SKILLD scores. The first hypothesis, that the one-day DCM class would improve knowledge post-test scores from pre-test scores, was met (see Table 2 and Figure 1). Since scores were not normally distributed, a nonparametric Wilcoxon Signed Rank Test was used instead of the paired *t* test. A Wilcoxon Signed Rank Test revealed a statistically significant increase in SKILLD scores following the intervention, $z = -2.041$, $p = .041$, with a large effect size ($r = .545$). Per Cohen (1988) criteria of .1 = small effect, .3 = medium effect, and .5 = large effect (Pallant, 2016), the effect size $r = .545$ was large (Pallant, 2016) (see Supplemental Material). The median SKILLD post-test score (*Mdn* = 5) was higher than the median SKILLD pre-test score (*Mdn* = 3) (see Table S1).

The most common knowledge element that participants knew on the pre-test (86%) was the importance of foot exams. The most common items not known on the pretest that were answered correctly on the posttest were the signs and symptoms of low blood glucose and how often and why to see an eye doctor.

Self-efficacy scores. The second hypothesis, that the DCM class would improve self-efficacy post-test scores from pre-test scores, was rejected. A Wilcoxon Signed Rank Test ($z = -$

1.352, p = .176) did not reach statistical significance (see Table 4 and Figure 2). It was noted that over 70% of participants had increases in the value of their self-efficacy scores.

HbA1c levels. The third hypothesis, that the DCM class would improve HbA1c levels at 3 months post-intervention from pre-intervention, was rejected. A Wilcoxon Signed Rank Test (z = -.181, p = .854) did not reach statistical significance (see Table 5 and Figure 3). With a 71% follow up rate, more than half of participants (60%) had improved or unchanged HbA1c levels.

Participant satisfaction survey. The fourth hypothesis, that the DCM class would be rated highly by participants, was met (see Figure 4). The average score was 4.839 out of 5, or 96.8%. Two of the eight items received the highest satisfaction ratings unanimously, that they learned a lot from the group discussion about how to manage diabetes, and they would recommend the class to a friend or family member in need. A majority of participants (62.5%) gave the highest overall satisfaction rating to all statements, scoring all items with a 5/5 (100%). Most participants (71%) gave the highest rating to the statements, "The class was interactive, with lots of discussion among participants" and "For the most part, the discussion was relevant to my own life" (Herrman et al., 2012).

Most participants (86%) gave the highest rating to the statements, "I learned new health facts that can be used to manage diabetes," "I felt comfortable sharing with other people in the class," "As a result of today's class, I know that people can successfully manage their Type 2 diabetes," and "Today's class gave me ideas on how to reach my personal health goals" (see Figure 5).

From the participant satisfaction survey (see Appendix B), more than half (57.1%) had prior DSME. Of these, half preferred the DCM format, and half preferred an individual format.

Of those that had no prior DSME, two-thirds (67%) of participants preferred the DCM format over any other format. When selecting the most effective format, even among those who had done other groups and videos, the group DCM format was selected as the most effective, followed by individual education sessions.

Those who selected a preference for an individual format commented that "I want another class like this" and "I liked sharing with others that also have DM." Other comments made by participants were that they liked the graphics and drawings, the conversation and interactive format; the information and sharing the information with others; and sharing a meal. Four out of seven participants had glucometers at home and were monitoring. The remaining 3 participants received a glucometer for their home use.

Process Measures

There were a total of 68 people identified as potential participants. Of these, there were 17 people contacted by telephone; eight of these (47%) attended. The most common reasons stated for not being able to attend were lack of transportation and inability to miss work. Most of them (87.5%) attended for the full day. All had a pre-class HbA1c. Only 5 of the 7 (71%) returned for follow up labs prior to the cutoff date.

Discussion

Summary of Results

This pilot study examined the feasibility and efficacy of a brief, one-day DCM program to enhance DSME in SSHAs. While diabetes-related knowledge improved significantly (see Table 2 and Figure 1), self-efficacy scores (see Table 4 and Figure 2) and HbA1c(see Table 5 and Figure 3) did not change significantly. This section provides a discussion of the results and the implications this project holds for future endeavors related to culturally-tailored DSME.

Knowledge. For overall diabetes-related knowledge, participants' SKILLD scores showed a statistically significant improvement (see Table 2 and Figure 1). This is consistent with the four exemplar studies which all showed an increase in knowledge scores pre and post intervention; in all studies powered to detect a statistical significance, there was a significant increase in knowledge scores (Castillo et al., 2010; Rosal et al., 2011; Swavely et al., 2014). This one-day program demonstrated that knowledge can be gained after one class.

Self-efficacy. In order to increase self-efficacy, knowledge must be applied towards behavioral change. In this project, a one-day intervention was not sufficient to increase self-efficacy, or the confidence that a behavior change can be performed with regularity (see Table 4 and Figure 2). In the literature, self-efficacy is generally measured over a period of months to provide sufficient time for building skills and confidence that new behaviors can be performed on a regular basis. In the two studies that were delivered over 12 months, self-efficacy significantly increased (Rosal et al., 2011; Swavely et al., 2014). The program which met least frequently of the DSME programs, the ten 2-hour group sessions, did not show a statistical significance in self-efficacy (Castillo et al., 2010)..

Self-efficacy is a measurement of confidence in performing self-care behaviors and is a good predictor of the regular performance of self-care behaviors. Self-care behaviors sustained over time are needed to improve and maintain HbA1c. With each 10% increase in self-efficacy score, patients are more likely to report following self-care behaviors (Sarkar et al., 2006). The performance of self-care behaviors, known as DM self-management, plays a key role toward improving glycemic control (American Diabetes Association, 2013; Funnell et al., 2011; Sousa et al., 2005). This is paramount because, for every 1% reduction in hemoglobin A1C (HbA1c), there can be a 35% reduction in the risk of DM complications (Srimanunthiphol et al., 2000). Therefore, even small reductions in HbA1c are critical to improving health status (Kent et al., 2013).

Improving self-efficacy often involves setting realistic goals and building skills and confidence over time. In this project, goal setting was not one of the objectives. In a future project, goal setting would be important to incorporate. It would also be important to have appropriate staffing levels to connect with participants in between sessions for individual coaching and other individual goal monitoring that is participant-driven. It is particularly important for the Latino population to have personal connections with bilingual health professionals who would be available to talk and meet with participants based upon individual need.

HbA1c. Three months following the DCM intervention, there was no change in HbA1c (see Table 5 and Figure 3). In the study by Rosal et al. (2011), there was a statistically significant decrease in HbA1c at 4 months that was no longer present at 12 months. In the study by Swavely et al. (2014) which took place over 12 weeks, HbA1c significantly decreased three months following the intervention. These studies demonstrate that HbA1c change can be

achieved in short-term studies; however, sustaining HbA1c change over longer time periods is more difficult. In this project, forty percent decreased their HbA1c; forty percent increased their HbA1c; and twenty percent had no change (see Figure 3). While not statistically significant, any amount of reduction in HbA1c would reduce the overall risk of DM complications (Srimanunthiphol et al., 2000) and is clinically meaningful.

Participant satisfaction. Of participants who had never experienced any diabetes education previously, half said they felt the group DCM format served them best. Others preferred an individual format, yet also rated the DCM class highly. This concurs with a literature review of DSME programs that found that a combination of group and individual approaches achieved the best outcomes as measured by a reduction in HbA1c.

It is the high level of satisfaction and participant engagement in this class that sparked open-mindedness to learn new information. It follows that, over time, this new knowledge can be translated into new behaviors, attitudes, and choices, leading to increased self-efficacy and improved HbA1c levels. It remains to be determined how to provide DSME in both individual and group formats on an ongoing basis which would continue to inspire participants to learn new information, adopt new behaviors, and realize improved health outcomes. Correlates with improved health outcomes include education frequency (Brown et al., 2005; Rosal et al., 2011) and a minimum of 10 hours a year (Chrvala et al., 2016).

Self-rated health. The self-rated health question (see Appendix B) taken from the National Health Interview Survey is a strong predictor of future health (Lorig & Laurent, 2007). The percent of Hispanic or Latino persons of all ages who self-report fair or poor health is 9.6% (Lucas & Benson, 2015); in this project, all persons surveyed (100%) self-rated their health as fair or poor.

Symptoms. Fatigue is the most common symptom across chronic disease. It is a measurement that has been used successfully with low literacy groups and Hispanics (Lorig & Laurent, 2007). Not all people with chronic disease have pain, but most people have some pain. Shortness of breath is less common than pain or fatigue, but often there are some changes in this scale with people whose primary diagnosis is diabetes.

Recruitment. Recruitment began on October 1, 2016 with flyers and announcements. As of October 24, 2016, there were no participants recruited by this method. This was consistent with the literature (Getrich et al., 2013; Rosal et al., 2010; Vincent, McEwen, Hepworth, & Stump, 2013). This was not addressed by the PI in the Regulatory and Compliance Committee due to concern for an additional delay in the approval process. There ought to be a process by which open communication might occur between doctoral candidates who are experts on the subject matter and experts of Human Subjects Protection who are on the Regulatory and Compliance Committee. For the benefit of future DNP students at the PI's place of employment, an outline of the steps needed to move an IRB-exempt project through the approval process at the PI's place of employment can be found in Appendix H.

Invitees were limited to adult patients of the clinic. Due to the importance of family, this may not be an appropriate recruitment strategy. Having family members present improves outcomes for patients as well as their family members (Hu et al., 2016; Hu et al., 2014). Family members serve as emotional and psychosocial support systems (Valen et al., 2012). One participant brought one of seven children; attendance would not have been possible otherwise.

More participants may be available to attend future classes if childcare was provided. Future classes might include all members of a family, limited to a class size of 10, to incorporate the social dynamics of family as the unit upon which lifestyle changes must occur. All family

members would need to have a basic understanding of dietary changes and physical activity levels that are normally expected as part of a comprehensive lifestyle change to manage diabetes. The growing problem of type 2 diabetes in children may best be addressed by targeting the whole family, particularly the adult parents who prepare meals; when children attend, it enhances buy-in. This is also an identified recruitment strategy, that Hispanic Americans are motivated by the desire to help family members and future generations (Getrich et al., 2013).

Recruitment was expanded to allow one of the BBIs who interpreted for the clinic to personally invite patients identified by clinicians. Two bilingual, bicultural staff members whom the patients knew reached out by telephone to contact additional patients. These actions are consistent with focus groups of Hispanic Americans who recommended that recruiters be fluent, that staff should have good and regular communication with participants, and that personal touch is important (Rosal et al., 2010).

Participation. Enthusiasm and empowerment are predictors of future participation in programs. The greater the participation, the greater the benefit (Rosal, 2011). Over the course of 3 months, the majority in this group maintained or decreased their HbA1c. This leads to reduced cost burden from complications. Groups are an effective way to explore common health beliefs among participants. In some cases, particular health beliefs may contribute to poor diabetes self-care (Caballero, 2011; Concha, Mayer, Mezuk, & Avula, 2016; Whittemore, 2007). In order to sustain change at the individual, family, community, or organizational level, paradigms need to support a new way of thinking. Creating buy-in among the SSHA population faces many barriers, including strong religious beliefs, personal early-life experiences, misinterpretation and misunderstanding of diabetes as a chronic condition, and how various treatments work to maintain health. Part of the success inherent in this DSME program utilizes the family as a

culturally-based motivator for change (Getrich et al., 2013). In order to keep the family well, family members can be educated together so that they can dispel myths and provide support in adopting healthier lifestyles (Hu et al., 2016).

Summary

In this culturally-tailored DSME program, self-efficacy did not improve. Normally, self-efficacy is coupled with goal setting (Wang, Lemon, Welch, & Rosal, 2013). This DCM class did not address setting and meeting goals. When goals are achieved, confidence may develop in sustaining healthy behaviors over time. A one-day class does not provide enough structure or focused attention to be able to increase self-efficacy. Additional staffing support would also be needed to influence behavior change and change in self-efficacy over time (Getrich, 2013). This project was not sufficiently staffed to provide the counseling and feedback participants would need.

The PI desired to use a self-efficacy measurement scale that was specifically designed for low-literacy SSHAs, the Lifestyle Self-Efficacy Scale for Latinos with Diabetes (LSESLD) (Wang et al., 2013). The PI did not receive permission to use the scale in time for this study. In future projects, this may be a better scale to measure self-efficacy in low-literacy populations.

Recruitment took more resources and time than expected. The total cost of food was $140; ten $10 Wal-Mart gift cards was $100; glucometer supplies cost $60; folders and colorful paper on which to print the surveys cost $60; the flip phone that was not used cost $50. This was a lesson learned in evidence-based practice, to utilize recruitment methods known to work for the population being recruited. Adequate time for communication between researchers and compliance officers in non-academic settings should be available for both parties. The researcher, as the subject matter expert, should engage in intellectual dialogue citing the

literature to explain reasons for chosen processes. Compliance officers in non-academic settings are experts in data security and management. The PI was intimidated by the uncertainty of the approval process and the time away from employment duties it was requiring. With concern for keeping peace at work, the PI did not stand up to the Regulatory and Compliance Committee with the evidence-based research behind the chosen recruitment strategies; instead, the PI executed all suggestions until the reality of having no participants was looking probable. It is unfortunate for a PI to acquiesce study details when the literature supports otherwise, in order not to further delay the regulatory and compliance committee's evaluation and review of a proposal.

Strengths

This intervention utilized an evidence-based diabetes education program and two validated measurement tools in the qualitative literature. Culturally-sensitive methods were incorporated into the intervention with the use of BBIs. This was the first study in the United States to use the DCM for SSHAs from diverse countries, with a majority from El Salvador and Mexico.

Participants reported high levels of satisfaction and demonstrated significant improvements in knowledge scores. Self-efficacy scores showed improvement for most participants although it did not reach statistical significance. People felt free to share. The sanctity of the church set the tone for trust and honesty.

This study demonstrated the feasibility and efficacy of a program to improve diabetes management among SSHAs with poor diabetes control. Poor access is one of the reasons why SSHAs receive less DSME than non-Hispanic Whites. While this took place in a free clinic with uninsured patients, it serves as a microcosm for better recruitment strategies among insured SSHIs. Currently in the health system, a referral is needed from a doctor or primary care

provider to sign up for diabetes education. This recruitment strategy does not work in this population.

In this study, the DNP-prepared APC was both clinician and diabetes educator, serving as the liaison between clinician referrals and diabetes education. This highlights the strength of advanced practice nurses to combine a clinical management approach while supporting DSME in a primary care practice. When there is an interdisciplinary approach, the impact on access to patient care is significant.

Limitations

Limitations included the pre-post study design without a matched comparison group. In future studies, it may be possible to utilize a control group composed of a random sample of participants from the original list of 68 eligible participants who did not attend the class. This study design allowed for inferences to be made about the diabetes education program on patient outcomes. As a pilot project, only a small number of patients participated in the intervention. Limited by a three-month time frame, a meaningful longitudinal study was not possible. This would not be generalizable to other settings; however, the theory of building knowledge and self-efficacy with attention to cultural competence using tools like the DCM may be expanded upon.

Random selection would be difficult to achieve. This was a convenience sample, which limits the ability to generalize study findings. The narrow inclusion criteria preclude generalization of findings to bilingual or English-speaking Hispanics, those with prediabetes, and people with type 1 diabetes.

Confounding bias was possible given that all participants were from the same clinic. Many were patients of the PI and may have experienced a Hawthorne effect.

The PI used validated test instruments, but they may not have been valid for this particular population; in some cases, measured self-efficacy was higher pre-intervention than post-intervention. The knowledge and self-efficacy measurement tools were designed to be a comprehensive evaluation. In this class, one of the four DCMs was used. Essentially, participants were exposed to 25% of the material on which they were evaluated. These tools would be better indicators of knowledge and self-efficacy after 4 DCM classes.

This should be explored further in a larger group defined by the desirable amount of power to be able to demonstrate statistically significant improvements. Due to the small sample size, nonparametric statistics were necessary to test hypotheses. Compared with parametric statistics, nonparametric statistics are not as powerful to detect differences.

Nursing Practice Implications

Implications for nursing practice were to improve patient care outcomes by improving diabetes knowledge, self-efficacy, HbA1c, and patient satisfaction. By improving access to DSME, this helped fulfill the Healthy People 2020 goal of reducing disparities and providing DSME to more people with DM. Patient access to programs is often problematic. This program demonstrated that language differences and literacy levels need not be barriers to receiving culturally appropriate self-management education.

This program will provide a basis for future work with Hispanics with diabetes, as well as a framework by which to approach culturally-tailored DSME programs for other disadvantaged or minority populations.

Implications for Further Study

It may be useful to measure self-efficacy again if possible in this cohort. Doing so would put having this class as a baseline rather than showing that this class intervention led directly to an increase in self-efficacy. A standardized post-class survey one week later may provide insight into whether participants have thought about or implemented any changes.

Conclusions

This one-day venue which would take 2 hours to present if pre/post evaluations were not as extensive, is an efficient method to educate up to 10 SSHAs at once while utilizing shared resources. It is feasible and effective in satisfaction ratings and building knowledge. Further investigation via a longitudinal study would be able to evaluate sustainability. The care taken to deliver a culturally tailored intervention welcomes participation, a first step in garnering the knowledge and self-efficacy needed to self-manage diabetes. This can be applied to other culturally unique groups and can be centered around religious or cultural hubs, in partnership with community health care facilities.

Products of the Scholarly Practice Project

Results of this project will be summarized and submitted for publication by the June 2017 deadline to *Clinical Diabetes* for their special feature issue in December 2017 (see Supplemental Materials). The completed abstract was submitted and accepted for a poster presentation at the Virginia Council of Nurse Practitioners' 2017 annual conference on March 8, 9, 10, and 11, 2017, in Williamsburg, Virginia (see Supplemental Materials). To improve future DNP processes at the PI's place of employment, a protocol for navigating an IRB-exempt project was developed (see Supplemental Materials). This will serve as the basis for continued work with

vulnerable populations in the community who have chronic conditions such as diabetes that are amenable to improvement through self-management education.

Summary

Enthusiasm and empowerment are predictors of future participation in programs. More frequent program participation is associated with greater improvements in health outcomes (Rosal et al., 2011). Over the course of 3 months, 60% of participants had a reduced or unchanged HbA1c. This was not statistically significant; clinically, this represents more than half the participants. This leads to reduced cost burden from complications.

Diabetes educators are teaching how chronic illness requires daily self-management for optimal health. People can learn that diabetes can be controlled, and that others are doing it in their family or community. In order to sustain change, societal paradigms need to support a treatment approach that recognizes the chronic nature of diabetes and the daily care and attention required to maintain health.

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Table 1.

Characteristics of Participants in the Diabetes Conversation Map Group Class (N = 7)

Variable	Frequency (%)	*M (SD)*
Age (years)		52.0 (12.8)
Satisfaction Score		4.9 (.2)
Interferes with Life		6.9 (3.8)
Years with Diabetes		7.4 (5.4)
Gender		
Female	5 (71.4)	
Male	2 (28.6)	
Country of Birth*		
El Salvador	3 (37.5)	
Mexico	3 (37.5)	
Guatemala	1 (12.5)	
Honduras	1 (12.5)	
Marital Status		
Married	3 (42.9)	
Not Married	4 (57.1)	
Self-rated Health		
Fair	6 (85.7)	
Poor	1 (14.3)	
Age Group (years)		
35 – 44	2 (28.57)	
45 – 54	2 (28.57)	
55 – 64	2 (28.57)	
65 +	1 (14.29)	
Owned a Glucometer	4 (57.1)	
Measured Glucoses	3 (42.9)	
Less Than High School	6 (85.7)	

*n = 8. No other demographic data was collected on the participant who arrived late.

Table 2.

SKILLD SPSS Table for Statistical Significance

Test Statistics[a]

	SKILLDpost - SKILLDpre
Z	-2.041[b]
Asymp. Sig. (2-tailed)	.041*

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Note. SKILLD = Spoken Knowledge in Low Literacy Diabetes scale. SKILLDpost = SKILLD score immediately after the intervention. SKILLDpre = SKILLD score prior to the intervention.

*$p < .05$

A Wilcoxon Signed Ranks Test revealed a statistically significant increase in SKILLD knowledge scores following participation in the diabetes self-management education (DSME) program for Spanish-Speaking Hispanic Americans (SSHAs), $z = -2.041$, $p = .041$.

Table 3.

Self-Efficacy SPSS Table for Statistical Significance

Test Statistics[a]

	SEpost - SEpre
Z	-1.352[b]
Asymp. Sig. (2-tailed)	.176*

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

*$p < .05$

A Wilcoxon Signed Ranks Test did not show a statistically significant difference in self-efficacy scores following participation in the diabetes self-management education (DSME) program for Spanish-Speaking Hispanic Americans (SSHAs), $z = -1.352$, $p = .176$.

Table 4.

HbA1c SPSS Table for Statistical Significance

Test Statistics[a]

	HbA1cpost – HbA1cpre
Z	-.184[b]
Asymp. Sig. (2-tailed)	.854*

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

*$p < .05$

A Wilcoxon Signed Ranks Test did not show a statistically significant difference in HbA1c three months following participation in the diabetes self-management education (DSME) program for Spanish-Speaking Hispanic Americans (SSHAs), $z = -.184$, $p = .854$.

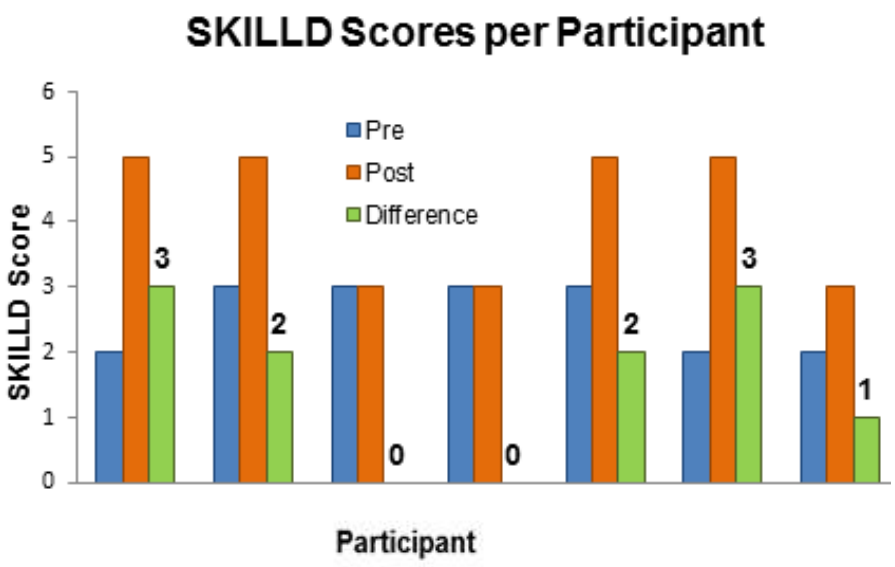

Figure 1. SKILLD scores and score differences from pre-DSME to post-DSME . Pre = SKILLD Score before the DSME class; Post = SKILLD Score after the DSME class; Difference = Post SKILLD Score – Pre SKILLD Score. Null hypothesis = the median difference between pairs of observations is zero.

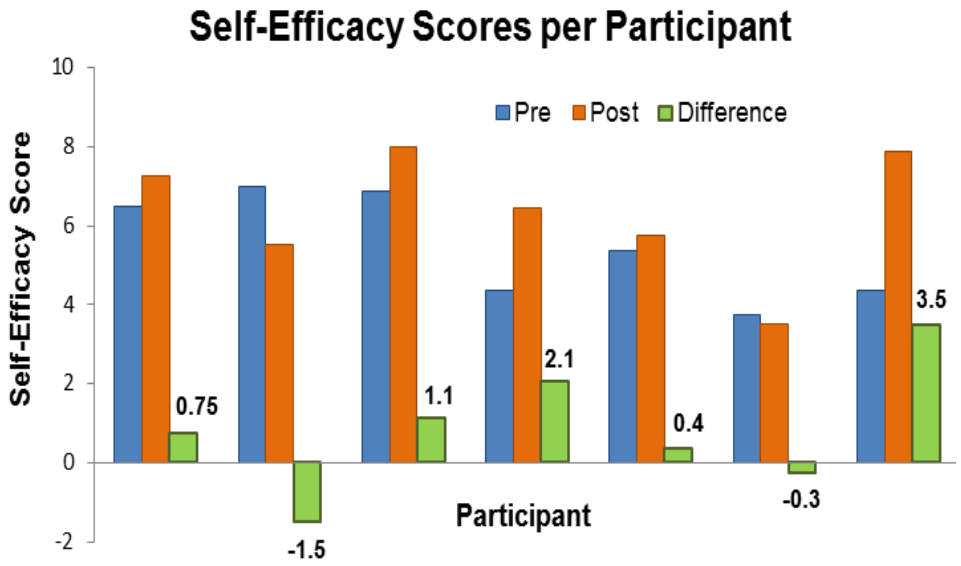

Figure 2. Self-Efficacy scores and score differences from pre-DSME to post-DSME . Pre = Self-Efficacy Score before the DSME class; Post = Self-Efficacy Score after the DSME class; Difference = Post Self-Efficacy Score – Pre Self-Efficacy Score. Null hypothesis = the median difference between pairs of observations is zero.

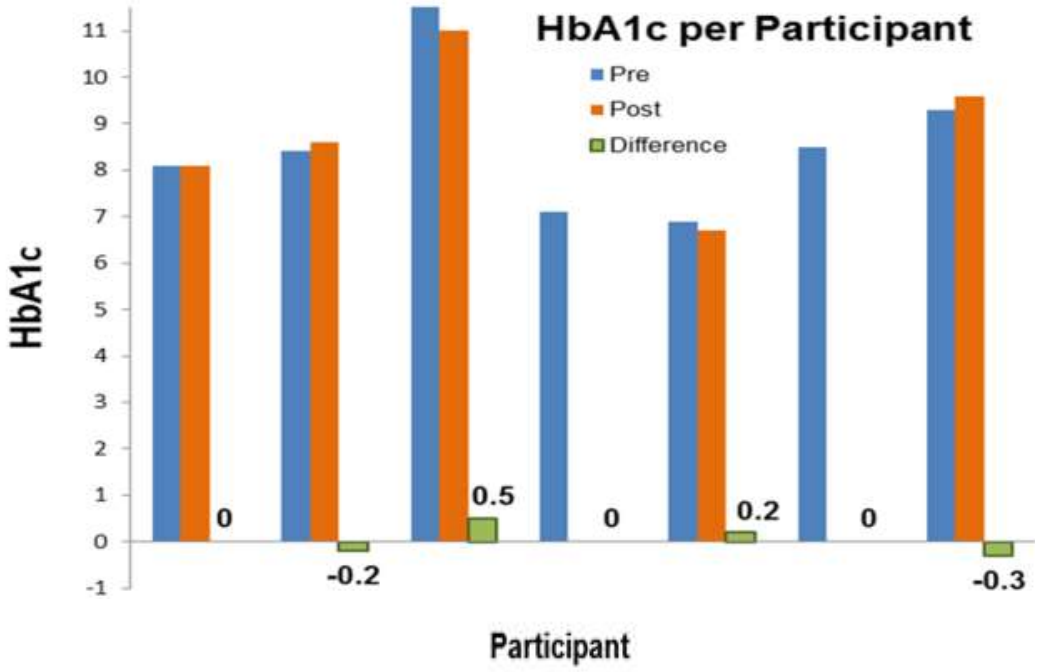

Figure 3. HbA1c measurements (%) and HbA1c differences from pre-DSME to post-DSME . Pre = A1c measurement (%) before the DSME class; Post = A1c measurement (%) after the DSME class; Difference = Post A1c Measurement (%) – Pre A1c Measurement. Null hypothesis = the median difference between pairs of observations is zero.

Figure 4. Average satisfaction score per participant. See Supplementary Materials for the Participant Satisfaction Survey items.

Appendix A.

Summaries of Adult Hispanic Diabetes Programs

Author	Subjects/Setting	Design	Intervention	Comparison	Outcomes	Limitations/Strengths
Castillo, 2010	To evaluate the DEEP (DM Empowerment Education Program) delivered by BBIs in community settings. Latino subgroups were not specifically identified.	Pre-test/post-test Recruitment from 2 community self-care centers	N=70 2-hour sessions weekly for 10 weeks Taught symptoms as cues.	Diabetes knowledge (DKQ-24), self-efficacy (DES-SF), A1C	BBIs; testing blood glucose was significant and was tied to experiential learning.	Significant improvements were seen for A1c and knowledge. High attrition rate. Pilot project No differences in self-efficacy Limitations: Latino subgroups not identified
Rosal et al, 2011	Latinos age ≥ 18, mostly Puerto Rican, type 2 DM dx documented with last A1c ≥7.5 measured in the previous 7 months; ability to walk, no type 1 DM or history of ketoacidosis; no medical contraindication to participation; no glucocorticoids within the prior 3 months; not currently participating in cardiac rehab or formal weight loss program; no plans to move out of the area within 12 months; access to a telephone; ability and willingness to provide informed consent; physician approval. n=252; 128 randomized to intervention and 124 randomized to control.	RCT Block randomization stratified by site, sex, A1c level, and insurance status. PCPs could not be blinded, but they were not informed of the patients' study assignments. The first session was in the participant's home. The remaining sessions were in groups at centrally located community settings.	Intervention, Latinos en Control: Year-long program with intensive 12 weekly sessions followed by 8 monthly sessions. Picture-based food guides used to address low health literacy; educational soap opera to provide cultural tailoring. All participants received a step counter and were encouraged to progressively increase their number of walking steps. Family and friends living in the household were encouraged to attend. Eat healthy meals at sessions; make traditional foods healthier; goal setting.	Enhanced usual care: no intervention. Trained bilingual and bicultural research staff blinded to the study condition conducted assessments at baseline, post-intensive intervention (4 months), and at 12 months. Survey measures for both groups were administered orally. All clinical measures were with validated instruments. DM knowledge tool was validated. Behavioral measures were by self-report.	A between-groups difference in A1c was significant at 4 months but not at 12 months. At 4 months: -.88 [CI -1.15 to -0.60); at 12 months, for intervention group: -.35 [CI -.62-to .07]. The percentage of patients with A1c < 7 at 4 months was 29.1% for the intervention group and 12.4% for the control group (p=.013). This was not maintained at 12 months. SMBG not statistically significant; not tied to adult learning principles; Greater attendance was associated with lower	**Limitations:** -Self-reported nature of the behavioral data -Inability to objectively measure physician prescription patterns and patient medication adherence or estimate the mediating effect of medications on physiological outcomes -blinding not possible due to the nature of the study **Strengths:** -IRB approved -Signed informed consent - Participants were recruited from 5 community health centers. -Randomized at the individual level, stratified by site, sex, A1c, insurance status. -Block randomization

Author	Subjects/Setting	Design	Intervention	Comparison	Outcomes	Limitations/Strengths
	The groups were balanced except for significant difference in diastolic blood pressure, slightly higher in control group. A1c control 9.11±2.0; intervention 8.85±1.8, not statistically different. 5 community health centers				A1C	-providers were not informed of their patients' study assignments
Swavely, Vorderstrasse, Maldonado, Eid, Etchason (2014)	N=277, of which 106 completed survey data. English and Spanish speaking adult patients 18 years and older diagnosed with T2DM. Population: 77% Hispanic, mostly Puerto Rican, living in the U.S. longer than 10 years, preferred to speak Spanish. Mean age 56.8 ± 10.4 years; 66% female. More than 88% had Medicare or Medicaid; most were low income or at/below poverty, nearly half did not have a high school diploma. Health literacy: 63.2% had adequate health literacy as defined by STOFHLA [Short Test of Functional Health Literacy (FHL) in Adults – measures FHL through reading comprehension].	Pre-post prospective evaluation Measures: Primary Outcome was DM Knowledge (Spoken Knowledge in Low Literacy patients with Diabetes tool = SKILLD tool, Rothman, 2005), 10 items, "good reliability and validity." Secondary Outcomes: A1c, DM self-efficacy (Stanford Diabetes Self-efficacy tool) Qualitative interviews with DM educators and referring providers.	Diabetes Conversation Map classes over a 12-month period. Rolling enrollment. Thirteen hours of education were given over 12 weeks. Topics: Introduction to the human body, the diseased state of diabetes, and the course content of the Diabetes Conversation Maps in Spanish.	A1c and self-efficacy were evaluated by comparing pre- and post-test mean scores using a paired *t* test. Data were stratified for diabetes knowledge by adequate and inadequate health literacy. Change in diabetes knowledge was analyzed using the McNemar test for paired proportions.	Participants had significant improvements in diabetes knowledge ($p<.001$), self-efficacy ($p<.001$), and A1c values 3 months after completing the program ($p=.007$). The frequency of blood glucose testing did not change. 63% had adequate health literacy; patient knowledge, defined as the percentage who scored 80% or higher after completing the program, significantly improved from 40.7% to 84%. When stratified by health literacy level, the knowledge gain was significant for all levels of health literacy.	self-efficacy scores measured on a scale of 1-10; Patient satisfaction scores were high. Patients enjoyed the interactive approach to education and helping one another. Referring providers: Satisfied with the curriculum, improved access to DM education, and patient-centered approach. Expressed ongoing challenges with patients' DM self-management skills and sub-optimal clinical outcomes for patients who had psychological and social problems. Communication between the program staff and referring provider was identified as an area for improvement.
Valen, Narayan, &	To develop an evidence-	Pre-test/3	Diabetes Management	Measurements:	BBIs	Strengths: hared

Author	Subjects/Setting	Design	Intervention	Comparison	Outcomes	Limitations/Strengths
Wedeking (2012)	based DM education program for Mexican American migrant workers.	month post-test of DES-SF scores, DKQ-24 scores, A1c levels The intervention consisted of six, two-hour sessions delivered in Spanish by Hispanic BBIs.	self-efficacy was measured using the DES-SF, with 8 Likert scale items, in English and Spanish, from the Michigan Diabetes Research and Training Center (Anderson, Fitzgerald, Gruppen, Funnell, & Oh, 2003).	Diabetes Empowerment Scale (DES-SF), Diabetes Knowledge Questionnaire (DKQ-24), and A1c.		meals/socialization; dancing for physical activity; included BBIs; modification of favorite recipes; socialization; inviting family Limitations: small n

Appendix B

Spoken Knowledge in Low-Literacy in Diabetes (SKILLD) Scale, English version

Directions: Read the primary question to the client and give 10 to 15 seconds to respond. If client is unable to respond to the primary question, then read the secondary question and allow 10 to 15 seconds to respond. Give full marks only for complete answers; 0 for incomplete, wrong, or no response; 1 point for complete and right responses. Maximum score = 10.

SKILLD Questionnaire Answer Coding[a]

Item	*Correct answers*	*Incorrect Examples*	*Score*
1. "What are the signs and symptoms of high blood sugar?" If no answer: "How do you feel when your blood sugar is high or when you were diagnosed?"	Frequent urination, thirst, hunger, vision effects, headache	Have never had high blood sugar	Need at least two correct answers
2. "What are the signs and symptoms of low blood sugar?" If no answer: "How do you feel when your blood sugar is too low?"	Hunger, anxiety, heart effects, shaking, sweating, fatigue	Stomachache, vision problem, headache	Need at least two correct answers
3. "How do you treat low blood sugar?" If no answer: "What should you do if your sugar is too low? How can you bring your blood sugar up if it is too low?"	Drink soda, juice, or milk; eat candy or sugar; eat something; check sugar level	Take medicine, go to the doctor, walk, rest	Need just one correct answer
4. "How often should a person with diabetes check his or her feet?" If no answer: "Once a day, once a week, or once a month?	Daily	Weekly, monthly	Need correct answer
5. "Why are foot exams important in someone with diabetes?" If no answer: "Why is it important to look at your feet? What are you looking for?"	Circulation, feeling, wound, infection, ulcer, amputation	Nonspecific: e.g., affects feet, trim toenails	Need just one correct answer
6a. "How often should you see an eye doctor?"	Annually	Twice yearly, monthly, only if problem	
6b. "Why is it important to see an eye doctor?"	Blindness, bleeding in eye, retinopathy, glaucoma	Nonspecific: e.g., affects eyes, acuity, cataracts	Need 6a correct and 6b at least one correct
7. "What is a normal fasting blood glucose or blood sugar?" If no answer: "When you get up the first thing in the morning and check your blood sugar before you eat or take medicine, what should it be?"	70-130 mg/dL, or 3.9-7.2 mmol/L	A number greater than 130	Need correct answer
8. "What is a normal HbA1c or "average blood sugar test"? If no answer: "When they draw blood from your arm and get an average blood sugar reading, what should it be?"	5%, 6%, or 7%	3%, 8%, or 9%	Need correct answer
9a. "How many times per week should someone with diabetes exercise?"	4 or more days a week	No exercise or 1, 2, or 3 days a week	
9b. "Each time, for how long should someone with diabetes exercise?" If no answer: "How long or how much per day?"	30 minutes or more	15 minutes or less, 15-30 minutes	Need correct answer to 9a and 9b
10. "What are some long-term complications of uncontrolled diabetes?" If no answer: "Do you know anyone that has diabetes and had bad things happen to them? What are some of those bad things?"	Amputation, stroke, coma, loss of feeling, heart, vision, circulation problems	Teeth, arms, lung, or mind problems	Need at least two correct answers

NOTE: SKILLD = Spoken Knowledge in Low Literacy in Diabetes scale.
a. Score is the number of correct answers out of 10.

Spoken Knowledge in Low-Literacy in Diabetes (SKILLD) Scale, Spanish version

Durante la administración de SKILLD, al participante se le leen las preguntas principales y se le dan de 10 a 15 segundos para responder. Si el participante no es capaz de responder las preguntas principales, entonces las preguntas secundarias se hacen y se le dan otros 10 o 15 segundos para que el responda.

SK1. *¿Cuáles son las señales y síntomas de alta concentración de azúcar en la sangre?* (Obtenga 2 respuestas, si es necesario proporcione la ayuda necesaria para obtener 2 respuestas)

Proporcione de 10 a 15 segundos, si el participante no puede responder entonces pregunte: *¿Cómo se siente cuanto el nivel de azúcar en la sangre está alto o cuando usted fue diagnosticado?*

1.	¿Cuáles son las señales y síntomas de la azúcar alta en la sangre? ¿Cómo se sentía cuando su azúcar estaba alta o cuando recibió el diagnóstico? Needs at least (2): a.→ Mucha sed b.→ Orina frecuente c.→ Hambre d.→ Vista borrosa e.→ Debilidad, fatiga, o sueño	
2.	¿Cuáles son las señales y síntomas de la azúcar baja en la sangre? ¿Cómo se sentía cuando su azúcar estaba baja? Needs at least (2): a.→ Hambre b.→ Nervioso, ansiedad, irritabilidad, confusión c.→ Sudores d.→ Latidos rápido del Corazon e.→ Temblor f.→ Mareos g.→ Fatiga, debilidad	
3.	¿Cómo tratas el azúcar baja? ¿Qué se debe hacer cuando el azúcar está demasiado baja? ¿Cómo se puede mejorar el azúcar si está demasiado baja? Accept very general answer: a.→ Jugo b.→ Leche c.→ Dulce d.→ 15 g de carbohidratos **Y** e.→ Chequee su azúcar	
4.	¿Cuántas veces se debe examinar los pies una persona con diabetes? ¿Una vez por día, una vez a la semana, o una vez por mes? Accept: *diario*	
5.	¿Por qué el examinarse los pies es indispensable en una persona con diabetes? ¿Por qué es importante examinar los pies? ¿Qué podria encontrar? Accept very general answer: (Prevenir complicaciones en los pies de la diabetes.) a.→ Chequee para una herida, corte, ulcera, infección b.→ Áreas rojas c.→ Prevenir amputaciones d.→ Otra:_____	

SKILLD Scale, Spanish version (continued)

6.	¿Con cuánta frecuencia debe visitar a un medico de los ojos y por qué es importante? ¿Con cuánta frecuencia? ¿Por qué? Accept: a.→ Al año **Y** b.→ Chequee retinopatía diabética, glaucoma, ceguera	
7.	¿Cuál es un nivel normal de glucosa/azúcar en la sangre cuando está en ayunas? ¿Cuándo se levanta por la mañana y examina su azúcar antes de comer o tomar medicina, ¿cuál debe ser el nivel? Accepted range: *70 (or 80) to 120*	
8.	¿Cuál es el nivel normal de hemoglobina A1c, o "prueba para promedio de azúcar"? ¿Cuándo se toma sangre del brazo y se determina el promedio de azúcar en la sangre, ¿cuál debe ser el nivel? Accept either: *normal ≤ 6% or target ≤ 7%*	
9.	¿Cuántas veces a la semana debe hacer ejercicio una persona con diabetes, y por cuánto tiempo? ¿Cuántas veces a la semana? ¿Por cuánto tiempo? Accept within: 3-5 veces por semana para total de 30-45 minutes (frecuencia **Y** duración)	
10.	¿Cuáles son algunas complicaciones "a largo plazo" de la diabetes descontrolada? ¿Conoces a alguien que tiene diabetes y le pasa o le ha pasado "cosas malas"? ¿Cuáles son algunas de las "cosas malas"? Needs at least (2): a.→ Ceguera, pérdida de la vista b.→ Dañar en los riñones o diálisis c.→ Amputación d.→ Dañar en los nervios (neuropatía, impotencia, gastroparesis) e.→ Enfermedades del corazón	
Total score		

Stanford Diabetes Self-Efficacy Scale, English Version

We would like to know how confident you are in doing certain activities. For each of the following questions, please choose the number that corresponds to your confidence that you can do the tasks regularly at the present time.

1. How confident do you feel that you can eat your meals every 4 to 5 hours every day, including breakfast every day?	not at all confident	1	2	3	4	5	6	7	8	9	10	totally confident
2. How confident do you feel that you can follow your diet when you have to prepare or share food with other people who do not have diabetes?	not at all confident	1	2	3	4	5	6	7	8	9	10	totally confident
3. How confident do you feel that you can choose the appropriate foods to eat when you are hungry (for example, snacks)?	not at all confident	1	2	3	4	5	6	7	8	9	10	totally confident
4. How confident do you feel that you can exercise 15 to 30 minutes, 4 to 5 times a week?	not at all confident	1	2	3	4	5	6	7	8	9	10	totally confident
5. How confident do you feel that you can do something to prevent your blood sugar level from dropping when you exercise?	not at all confident	1	2	3	4	5	6	7	8	9	10	totally confident
6. How confident do you feel that you know what to do when your blood sugar level goes higher or lower than it should be?	not at all confident	1	2	3	4	5	6	7	8	9	10	totally confident
7. How confident do you feel that you can judge when the changes in your illness mean you should visit the doctor?	not at all confident	1	2	3	4	5	6	7	8	9	10	totally confident
8. How confident do you feel that you can control your diabetes so that it does not interfere with the things you want to do?	not at all confident	1	2	3	4	5	6	7	8	9	10	totally confident

Scoring

The score for each item is the number circled. If two consecutive numbers are circled, code the lower number (less self-efficacy). If the numbers are not consecutive, do not score the item. The score for the scale is the mean of the six items. If more than two items are missing, do not score the scale. Higher number indicates higher self-efficacy.

Characteristics

Tested on 186 subjects with diabetes.

No. of Items	Observed Range	Mean	Standard Deviation	Internal Consistency Reliability	Test-Retest Reliability
6	1-10	6.67	1.76	.928	NA

Source of Psychometric Data

Stanford English Diabetes Self-Management study. Study reported in Lorig K, Ritter PL, Villa FJ, Armas J. Community-Based Peer-Led Diabetes Self-Management: A Randomized Trial. The Diabetes Educator 2009; Jul-Aug;35(4):641-51.

Comments

This 8-item scale was originally developed and tested in Spanish for the Diabetes Self-Management study. For internet studies, we add radio buttons below each number. There is another way that we use to format these items, which takes up less space on a questionnaire, shown also in the PDF document. This scale is available in Spanish.

References

Unpublished.

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Stanford Diabetes Self-Efficacy Scale, Spanish Version

En las siguientes preguntas nos gustaría saber qué piensa Ud. de sus habilidades para controlar su enfermedad. Por favor marque el número que mejor corresponda a su nivel de seguridad de que puede realizar en este momento las siguientes tareas.

1. ¿Qué tan seguro(a) se siente Ud. de poder comer sus alimentos cada 4 ó 5 horas todos los días. Esto incluye tomar desayuno todos los días?

2. ¿Que` tan seguro(a) se siente Ud. de continuar su dieta cuando tiene que preparar o compartir alimentos con personas que no tienen diabetes?

3. ¿Qué tan seguro(a) se siente Ud. de poder escoger los alimentos apropiados para comer cuando tiene hambre (por ejemplo, bocadillos)?

4. ¿Qué tan seguro(a) se siente Ud. de poder hacer ejercicios de 15 a 30 minutos, unas 4 o 5 veces por semana?

5. ¿Qué tan seguro(a) se siente Ud. de poder hacer algo para prevenir que su nivel de azúcar en la sangre disminuya cuando hace ejercicios?

6. ¿Qué tan seguro(a) se siente Ud. de poder saber qué hacer cuando su nivel de azúcar en la sangre sube o baja más de lo normal para usted?

7. ¿Qué tan seguro(a) se siente Ud. de poder evaluar cuando los cambios en su enfermedad significan que usted debe visitar a su médico?

muy inseguro(a) 1 2 3 4 5 6 7 8 9 10 muy seguro(a)

8. ¿Qué tan seguro(a) se siente Ud. de poder controlar su diabetes para que no interfiera con las cosas que quiere hacer?

muy inseguro(a) 1 2 3 4 5 6 7 8 9 10 muy seguro(a)

Scoring

The score for each item is the number circled. If two consecutive numbers are circled, code the lower number (less self-efficacy). If the numbers are not consecutive, do not score the item. The score for the scale is the mean of the eight items. If more than two items are missing, do not score the scale. Higher number indicates higher self-efficacy.

Characteristics

Tested on 189 Spanish-speaking subjects with type 2 diabetes.

No. of Items	Observed Range	Mean	Standard Deviation	Internal Consistency Reliability	Test-Retest Reliability
8	1.13-10	6.46	2.07	.854	NA

Source of Psychometric Data

Spanish Diabetes Self-Management (Programa de Manejo Personal de la Diabetes) Study. Study reported in Lorig KR, Ritter PL, Gonzalez VM. Hispanic chronic disease self-management: a randomized community-based outcome trial. Nurs Res. 2003; Nov-Dec;52(6):361-9.

Comments

This 8-item scale was developed and tested in Spanish for the Diabetes Self-Management study, and has been translated into English. There are 2 ways to format these items. We use the format above, because it takes up less room on the questionnaire. The other is shown on the web page.

References

Unpublished at this time.

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English Participant Satisfaction Survey

U. S. Diabetes *Conversation Map*® Group Education Participant Survey

Instructions
This survey should be completed by persons with Type 2 Diabetes who are enrolled in today's diabetes group education *Conversation Map* class. Friends or family members of the person with diabetes attending today do not complete the survey.

Purpose of the Survey
This survey is designed to capture your experiences, interactions and satisfaction with today's class. Your feedback will be used to better understand diabetes education. Your responses will be kept confidential. Please be honest.

Today's Date: _____

1. Which U.S. Diabetes *Conversation Map* tool was used today in your group education class?
¨ On the Road to Better Managing Your Diabetes
¨ Diabetes and Healthy Eating
¨ Monitoring Your Blood Glucose Results
¨ Continuing Your Journey with Diabetes

2. Please mark (X) the response that best describes your experiences TODAY.

	1	2	3	4	5
a. The class was interactive, with lots of discussion among the participants.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
b. For the most part, the discussion was relevant to my own life.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
c. I learned new health facts that can be used to manage diabetes.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
d. I felt comfortable sharing with other people in the class.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
e. I learned a lot from the group discussion about how to manage diabetes.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
f. As a result of today's class, I know that people can successfully manage their Type 2 Diabetes.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
g. Today's class gave me ideas on how to reach my personal health goals.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
h. I would recommend this class to a friend or family member in need.	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree

English Participant Satisfaction Survey (continued)

3. Not including today's class, check ALL the ways you have used to learn about diabetes.
❑ One-on-one diabetes education with a health educator or health care provider
❑ U.S. Diabetes *Conversation Map* class
❑ Other small group diabetes education class (no use of the Map tools)
❑ Diabetes education video or DVD
❑ Internet
❑ No other ways

4. Check the ONE diabetes education experience that worked best for you.
❑ One-on-one diabetes education with a health educator or health care provider
❑ U.S. Diabetes *Conversation Map* class
❑ Other small group diabetes education class (no use of the Map tools)
❑ Diabetes education video or DVD
❑ Internet

Please explain why this method worked best for you?

5. Please identify your ethnicity.
❑ Hispanic or Latino
❑ Not Hispanic, Not Latino

6. Please identify your race. Check all that apply.
❑ American Indian or Alaska Native
❑ Asian
❑ Black or African American
❑ Native Hawaiian or Other Pacific Islander
❑ White

7. How long have you been diagnosed with Type 2 Diabetes?
_____ Months _____ Years OR ❑ Not diagnosed

8. What did you like least about today's class?

9. What did you like most about today's class?

10. Any other comments or concerns about today's class?

THANK YOU. YOUR INPUT IS VALUED! *Map Participant, EDGE Project, 2011*

Spanish Participant Satisfaction Survey

Encuesta del Participante
Grupo de Educación sobre la Diabetes Usando el *Mapa de Conversación* de Estados Unidos

Instrucciones
Esta encuesta se debe de completar solo por los participantes que tienen el diabetes tipo 2 y además que están inscritos en este grupo educativo sobre la Diabetes. Los amigos y familiares del participante que tiene diabetes que nos acompañan hoy no tienen que llenar la encuesta.

Propósito de la encuesta
Esta encuesta tiene el fin de que describas sus experiencias, interacciones y satisfacciones con el grupo educativo sobre la diabetes. Su opinión se usara para entender mejor la educación de la diabetes. Sus respuestas serán confidenciales. Favor de decirnos la verdad. Gracias.

Fecha de Hoy: _____

1. ¿Qué *Mapa de Conversación* fue utilizado hoy en su grupo de educación?

❑ On the Road to Better Managing Your Diabetes Map
❑ Monitoring Your Blood Glucose Map
❑ Diabetes and Healthy Eating Map
❑ Continuing Your Journey with Diabetes

2. Favor de marcar con (X) la respuesta que describa sus experiencia HOY con este grupo educativo

	1	2	3	4	5
a. La clase fue bastante interactiva con mucha participación y discusión entre los participantes	Estoy muy en desacuerdo	No estoy de acuerdo	No estoy seguro	Estoy de acuerdo	Estoy muy de acuerdo
b. En general los temas de discusión se relacionan a mi propia vida	Estoy muy en desacuerdo	No estoy de acuerdo	No estoy seguro	Estoy de acuerdo	Estoy muy de acuerdo
c. Aprendí información y hechos de la salud que puedo usar para manejar mi diabetes	Estoy muy en desacuerdo	No estoy de acuerdo	No estoy seguro	Estoy de acuerdo	Estoy muy de acuerdo
d. Compartiendo con las otras personas en la clase	Estoy muy en desacuerdo	No estoy de acuerdo	No estoy seguro	Estoy de acuerdo	Estoy muy de acuerdo
e. Yo aprendí mucho de la discusión en el grupo sobre cómo manejar mi diabetes	Estoy muy en desacuerdo	No estoy de acuerdo	No estoy seguro	Estoy de acuerdo	Estoy muy de acuerdo
f. Como resultado de esta clase, yo se que las personas pueden manejar su diabetes tipo 2	Estoy muy en desacuerdo	No estoy de acuerdo	No estoy seguro	Estoy de acuerdo	Estoy muy de acuerdo
g. Esta clase me dio una idea de cómo alcanzar mis metas personales.	Estoy muy en desacuerdo	No estoy de acuerdo	No estoy seguro	Estoy de acuerdo	Estoy muy de acuerdo
h. Yo le recomendaría esta clase a una amistad o a un miembro de mi familia que lo necesitara.	Estoy muy en desacuerdo	No estoy de acuerdo	No estoy seguro	Estoy de acuerdo	Estoy muy de acuerdo

Spanish Participant Satisfaction Survey (continued)

3. Sin incluir la clase de hoy, marque todas las maneras que usted ha utilizado para aprender sobre el diabetes.
❑ Clases de educación individual uno a uno con un educador de salud o un medico
❑ Clase del *Mapa de Conversación* Diabético de Estados Unidos
❑ Otro grupo pequeño de clases del diabetes (sin el uso del mapa)
❑ Video o DVD sobre la educación de la Diabetes
❑ Internet
❑ De ninguna clase

4. Cheque cual es la experiencia educativa de la diabetes que funciona mejor para usted (SOLO UNO)
❑ Clases de educación individual uno a uno con un educador de salud o un médico
❑ Clase de grupo de educación de diabetes usando el Mapa de Conversación de EEUU
❑ Otro grupo pequeño de clases del diabetes (sin el uso del mapa)
❑ Video o DVD sobre la educación de la Diabetes
❑ Internet
¿Por favor explique porque este método funciono mejor para usted?

5. Por favor indique su etnicidad.
❑ Hispano o Latino
❑ No soy Hispano o Latino

6. Favor identificar su raza, marque todas las que apliquen.
❑ Indio Americano o Nativo de Alaska
❑ Asiático
❑ Negro o Áfrico Americano
❑ Nativo de Hawai u otra isla del Pacífico
❑ Blanco

7. ¿Que tanto tiempo hace que le diagnosticaron el diabetes tipo 2?
_____ Meses _____ Años O ❑ No me han diagnosticado

8. ¿Que es lo que menos que le gusto de la clase de hoy?

9. ¿Que es lo mas que le gusto de la clase de hoy?

10. ¿Cualquier comentario o preguntas sobre la clase de hoy?

¡Gracias! Valoramos su participación y su opinión. ***Map Participant, EDGE Project, 2010***

English Participant Demographics and Self-Rating Questionnaire

General Health

1. In general, would you say your health is:

(Circle one)

Excellent 1

Very good 2

Good 3

Fair 4

Poor 5

Are you married? □Yes □No

What country are you from? _____

Sex: □Male □Female

What is your age? _____

English Participant Demographics and Self-Rating Questionnaire (continued)

Daily Activities

During the past **week**, how much… *(Circle one)*

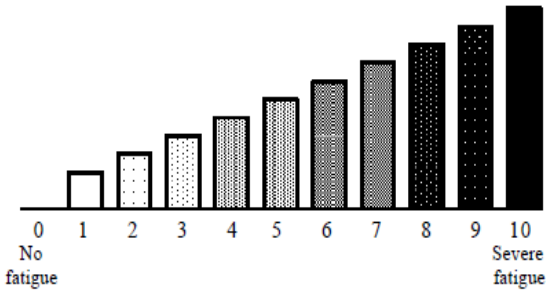
	Not at all	Slightly	Moderately	Quite a bit	Almost totally
1. Has your health interfered with your normal social activities with family, friends, neighbors or groups?	0	1	2	3	4
2. Has your health interfered with your hobbies or recreational activities?	0	1	2	3	4
3. Has your health interfered with your household chores?	0	1	2	3	4
4. Has your health interfered with your errands and shopping?	0	1	2	3	4

Do you have?

Do you have a machine to measure your blood sugar (glucose) level? □Yes □No

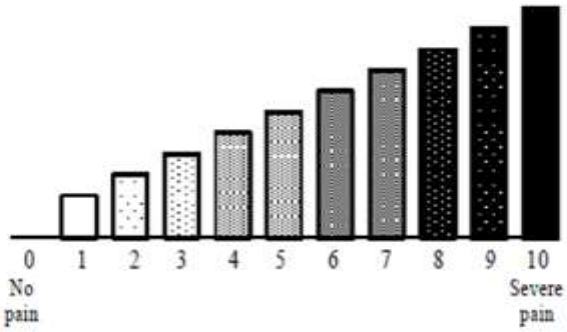
On how many days in the **last week** did you measure your blood sugar level? *Please fill with a "0" or other number.* _____ days

We are interested in learning whether or not you are affected by fatigue. Please *circle* the *number* below that describes your **fatigue** in the **past 2 weeks**:

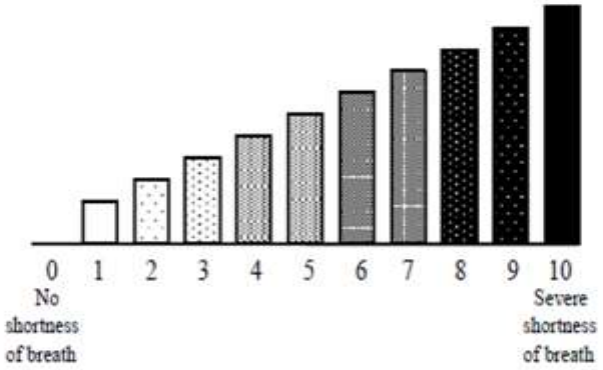


English Participant Demographics and Self-Rating Questionnaire (continued)

6. We are interested in learning whether or not you are affected by pain. Please *circle* the *number* below that describes your **pain** in the **past 2 weeks.**



7. We are interested in learning whether or not you are affected by shortness of breath. Please *circle* the *number* below that describes your **shortness of breath** in the **past 2 weeks:**



Please circle the ***highest*** year of school completed:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
(primary) *(high school)* *(college/university)* *(graduate school)*

Spanish Participant Demographics and Self-Rating Questionnaire

Generalmente, ¿Ud. diría que su salud es … ? *(Por favor, marque sólo una respuesta)*

Excelente 1

Muy buena 2

Buena..... 3

Regular 4

Mala 5

¿Casada (o)? □Sí □No

¿De qué país es usted? _____

Sexo: □Hombre □Mujer

¿Cuantos años tiene usted? _____

Spanish Participant Demographics and Self-Rating Questionnaire (continued)

Durante **la última semana**, ¿cuánto ha interferido su salud en lo siguiente?

	En nada	Un poco	En forma moderada	La mayor parte del tiempo	Todo el tiempo
1. En sus actividades normales con sus familiares, amigos, vecinos o grupos	0	1	2	3	4
2. En sus actividades recreativas o pasatiempos	0	1	2	3	4
3. En sus quehaceres domésticos (tareas del hogar)	0	1	2	3	4
4. En sus mandados/recados y compras	0	1	2	3	4

¿Tiene usted?

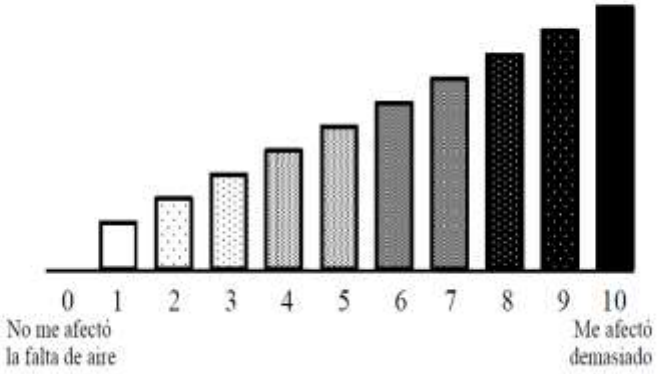
1. ¿Tiene Ud. una máquina para medir el nivel de azúcar (glucosa) en la sangre? o Sí o No

2. ¿Cuántos días de la última semana se hizo la prueba del nivel de azúcar en la sangre? *Por favor llene con "0" u otro número.* _____ días

Spanish Participant Demographics and Self-Rating Questionnaire (continued)

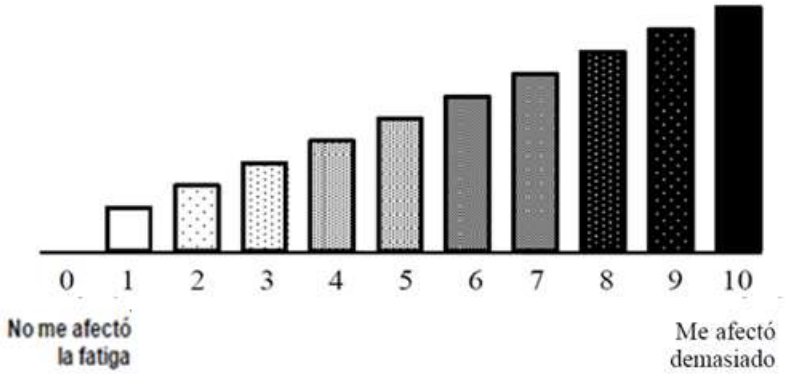
La falta de aire

Por favor marque en la escala de abajo el número que mejor describa cómo le afectó la falta de aire para respirar, debido a su enfermedad, durante la última semana:



La fatiga

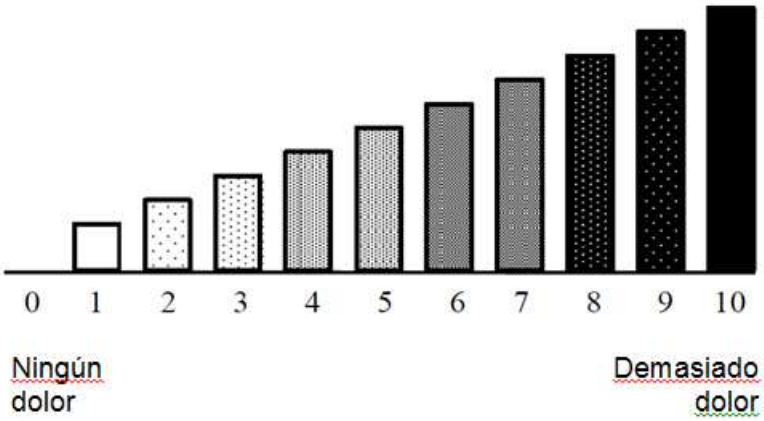
Por favor marque en la escala de abajo el número que mejor describa cómo le afectó la fatiga o cansancio, debido a su enfermedad, durante la última semana:



Spanish Participant Demographics and Self-Rating Questionnaire (continued)

Su dolor

Por favor marque en la escala de abajo el número que mejor describa la intensidad de su dolor, debido a su enfermedad, durante la última semana:



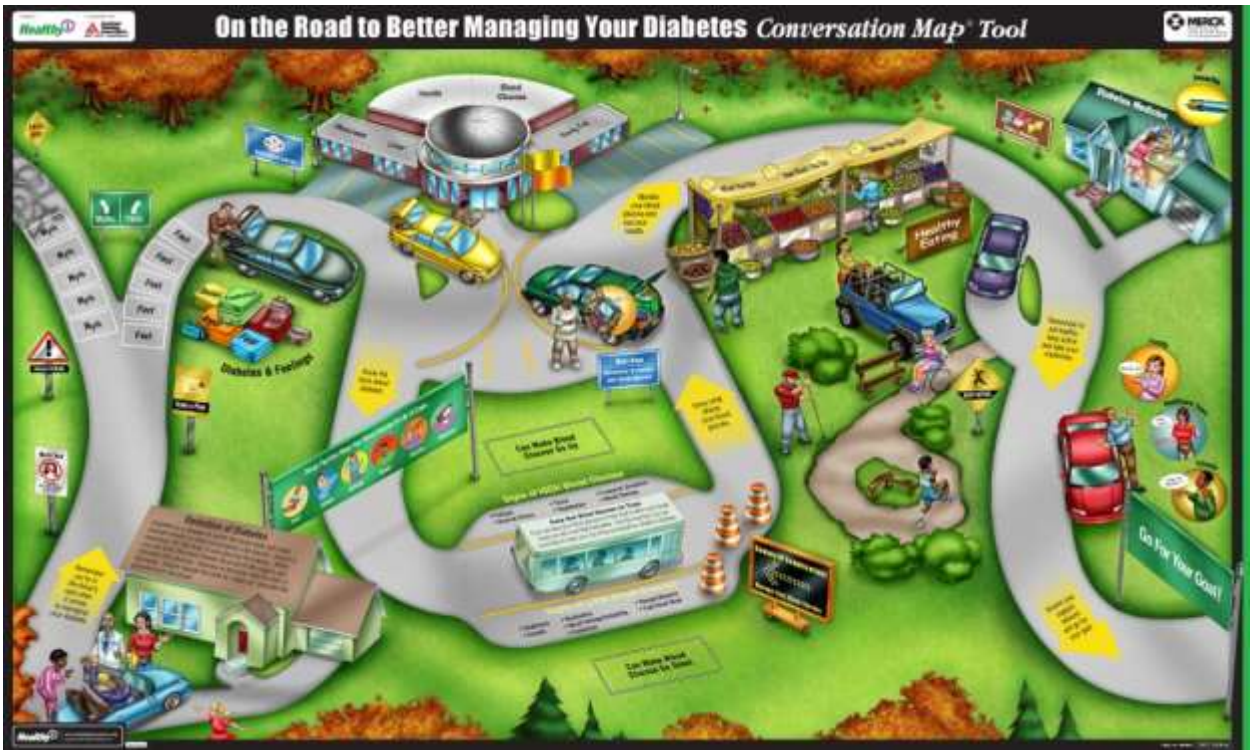
La escuela

Marque abajo el número que indica cuántos años de escuela completó.

0 1 2 3 4 5 6	7 8 9 10 11 12	13 14 15 16	17 18 19 20 21 22
básico (primaria)	*secundaria*	*superior*	*maestría/doctorado*

Appendix C. DSME Program Materials

Diabetes Conversation Map, English and Spanish



Class Flyer

¡Los espacios son limitados, solo serán 10 personas!

¡Refrigerios y almuerzo!

¡Tarjetas de dinero para que haga compras en Walmart!

¡Únase a la conversación!

- Usted es un paciente de la Care-A-Van, mayor de 18 años.
- Usted tiene diabetes
- Usted habla español

Empezaremos a las 9 en punto. Llegue a las 8:30 am por favor. Terminaremos a las 2:30 pm.

Favor verificar la glucosa de su sangre en ayunas en su hogar en o antes de la mañana de Octubre 31 y traer los resultados.

¡Participe en una clase sobre la Diabetes con Lisa Krieg y una intérprete!

¿Cómo?

- Por favor llame al # (804) 239-0084
- Tenga a mano su tarjeta azul para Care-A-Van.
- Deje
  - su Nombre,
  - su código de identificación que aparece en su tarjeta azul, y
  - su Número de Teléfono para Lisa Krieg.

¿Cuándo? Lunes el 31 de octubre, 2016, 8:30 am - 2:30 pm.

¿Dónde? Ramsey Memorial United Methodist Church, 5900 Hull Street Rd., Richmond, VA 23224

¡Muchas gracias!

DSME Training

I. Two professional Spanish interpreters (BBIs) reviewed the Spanish Facilitator Guide and the Spanish version of the Conversation Map guide (see Supplemental Materials) one week prior to the scheduled intervention.

II. The BBIs reviewed each of the following:

   a. Demographics questionnaire, knowledge and self-efficacy pretests in Spanish (75 minutes)

   b. 2-hour DCM intervention (120 minutes)

   c. Knowledge and self-efficacy post-tests, participant satisfaction survey in Spanish (45 minutes)

III. The BBIs completed a post-intervention survey.

Class Outline

Refer to Supplemental Materials for details of each lettered section.

I. Snack/coffee/water.

II. Demographics/self-assessment, knowledge and self-efficacy pre-test (see Appendix B) (**1 hour**).

III. Section A. Introduction, ***Conversation Topics***, review the map (**10 minutes**)

IV. Section B. What is Diabetes, Type 1 and Type 2, ***Myth or Fact*** cards (**15 minutes**)

V. Section C. Emotions (**15 minutes**)

VI. Section D. Glucose/targets, Insulin, ***Causes of High and Low Blood Glucose*** (**20 min)**

VII. Section F. Managing Glucose with Healthy Eating (**10 minutes**)

VIII. Section G. Keeping Active (**15 minutes**)

IX. Section I. Conclusion **(5 minutes)**

X. Posttests: Knowledge, Self-efficacy, Participant Satisfaction (see Appendix B) (**30 minutes).**

XI. Snacks: Decaf coffee, artificial sugar sweeteners, low-carbohydrate creamer option; bottles of water.

Class Handouts

Each participant was given a yellow folder containing all of the following:

Ensalada de Pollo y Tomatillo

Prepárela un día antes para un delicioso almuerzo en el trabajo.

Rinde 6 porciones. *1 taza por porción.*

Tiempo de preparación: 20 minutos

Aderezo

- 1 taza de tomatillos sin cáscara, cortados en cuartos
- 3 cucharadas de aderezo italiano de bajas calorías
- 1 chile Anaheim fresco, sin semillas y picado
- ¼ cucharadita de pimienta negra molida (*ground black pepper*)

Ensalada

- 2 tazas de pollo o pavo cocido y picado
- 1 taza de pimiento rojo picado
- 1 taza de granos de elote, descongelados
- 1 taza de zanahoria picada
- 4 cebollas verdes, cortadas en rebanadas
- ¼ taza de cilantro fresco, picado

Preparación

1. En el vaso de una licuadora o procesador de alimentos, haga un puré con los tomatillos, el aderezo, el chile Anaheim y la pimienta negra molida, y déjelo aparte.
2. Mezcle todos los ingredientes de la ensalada en un tazón grande y mézclelos.
3. Agregue el aderezo a la ensalada y mezcle bien.
4. Cubra y refrigere durante 20 minutos o prepare un día antes para que los sabores se mezclen.
5. Sirva sobre hojas de lechuga en platos o en tazones individuales.

ALMUERZO 15

Información nutricional por porción: Calorías 141; Carbohidratos 10 g; Fibra Dietética 2 g; Proteínas 15 g; Grasa Total 4 g; Grasa Saturada 1 g; Grasa Trans 0 g; Colesterol 33 mg; Sodio 148 mg

Almidón

Arroz con Frijoles Negros & Tocineta

Cuba

Cuando niña unos vecinos cubanos compartían de éste arroz con nosotros. Siempre me gustó mucho, y hoy en día lo preparo para mi familia.

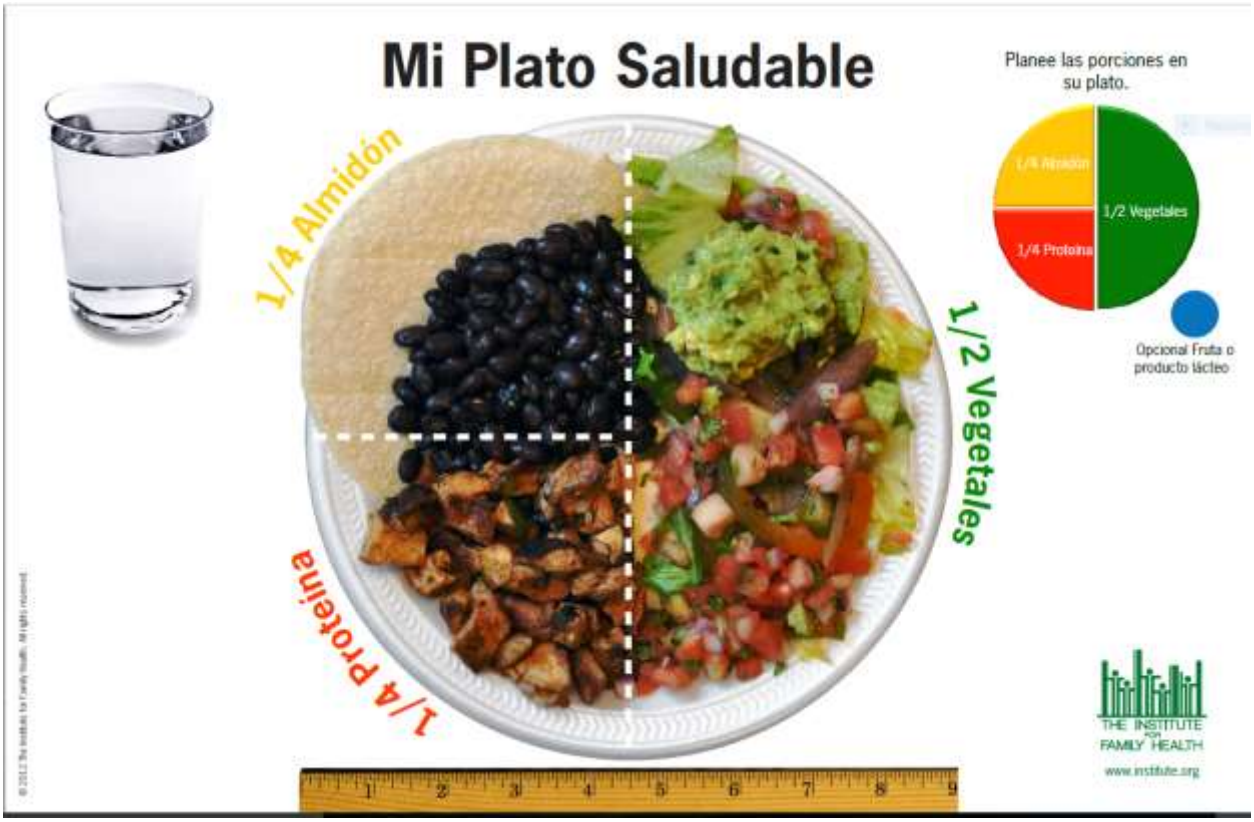
Porciones: 4 **Tamaño de una Porción: 1 taza**

- 2 tazas agua
- 1 cda aceite canola
- 1/4 taza cebolla picada fina
- 3 dientes de ajos machacados
- 1/4 taza pimiento dulce, rojo y/o verde
- 2 cdas cilantro picado
- 1 taza arroz, grano largo — BROWN
- 1/4 taza salsa tomate
- 1 taza habichuelas negras enlatados, enjuagados y escurridos 2 CUPS
- 1/2 cdta de sal
- 4 lonjas de tocineta, cocidas y en pedazos, escurridas
- 6 tiras de pimiento morrón español

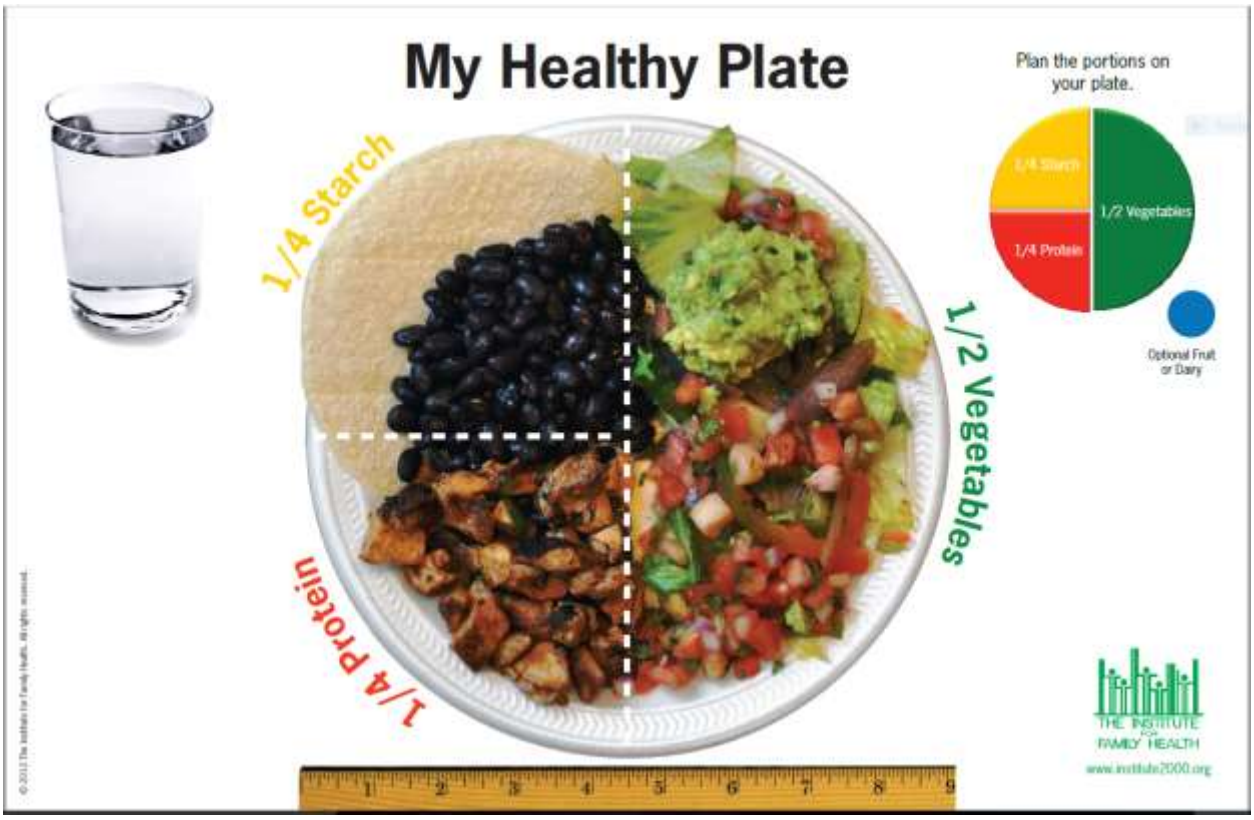
1. Ponga agua a hervir. En un sartén mediano caliente el aceite a fuego mediano. Sofría por 2–3 minutos, la cebolla, el ajo, el pimiento, el cilantro, y el arroz.
2. Añada la salsa de tomate y las habichuelas. Mezcle y cocine por 2–3 minutos. Añada el agua hirviendo, la sal, y la tocineta y cocine a fuego moderado hasta que se evapore la mayor parte del agua.
3. Cubra y cocine por 10 minutos, revuelva solamente una o dos veces, hasta que el arroz este tierno. Adorne con tiras de pimiento morrón español.

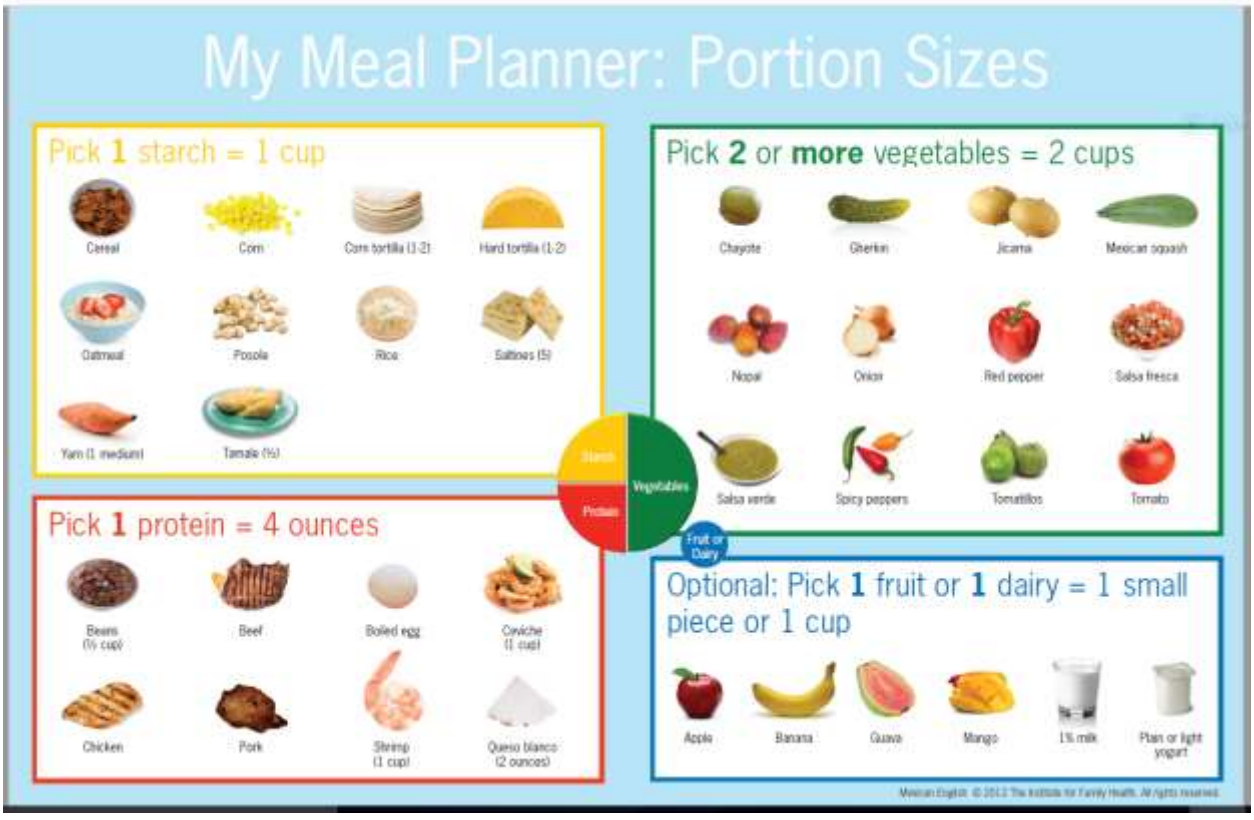
Intercambios
4 Almidón
1 Grasa

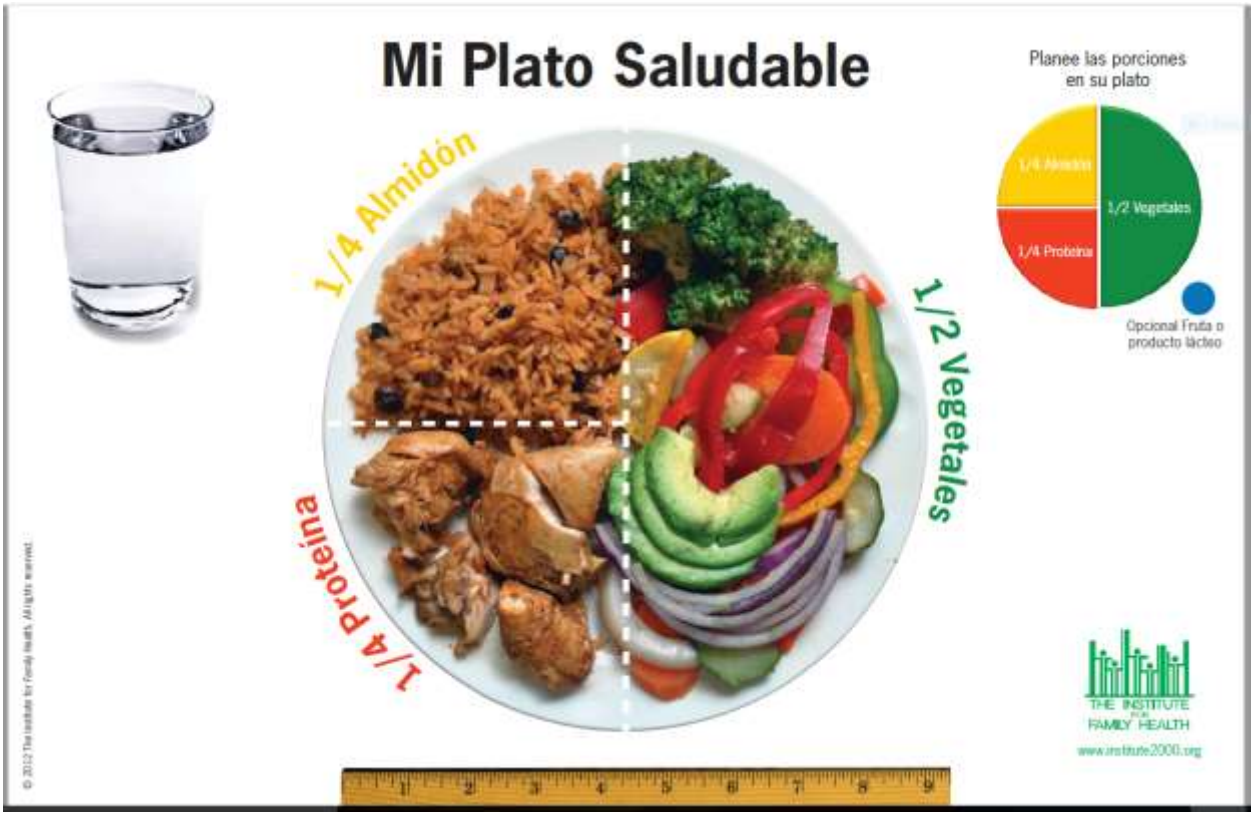
Calorías	350
Calorías de la Grasa	67
Grasa Total	7 g
Grasa Saturada	1 g
Colesterol	5 mg
Sodio	583 mg
Carbohidrato	58 g
Fibra Dietética	8 g
Azúcares	4 g
Proteína	12 g


Mi Plato Saludable
Planee las porciones en su plato.
1/4 Almidón
1/2 Vegetales
1/4 Proteína
1/4 Almidón
1/2 Vegetales
1/4 Proteína
Opcional Fruta o producto lácteo
THE INSTITUTE FOR FAMILY HEALTH
www.institute.org

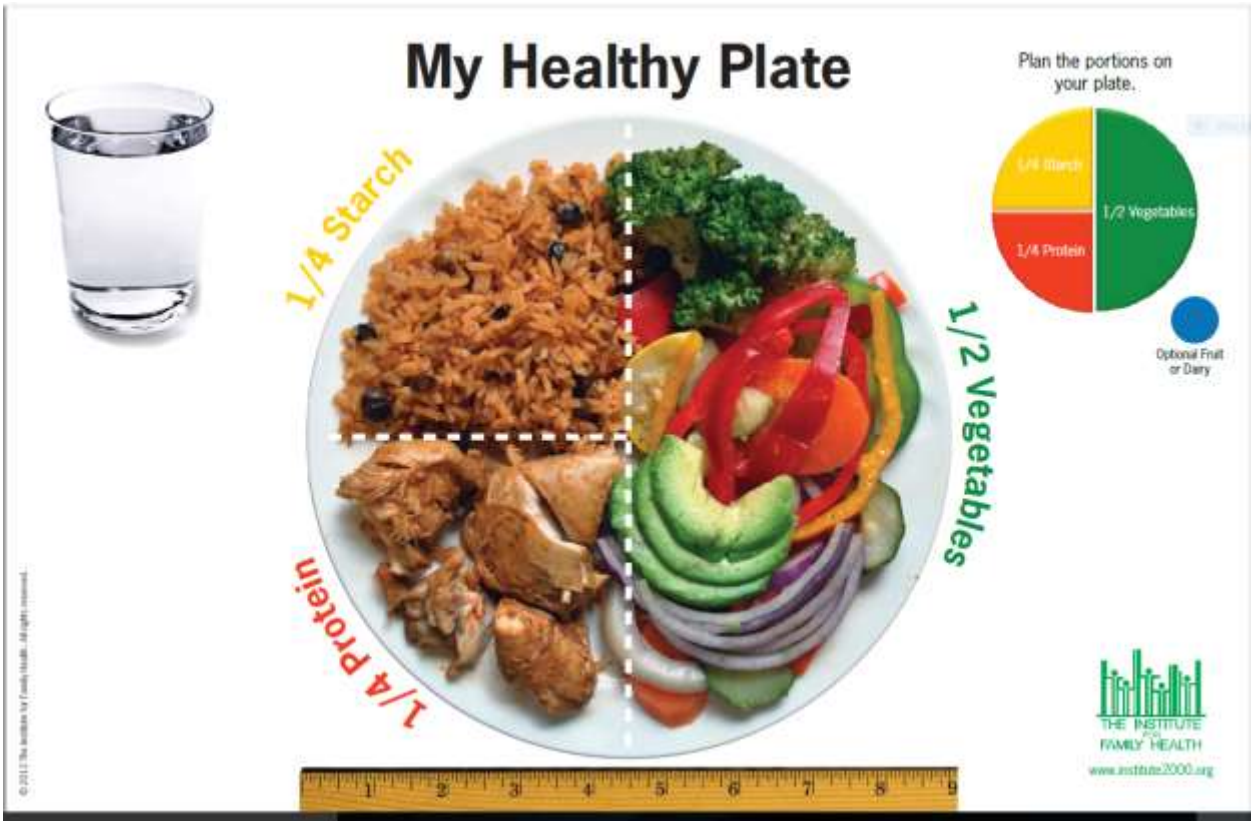

Mi Plan para Comer Saludable: Porciones Sugeridas
Escoja 1 almidón = 1 taza
Cereal
Maíz
Tortilla de maíz (1-2)
Tostada de maíz (1-2)
Avena
Pozole
Arroz
Galletas de soda (5)
Camote (1 mediano)
Tamal (½)
Escoja 2 o más vegetales = 2 tazas
Chayote
Pepinillo
Jícama
Calabacita
Nopal
Cebolla
Pimiento rojo
Salsa fresca
Salsa verde
Chiles picantes
Tomatillos
Tomate
Escoja 1 proteína = 4 onzas
Frijoles (½ cup)
Carne de res
Huevo cocido
Ceviche (1 taza)
Pollo
Carne de cerdo
Camarones (1 taza)
Queso blanco (2 onzas)
Opcional: Escoja 1 fruta o 1 producto lácteo = 1 pedazo pequeño o 1 taza
Manzana
Plátano
Guayaba
Mango
Leche 1%
Yogur de dieta o descremado


My Healthy Plate
Plan the portions on your plate.
1/4 Starch
1/2 Vegetables
1/4 Protein
Optional Fruit or Dairy
1/4 Starch
1/2 Vegetables
1/4 protein
THE INSTITUTE FOR FAMILY HEALTH


My Meal Planner: Portion Sizes
Pick 1 starch = 1 cup
Cereal
Corn
Corn tortilla (1-2)
Hard tortilla (1-2)
Oatmeal
Posole
Rice
Saltines (5)
Yam (1 medium)
Tamale (½)
Pick 2 or more vegetables = 2 cups
Chayote
Gherkin
Jicama
Mexican squash
Nopal
Onion
Red pepper
Salsa fresca
Salsa verde
Spicy peppers
Tomatillos
Tomato
Starch
Vegetables
Protein
Fruit or Dairy
Pick 1 protein = 4 ounces
Beans (½ cup)
Beef
Boiled egg
Ceviche (1 cup)
Chicken
Pork
Shrimp (1 cup)
Queso blanco (2 ounces)
Optional: Pick 1 fruit or 1 dairy = 1 small piece or 1 cup
Apple
Banana
Guava
Mango
1% milk
Plain or light yogurt


Mi Plato Saludable
1/4 Almidón
1/2 Vegetales
1/4 Proteína
Planee las porciones en su plato
1/4 Almidón
1/2 Vegetales
1/4 Proteína
Opcional Fruta o producto lácteo
THE INSTITUTE FOR FAMILY HEALTH
www.institute2000.org


Mi Plan para Comer Saludable: Porciones Sugeridas
Escoja 1 almidón = 1 taza
Casabe (½ pedazo)
Cereal
Tostones (3-4 pedazos)
Pan italiano (2 pedazos pequeños)
Mangú
Avena
Plátano
Ensalada de papa
Arroz
Galletas de soda (5)
Pan integral (1-2 rebanadas)
Batata (1 mediana)
Escoja 2 o más vegetales = 2 tazas
Remolacha
Brócoli
Repollo
Zanahoria
Coliflor
Chayote
Pepino
Berenjena
Tiernas verdes
Lechuga
Molondrón/ Quimbombó
Calabaza/ Auyama
Pimiento rojo
Tomate
Escoja 1 proteína = 4 onzas
Habichuelas (½ taza)
Carne de res
Huevo hervido
Pollo
Queso bajo en grasa (2 onzas)
Pescado
Mantequilla de maní (1-2 cucharadas)
Nueces (¼ taza)
Carne de cerdo
Opcional: Escoja 1 fruta o 1 producto lácteo = 1 pedazo pequeño o 1 taza
Banana
Mango
Lechosa
Piña
Leche 1%
Yogur de dieta o descremado


My Healthy Plate
Plan the portions on your plate.
1/4 Starch
1/2 Vegetables
1/4 Protein
Optional Fruit or Dairy
1/4 Starch
1/2 Vegetables
1/4 protein
THE INSTITUTE FOR FAMILY HEALTH
www.institute2000.org


My Meal Planner: Portion Sizes
Pick 1 starch = 1 cup
Cassabe (½ piece)
Cereal
Fried plantains (3-4 pieces)
Italian bread (2 small pieces)
Mango
Oatmeal
Plantain
Potato salad
Rice
Saltines (5)
Wheat bread (1-2)
Yam (1 medium)
Pick 2 or more vegetables = 2 cups
Beets
Broccoli
Cabbage
Carrot
Cauliflower
Chayote
Cucumber
Eggplant
Green beans
Lettuce
Okra
Pumpkin
Red pepper
Tomato
Pick 1 protein = 4 ounces
Beans (½ cup)
Lean steak
Boiled egg
Chicken
Low fat cheese (2 ounces)
Fish
Peanut butter (1-2 tbsp)
Nuts (½ cup)
Pork
Optional: Pick 1 fruit or 1 dairy = 1 small piece or 1 cup
Banana
Mango
Papaya
Pineapple
1% milk
Plain or light yogurt

TAMAÑO DE LAS PORCIONES
CUANDO NO PUEDE MEDIR SUS ALIMENTOS

Sus manos como herramientas...
La mejor manera de saber la cantidad de alimentos que está comiendo, o el tamaño de sus porciones, es usando tazas y cucharas de medir o una balanza o pesa. Pero algunas veces, cuando come fuera por ejemplo, no puede hacerlo. Aquí tiene varias maneras de usar sus manos para saber cuánto está comiendo.* Los tamaños de las porciones en cada grupo de alimentos usan como guía la mano de una *mujer* adulta.

Un puño cerrado = 8 onzas líquidas
- Bebidas frías y calientes

Dos manos, ahuecadas = 1 taza
- Cereal frío
- Sopa
- Ensalada verde (lechuga o espinaca)
- Platos mixtos (chili, guiso, estofado, macarrones con queso)
- Comida china

Una mano, ahuecada = 1/2 taza
- Pasta, arroz
- Cereal frío (avena, farina)
- Ensalada de frutas, bayas, salsa de manzana
- Salsa de tomate o para espagueti
- Frijoles o habichuelas (preparados o enlatados)
- Ensalada de papas o de col ("coleslaw")
- Puré de papas
- Requesón o "cottage cheese"
- Pudines, gelatina

Palma de la mano = 3 onzas
- Carnes cocinadas (hamburguesa, pechuga de pollo, filete de pescado, lomo de cerdo)
- Pescado enlatado (atún, salmón)

Dos pulgares juntos = 1 cucharada
- Mantequilla de maní
- Aderezo para ensaladas
- Crema agria ("sour cream")
- Dips
- Crema batida o merengue
- Salsas dulces
- Margarina
- Queso crema
- Mayonesa

*Adaptado de MyPyramid.gov. Esta hoja es sólo una guía.
Las cantidades de alimentos en su plan de comida pueden ser diferentes.
Provisto como un servicio educativo GRATIS en www.learningaboutdiabetes.org.

PORTION SIZES

WHEN YOU CAN'T MEASURE YOUR FOOD

Your Helpful Hands...

The best way to find out how much of a food you are eating, or your portion size, is to use measuring cups, spoons or a scale. Sometimes, such as when you eat out, you can't do this. Here are a number of ways you can use your hands to help you find out about how much you are eating.* The portion sizes in each food group use an adult *woman's* hand as a guide.

One fist clenched = 8 fluid ounces

- Cold and hot beverages

Two hands, cupped = 1 cup

- Breakfast cereal
- Soup
- Green salads (lettuce or spinach)
- Mixed dishes (chili, stew, macaroni and cheese)
- Chinese food

One hand, cupped = 1/2 cup

- Pasta, rice
- Hot cereal (oatmeal, farina)
- Fruit salad, berries, applesauce
- Tomato or spaghetti sauce
- Beans (cooked or canned)
- Cole slaw or potato salad
- Mashed potatoes
- Cottage cheese
- Pudding, gelatin

Palm of hand = 3 ounces

- Cooked meats (hamburger patty, chicken breast, fish fillet, pork loin)
- Canned fish (tuna, salmon)

Two thumbs together = 1 tablespoon

- Peanut butter
- Salad dressing
- Sour cream
- Dips
- Whipped topping
- Dessert sauces
- Margarine
- Cream cheese
- Mayonnaise

*Adapted from MyPyramid.gov. This handout is only a guide. The amounts of foods in your meal plan may be different.

Appendix D. Human Subjects Protections

Notice of IRB Exemption

July 26, 2016

BON SECOURS
RICHMOND HEALTH SYSTEM
Bon Secours Virginia Health System

Lisa T. Krieg, MSN, RN, FNP-BC, BC-ADM
Nurse Practitioner, Board Certified - Diabetes Management
Bon Secours Richmond Health System | Mission | Care-A-Van
One Monument Avenue Bldg. | 413 Stuart Circle, Suite #210
Richmond, VA 23220

RE: DNP Project: Culturally Tailored Diabetes Education for Hispanic Americans

Dear Lisa,

Thank you for your proposal submission pertaining to the above-referenced DNP project. The Bon Secours Richmond Health System Institutional Review Board (IRB) only has approval and oversight responsibilities for human subjects research proposals. Pursuant to this office's review of your proposal, it is determined that your project is not a human subjects research proposal, but an Evidence-Based Practice project. Accordingly, the IRB has no approval and oversight responsibilities in this instance. You may proceed with your project accordingly. Be sure to contact the Regulatory & Compliance Committee to see if there is a need for that committee's review of your data access and security plan.

Best wishes on the successful completion of your project and your DNP program. As a fellow Bon Secours colleague, I applaud you for developing such a quality project to enhance the Bon Secours Ministry, as well as reaching the end of your program. It is a wonderful achievement and we within Bon Secours are proud of you!

Please feel free to contact me if you have any questions.

Sincerely,

Mark F. Leep, MA, JD, MBA, CIP
Director, Research Participant Protection Program
Office of Research
Bon Secours Health System

8580 Magellan Parkway, Richmond, Virginia 23227 Good Help to Those in Need®

Determination of UVa Agent Form

UNIVERSITY of VIRGINIA IRB-HSR — Institutional Review Board for Health Sciences Research

DETERMINATION OF UVa AGENT FORM

INFORMATION ABOUT THIS FORM

- This form is to determine if UVa personnel are or are not considered to be working as an Agent* for UVa on this project.
- If it is determined that UVa personnel are considered to be working as an Agent* for UVa the study team will be required to submit an additional submission to the IRB-HSR, unless the project is determined to not involve human subject research. See Determination of Human Subject Research Form

***Agent-** all individuals (including students) performing institutionally designated activities or exercising institutionally delegated authority or responsibility.*

Enter responses electronically. Email the completed form to IRBHSR@virginia.edu for pre-review.

An IRB staff member will reply with any changes to be made.

Name of Individual to be Working on Project:	Lisa Krieg, MSN, RN, FNP-BC, BC-ADM
Email:	ltk8az@virginia.edu
Phone:	804-514-3131
UVa Messenger Mail Box #	
Project/Protocol Title if Known:	☐ Unknown or Title: Culturally Tailored Diabetes Education for Hispanic Americans
Explain your role in the project: (200 words or less)	I am the principal investigator.
Explain the reason for traveling to the outside institution.	The Bon Secours Care-A-Van is my place of employment. There is a large population of Hispanic patients with diabetes who prefer to speak Spanish.

INSTRUCTIONS: Complete the applicable option below:

Option A: Typically used by UVA personnel who are asked to assist with a research study after arriving at the non- UVA institution.

Answer the following questions:

☐Yes ☐No I was involved in the design of this research project.
☐Yes ☐No A UVa IRB has approved this research. IRB-HSR #
☐Yes ☐No Funding to conduct this research will come from UVa.
☐Yes ☐No The only reason I am traveling to this outside institution is to work on this research.
☐Yes ☐No Working on this research is required for my degree program.

I confirm that:

☐Yes ☐No I am a student, employee or faculty member of the University of Virginia.
☐Yes ☐No My work on this project will be overseen by the Principal Investigator and the IRB at the outside institution. This includes completing any training in human subject research protection as required by the outside IRB.
☐Yes ☐No I will communicate with the IRB and the Contracts Office, to determine what approvals may be needed, prior to receiving any data from the outside institution

Option B: Typically used by graduate students conducting their research outside of UVA.

I confirm that:

☒Yes ☐No I designed this research.
☒Yes ☐No I am a student, employee or faculty member of UVa but am employed by another institution.
☒Yes ☐No All subjects will be enrolled at this outside institution and all data will remain there.
☒Yes ☐No The research will be overseen by their IRB and, if applicable, their HIPAA Privacy Board. This includes completing any training in human subject research protections as required by the outside IRB.
☒Yes ☐No There is no funding for this study or if there is funding, it will be handled by the non-UVa institution at which I am employed.
☒Yes ☐No I have notified the outside IRB that a UVa IRB will not be overseeing my work. ATTACH COPY OF OUTSIDE IRB APPROVAL, OR DOCUMENTATION THAT IRB APPROVAL IS NOT NEEDED

Option C: Typically used by a person who will continue working on their research at their previous institution after transferring to UVA. Research protocol will not be opened to enroll additional subjects at UVA.

I confirm that:

☐Yes ☐No I am a student, employee or faculty member of UVa but was employed by another institution when the research was begun.

☐Yes ☐No All subjects were or will be enrolled at this outside institution and all data will remain there.

☐Yes ☐No The research will be overseen by a non- UVA IRB and, if applicable, the HIPAA Privacy Board of my previous institution. This includes completing any training in human subject research protections as required by the outside institution.

☐Yes ☐No There is no funding for this study or if there is funding, it will be handled by my previous institution.

☐Yes ☐No I have notified the IRB of Record that I have transferred to UVa and that a UVa IRB will not be overseeing my work on this research protocol.
ATTACH COPY OF OUTSIDE IRB APPROVAL.

FOR IRB-HSR OFFICE USE ONLY

☒ UVa personnel are not considered to be working as an Agent for UVa on this project.
No approvals from the UVa IRB-HSR are required.
UVA Tracking # 19282

☐ UVa personnel are considered to be working as an Agent for UVa on this project.
Submit a research application to the UVa IRB-HSR.

Joanna Faulconer Karen Mimms _____ 09/01/16_____
Signature of IRB Chair, Director or Designee Date

Project Approval from the Regulatory and Compliance Committee

REGULATORY AND COMPLIANCE WORKGROUP MEETING MINUTES

WebEx Call In Number: xxx-xxx-xxxx
WebEx Conference Code: xxxxxx xxxx#
Time: 8:00am – 10:00am
Date: September 29, 2016

Compliance Workgroup - xxxxxxx, xxxxxxxxxx, xxxxxxxxx

Invited Guests: xxxxxxxx, xxxxxxxxxxxxx, xxxxxxxxxxxx

	Item	Disposition	Presenter
	Krieg Proposal	**Approved**	**Lisa Krieg**
	XXXXXXX	**XXXXXXX**	**xxxxxxx**
	XXXXXX	**XXXXXXX**	**xxxxxxx** **xxxxxxx**
	XXXXXX	**XXXXXXX**	**xxxxxxx**
	XXXXXX	**XXXXXXX**	**xxxxxxx**
	XXXXXX	**XXXXXXX**	**xxxxxxx** **xxxxxxx** **xxxxxxx**
	XXXXXX	**XXXXXXX**	**xxxxxxx**
	XXXXXX	**XXXXXXX**	**xxxxxxx**
	XXXXXX	**XXXXXX**	**xxxxxxx**
	XXXXXX	**XXXXXX**	**xxxxxxx**

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Supplemental Materials

Table.S1.

Descriptive Statistics for the SKILLD Computed by SPSS

Descriptive Statistics

	N	Percentiles 25th	50th (Median)	75th
SKILLDpre	7	2.0000	3.0000	3.0000
SKILLDpost	7	3.0000	5.0000	5.0000

Note. SKILLD = Spoken Knowledge in Low Literacy in Diabetes scale. SKILLDpre = SKILLD score prior to the intervention. SKILLDpost = SKILLD score immediately after the intervention.

Table S2.

Participant Satisfaction Score per Response

Response	Score
A	4.57
B	4.71
C	4.86
D	4.86
E	5.00
F	4.86
G	4.86
H	5.00
Average:	**4.839**
Total:	96.8%

Satisfaction Survey
A. The class was interactive, with lots of discussion among the participants.
B. For the most part, the discussion was relevant to my own life.
C. I learned new health facts that can be used to manage diabetes
D. I felt comfortable sharing with other people in the class.
E. I learned a lot from the group discussion about how to manage diabetes.
F. As a result of today's class, I know that people can successfully manage their Type 2 Diabetes.
G. Today's class gave me ideas on how to reach my personal health goals.
H. I would recommend this class to a friend or family member in need.

Satisfaction Survey

A. The class was interactive, with lots of discussion among the participants.
B. For the most part, the discussion was relevant to my own life.
C. I learned new health facts that can be used to manage diabetes
D. I felt comfortable sharing with other people in the class.
E. I learned a lot from the group discussion about how to manage diabetes.
F. As a result of today's class, I know that people can successfully manage their Type 2 Diabetes.
G. Today's class gave me ideas on how to reach my personal health goals.
H. I would recommend this class to a friend or family member in need.

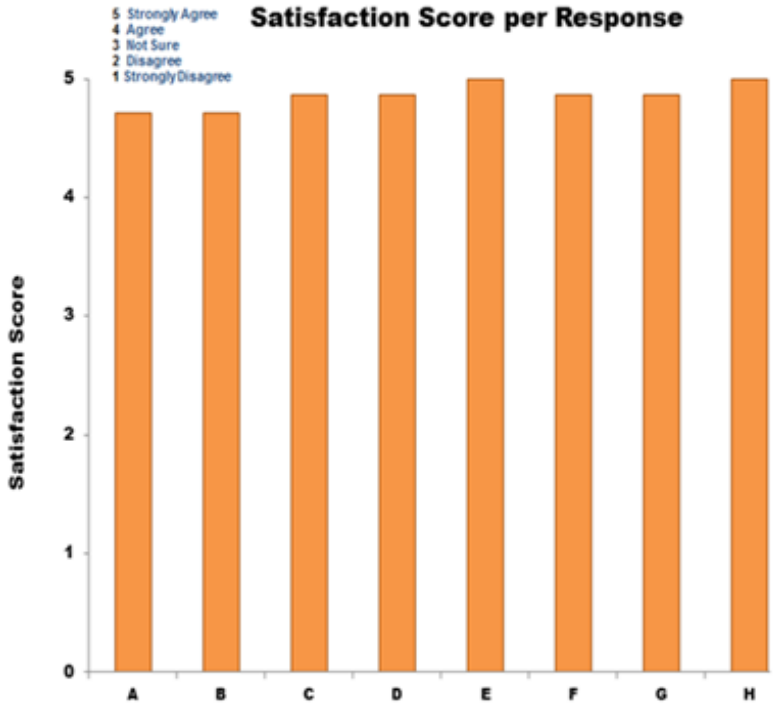


Figure S1. Participant satisfaction score per response. This provides an improved understanding of what the participants rated as "strongly agree." Possible scores ranged from 5 (strongly agree) to 1 (strongly disagree).

Permission to Use the Spoken Knowledge in Low Literacy in Diabetes (SKILLD) Scale

From: "Russell Rothman" <russell.rothman@Vanderbilt.Edu>
To: "Lisa Krieg" <ltk8az@virginia.edu>
Sent: Sunday, April 24, 2016 12:24:47 PM
Subject: RE: SKILLD scale permission to use (corrected)

Yes, you are welcome to use and adapt the SKILLD
Attached is the version I have from Pena-Purcell. I have also attached a version that was developed by another researcher.
Good luck
Russell

Russell Rothman, MD MPP
Professor, Internal Medicine, Pediatrics, & Health Policy
Assistant Vice Chancellor, Population Health Research
Chief, Internal Medicine & Pediatrics Section
Director, Center for Health Services Research
Center for Health Services Research
Suite 6100 Medical Center East
Vanderbilt University Medical Center
Nashville, TN 37232-8300
615-936-2149 (phone)
615-936-1269 (fax)

From: Lisa Krieg [mailto:ltk8az@virginia.edu]
Sent: Sunday, April 24, 2016 10:54 AM
To: Rothman, Russell
Subject: SKILLD scale permission to use (corrected)

Dr. Rothman,

I am writing to ask if I may have your permission to utilize your SKILLD scale in a Scholarly Project in order to meet the requirements for graduation in the Doctor of Nursing Practice program at the University of Virginia.

I would also need to request your permission to have your SKILLD scale translated into Spanish, as another nurse researcher (Pena-Purcell et al., 2014) has done previously.

I love its brief, simple, yet comprehensive and universally applicable approach to measuring knowledge in a low literacy population.

I am studying the knowledge change following delivery of a low-literacy Spanish diabetes education program for Mexican Americans with poor diabetes control in the Southeast United States.

Thank you for your consideration.

Lisa T. Krieg, MSN, RN, FNP-BC, BC-ADM
Doctor of Nursing Practice Student at the University of Virginia
ltk8az@virginia.edu

Cohen's Effect Size for the Spoken Knowledge in Low Literacy in Diabetes (SKILLD) .

The formula for calculating Cohen's effect size (*r*) (Pallant, 2016) is

$\boldsymbol{r = z/\sqrt{N}_{TOTAL}}$ where

r = Cohen's effect size [small = .1, medium = .3, large = .5 (Pallant, 2016)];

z = the absolute value of the *z* statistic from *Figure 2,* **2.041**; and

$\mathbf{N_{TOTAL}}$ = the total number of cases for $N_{SKILLDpre}$ and $N_{SKILLDpost}$ = 7+7=**14**

$$\boldsymbol{r = z/\sqrt{N}_{TOTAL}} = \frac{z}{\sqrt{14}} = \frac{2.041}{3.742} = .545$$

The SKILLD results may be written as follows (Pallant, 2016): A Wilcoxon Signed Ranks Test revealed a statistically significant increase in SKILLD knowledge scores following participation in the DSME program for SSHAs, $z = -2.041$, $p = .041$ (see Figure 1), with a large effect size ($r = .545$). The median score on the SKILLD increased from pre-program (*Mdn* = 3) to post-program (*Mdn* = 5) [see Table S1].

Approval of the Project by the Responsible Account Executive

This was required prior to any contact with the IRB.

From: Trinh, Khiet N
Sent: Monday, May 23, 2016 6:06 PM
To: Krieg, Lisa
Subject: RE: Project Proposal: Diabetes Conversation Maps

As the Responsible Accountable Executive, I approve.

I just remembered the chair of the IRB is Mark Leep, per our conversation.

thx

Khiet N. Trinh MD, MBA, CPE | Chief Medical Officer
Bon Secours St. Mary's Hospital | Administration
5801 Bremo Road | Richmond, VA | 23226
W: 804-281-8243 | F: 804-285-8327| E: khiet_trinh@bshsi.org

From: Krieg, Lisa
Sent: Monday, May 23, 2016 2:13 PM
To: Trinh, Khiet N
Subject: Project Proposal: Diabetes Conversation Maps

Dr. Trinh,
Thank you.

Lisa

Lisa T. Krieg, MSN, RN, FNP-BC, BC-ADM
Doctoral Candidate, University of Virginia
Nurse Practitioner, Board Certified - Diabetes Management
Bon Secours Richmond Health System | Mission | Care-A-Van
One Monument Avenue Bldg. | 413 Stuart Circle, Suite #210 | Richmond, VA 23220
Office: (804) 545-1920 Fax: (804) 545-1935 Lisa_Krieg@bshsi.org
Good Help to Those in Need®

Scholarly Practice Products

Written Process Protocol for IRB Waiver and Follow Up at PI's Health Care Facility

I. Obtain approval from the local Responsible Account Executive.

II. Contact the Director of the Research Participant Protection Program, Office of Research, requesting confirmation that proposal is "not a human subjects research proposal."

III. If the classification of the project is an Evidence-Based Practice Project, request a letter stating that the IRB "has no approval and oversight" for your project and that you may "proceed accordingly."

IV. Contact the Regulatory and Compliance Committee and request a review of the data access and security plan.

V. Meet with the doctorally-prepared nurse researcher to prepare a document that specifically addresses data access and security.

VI. Submit written document for review by a Board Member on the Regulatory and Compliance Committee.

VII. Revise written document.

VIII. Meet with advisor and board member.

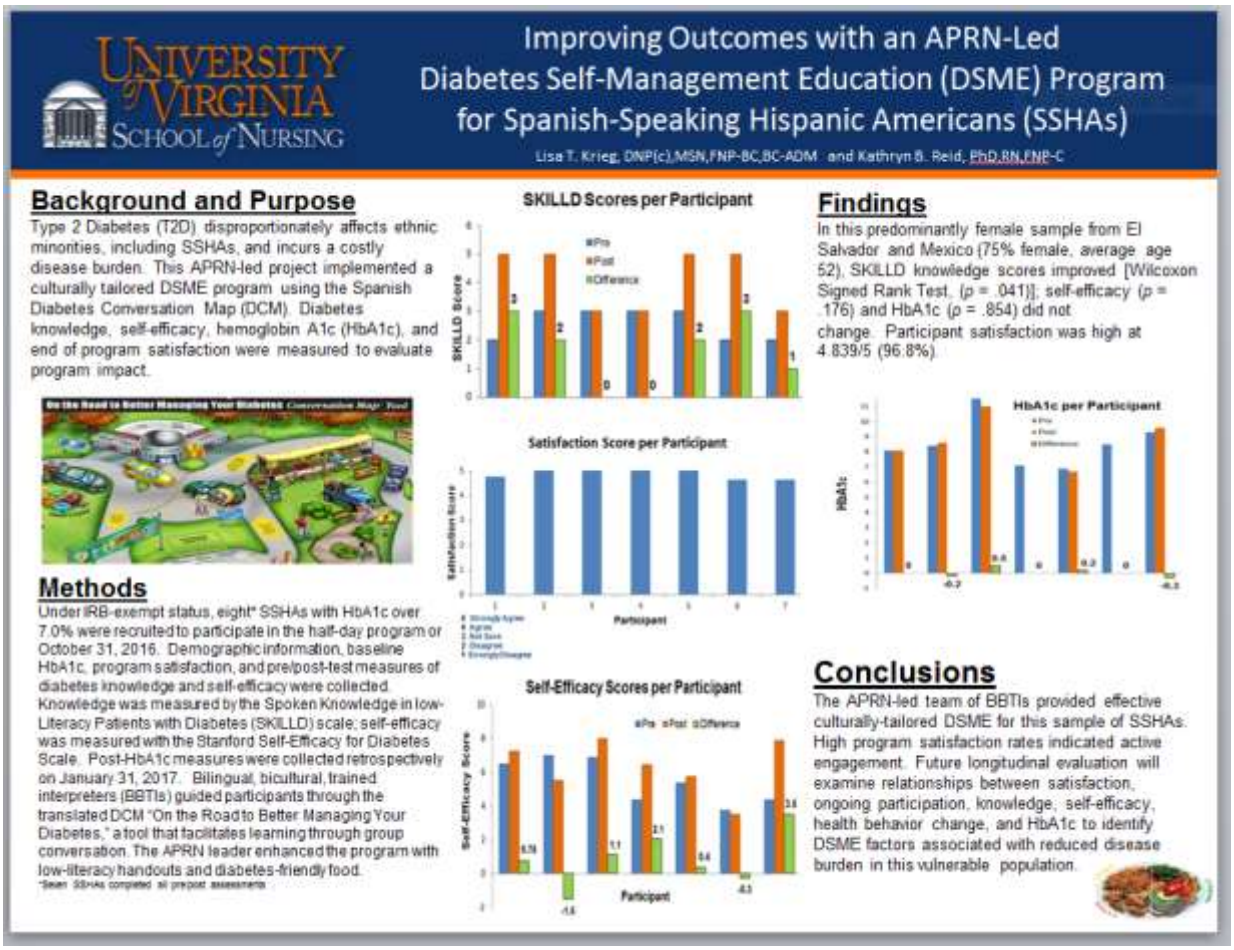
IX. Revise written document.

X. Schedule defense presentation for the Regulatory and Compliance Committee Board Meeting.

XI. Start the process early. The first two steps required more than two months; the whole process required more than four months.

Scholarly Practice Products

Virginia Council of Nurse Practitioners' (VCNP) Conference Poster



Evaluation Detail to Apply for IRB Exemption

This guide appeared in the EDGE project handbook (Herrman et al., 2012). In order to communicate this, the PI submitted a 53-page document. The project was then deemed to be IRB-exempt. This process took more than two months. A more streamlined process has been recommended (see Supplemental Materials, Written Process Protocol).

Informed Consent

For a number of reasons, an informed consent is not necessary for this evaluation. The completion of the participant post-session survey and the educator experience survey is voluntary. The participants and educators can withdraw from participation by not completing the surveys. The survey data will be collected without identifiers. The survey results cannot be linked back to individual participants or educators. All data will be analyzed and reported in aggregate formats.

Brief description of the project:

The EDGE project was designed to expand and enhance use of the U.S. Diabetes *Conversation Map*® tools as part of group diabetes self-management education (DSME), and to increase reach for programs using these *Conversation Map* tools to serve people with diabetes (PWD) who experience the greatest diabetes-related health disparities. The project will focus on serving people with diabetes who experience diabetes-related health disparities. Specifically, the populations served will include four focus populations: (1) self-identified individuals from racial/ethnic minority groups, (2) individuals who have low or inadequate incomes, (3) individuals who are un-insured or under-insured; and (4) individuals who are more comfortable using Spanish as their primary language.

Participant and educator experience with the U.S. Diabetes *Conversation Map*® tools has been documented and published in the literature with primarily white participants or participants who are not experiencing financial hardship. This process evaluation will gather session experiences from a group of participants and educators using the Maps compared to a group of participants who did not use the Maps in their group session.

Reason for Exemption

The data are being collected to better understand subject experiences with an education class for the purposes of quality improvement. The data will be collected in such a manner that the subject cannot be identified directly through identifiers linked to the subjects. All subjects will be completely anonymous.

Data Collection

Using a *Participant Post-session Survey*, this evaluation will gather participant experiences from two groups: (1) participants who participated in the *Conversation Map* group diabetes education class, and (2) participants who participated in a group diabetes education class without the *Conversation Map* tools. The 2-page survey will be completed at the end of a group diabetes class. The survey captures class experiences, diabetes status, and demographics. The survey is at a 5th grade reading level and will be translated into Spanish for participants who are more comfortable using Spanish as their primary language. The survey is completed anonymously.

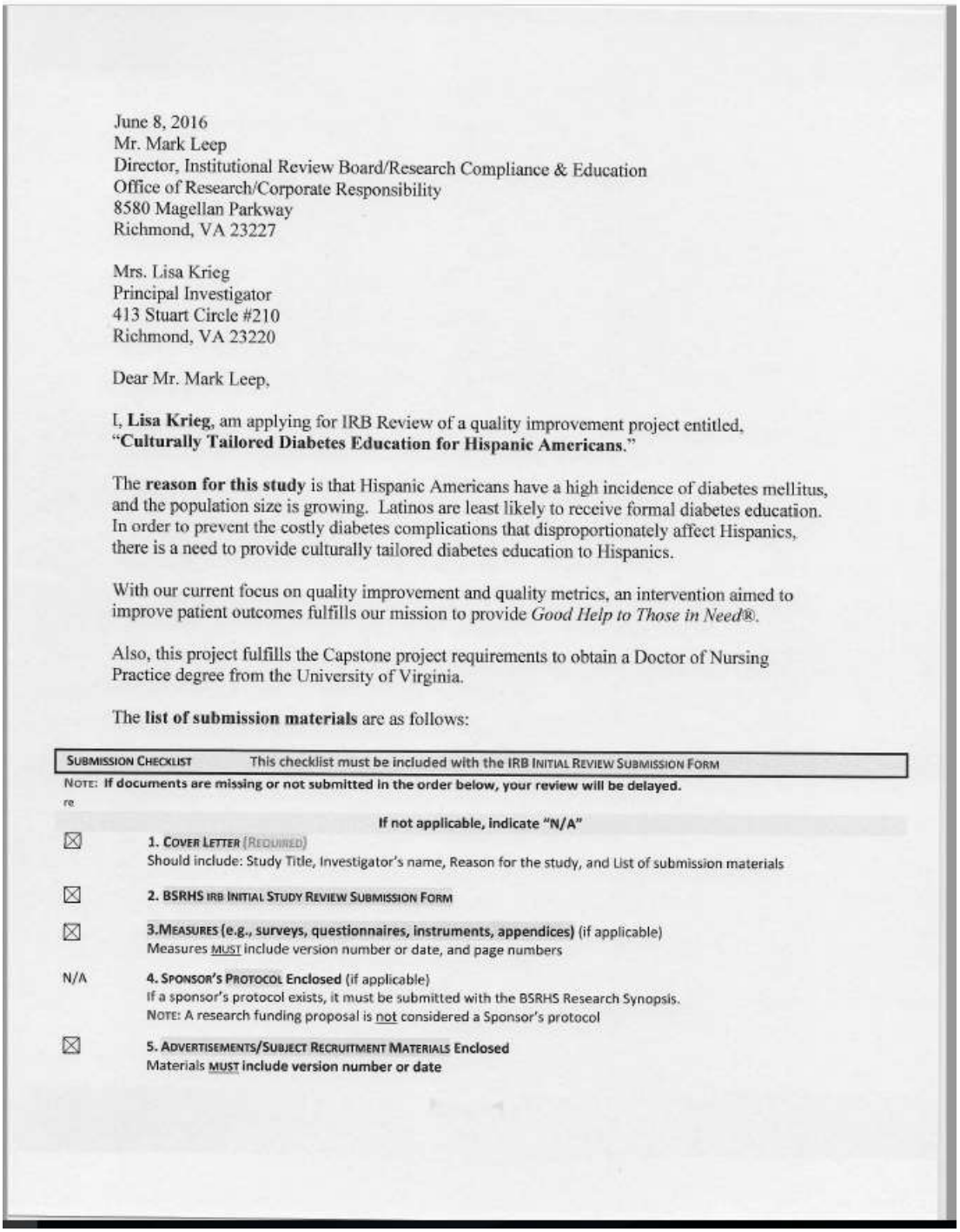
The survey data will not identify the participants nor can the survey responses be linked back to the individual participants.

Using a Diabetes Educator U.S. Diabetes *Conversation Map*® Experience Survey, this evaluation study will gather diabetes educator experiences with the *Conversation Map* tools. The survey is written at a 5th grade reading level and is anonymous. The survey data will not identify the participants nor can the survey responses be linked back to the individual participants. The survey captures educator experiences in using the Map tools, barriers to Map tool use, factors that facilitated Map tool use, and basic demographics. This survey will be developed in an electronic format using Survey Monkey and e-mailed to each educator for completion at the end of their *Conversation Map* facilitation experience.

Data Entry and Analysis

At the end of each session, the participants will place their completed Participant Post-session Surveys in an envelope labeled with the date of session, the session location (including state), and the name of the educator. The envelope will be mailed to the project evaluator for data entry, analysis and evaluation reporting. The surveys will be shredded after data entry processes have been verified. The data will be reported in aggregate format, not individually. The educator survey results will be gathered by Survey Monkey and submitted to the project evaluator using a spreadsheet format. The educator survey results will be reported in aggregate format, not individually.

Official Cover Letter Submitted to the IRB Committee



June 8, 2016
Mr. Mark Leep
Director, Institutional Review Board/Research Compliance & Education
Office of Research/Corporate Responsibility
8580 Magellan Parkway
Richmond, VA 23227

Mrs. Lisa Krieg
Principal Investigator
413 Stuart Circle #210
Richmond, VA 23220

Dear Mr. Mark Leep,

I, **Lisa Krieg**, am applying for IRB Review of a quality improvement project entitled, "**Culturally Tailored Diabetes Education for Hispanic Americans**."

The **reason for this study** is that Hispanic Americans have a high incidence of diabetes mellitus, and the population size is growing. Latinos are least likely to receive formal diabetes education. In order to prevent the costly diabetes complications that disproportionately affect Hispanics, there is a need to provide culturally tailored diabetes education to Hispanics.

With our current focus on quality improvement and quality metrics, an intervention aimed to improve patient outcomes fulfills our mission to provide *Good Help to Those in Need®*.

Also, this project fulfills the Capstone project requirements to obtain a Doctor of Nursing Practice degree from the University of Virginia.

The **list of submission materials** are as follows:

SUBMISSION CHECKLIST	This checklist must be included with the IRB INITIAL REVIEW SUBMISSION FORM
NOTE: **If documents are missing or not submitted in the order below, your review will be delayed.**	
re	
	If not applicable, indicate "N/A"
☒	**1. COVER LETTER** (REQUIRED) Should include: Study Title, Investigator's name, Reason for the study, and List of submission materials
☒	**2. BSRHS IRB INITIAL STUDY REVIEW SUBMISSION FORM**
☒	**3.MEASURES (e.g., surveys, questionnaires, instruments, appendices)** (if applicable) Measures MUST include version number or date, and page numbers
N/A	**4. SPONSOR'S PROTOCOL Enclosed** (if applicable) If a sponsor's protocol exists, it must be submitted with the BSRHS Research Synopsis. NOTE: A research funding proposal is not considered a Sponsor's protocol
☒	**5. ADVERTISEMENTS/SUBJECT RECRUITMENT MATERIALS Enclosed** Materials MUST **include version number or date**

☒	**6. Informed Consent/Assent Document(s) Enclosed** (if applicable) Follow the BSRHS IRB Consent Template and include version number or date, and page numbers
N/A	**7. Print out of Web page from** http://clinicaltrials.gov/ **Required for clinical trials ONLY**
N/A	**8. BSRHS IRB Vulnerable Subjects Form** (if applicable)
N/A	**9. FDA Form 1572** If investigational drugs are involved in the research
N/A	**10. IND or IDE Application** If evaluating a drug or device and IND or IDE is held by the investigator
N/A	**11. Investigator's Brochure** If evaluating a drug or device and the IND or IDE is held by the sponsor
N/A	**12. Documentation Regarding Level of Risk** Particularly if evaluating an investigational medical device or new use for marketed medical device.
N/A	**13. Completed Financial Disclosure Form** (if applicable).
☒	**14. Principal Investigator CV (Max 5-6pp) or Biosketch (2-3pp)**
N/A	**15. Co/Sub-investigators CV (Max 5-6pp) or Biosketch (2-3pp)**
☒	**16. Training Certification for all Investigators, Research Coordinators**
☒	**17. Other:** **Permissions**
☒	All Investigator(s) and key personnel have **signed the Confidentiality Agreement**
☒	Principal Investigator has signed **Statements of Compliance**

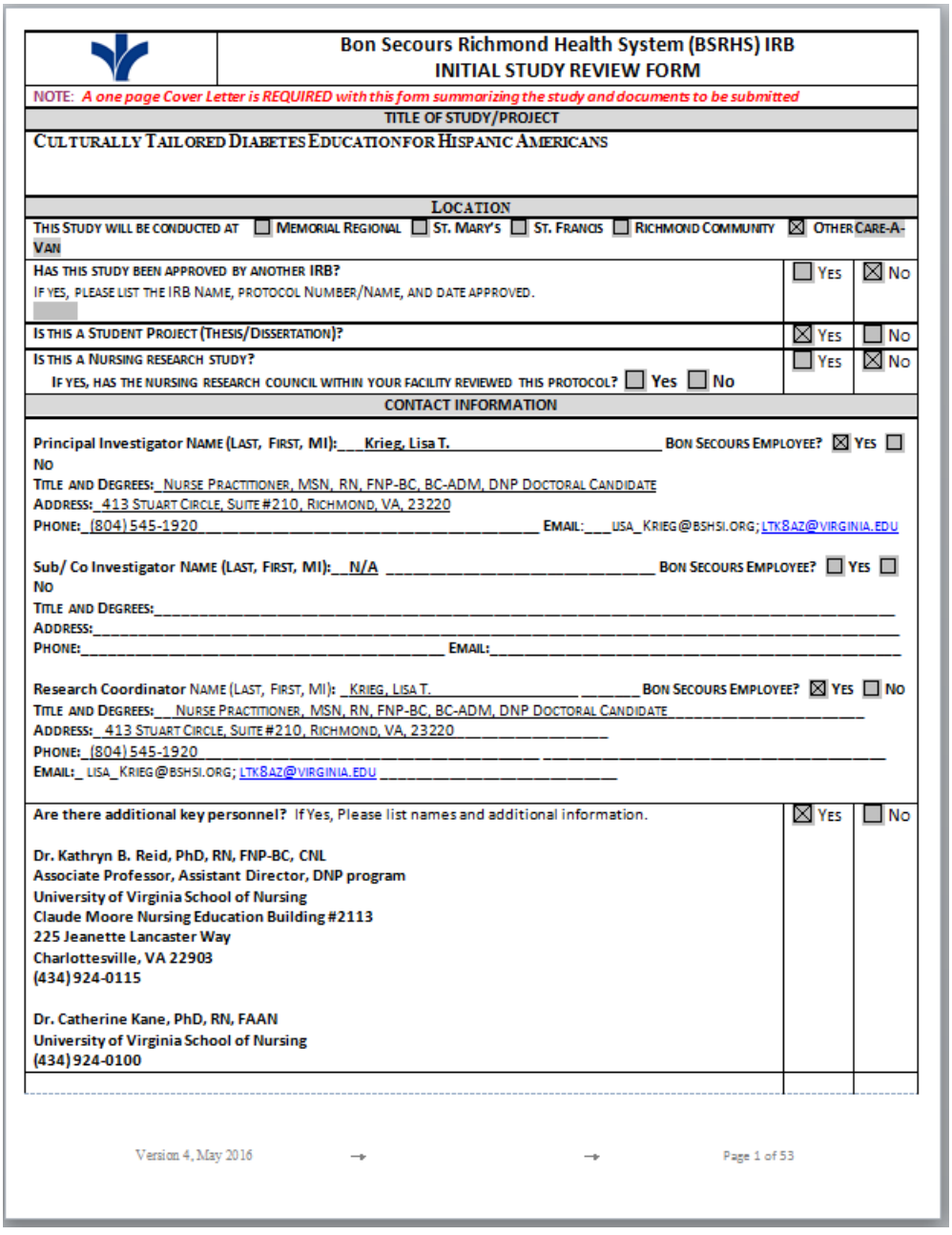
Sincerely,

Lisa T. Krieg

Lisa T. Krieg

Official Form Submitted to the IRB Committee

The first, second, and third pages are shown.



Bon Secours Richmond Health System (BSRHS) IRB
INITIAL STUDY REVIEW FORM

NOTE: *A one page Cover Letter is REQUIRED with this form summarizing the study and documents to be submitted*

TITLE OF STUDY/PROJECT

CULTURALLY TAILORED DIABETES EDUCATION FOR HISPANIC AMERICANS

LOCATION

THIS STUDY WILL BE CONDUCTED AT ☐ MEMORIAL REGIONAL ☐ ST. MARY'S ☐ ST. FRANCIS ☐ RICHMOND COMMUNITY ☒ OTHER CARE-A-VAN

HAS THIS STUDY BEEN APPROVED BY ANOTHER IRB? IF YES, PLEASE LIST THE IRB NAME, PROTOCOL NUMBER/NAME, AND DATE APPROVED.	☐ YES	☒ NO
IS THIS A STUDENT PROJECT (THESIS/DISSERTATION)?	☒ YES	☐ NO
IS THIS A NURSING RESEARCH STUDY? IF YES, HAS THE NURSING RESEARCH COUNCIL WITHIN YOUR FACILITY REVIEWED THIS PROTOCOL? ☐ Yes ☐ No	☐ YES	☒ NO

CONTACT INFORMATION

Principal Investigator NAME (LAST, FIRST, MI): Krieg, Lisa T. BON SECOURS EMPLOYEE? ☒ YES ☐ NO
TITLE AND DEGREES: NURSE PRACTITIONER, MSN, RN, FNP-BC, BC-ADM, DNP DOCTORAL CANDIDATE
ADDRESS: 413 STUART CIRCLE, SUITE #210, RICHMOND, VA, 23220
PHONE: (804) 545-1920 EMAIL: USA_KRIEG@BSHSI.ORG; LTK8AZ@VIRGINIA.EDU

Sub/ Co Investigator NAME (LAST, FIRST, MI): N/A BON SECOURS EMPLOYEE? ☐ YES ☐ NO
TITLE AND DEGREES:
ADDRESS:
PHONE: EMAIL:

Research Coordinator NAME (LAST, FIRST, MI): KRIEG, LISA T. BON SECOURS EMPLOYEE? ☒ YES ☐ NO
TITLE AND DEGREES: NURSE PRACTITIONER, MSN, RN, FNP-BC, BC-ADM, DNP DOCTORAL CANDIDATE
ADDRESS: 413 STUART CIRCLE, SUITE #210, RICHMOND, VA, 23220
PHONE: (804) 545-1920
EMAIL: LISA_KRIEG@BSHSI.ORG; LTK8AZ@VIRGINIA.EDU

Are there additional key personnel? If Yes, Please list names and additional information. **Dr. Kathryn B. Reid, PhD, RN, FNP-BC, CNL** **Associate Professor, Assistant Director, DNP program** **University of Virginia School of Nursing** **Claude Moore Nursing Education Building #2113** **225 Jeanette Lancaster Way** **Charlottesville, VA 22903** **(434) 924-0115** **Dr. Catherine Kane, PhD, RN, FAAN** **University of Virginia School of Nursing** **(434) 924-0100**	☒ YES	☐ NO

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If Yes, Please list names and additional information

TYPE OF REVIEW (check one):

☐ **FULL BOARD REVIEW**

☒ **EXPEDITED REVIEW** * **EXPEDITED CATEGORIES:** A.7

* Please list specific categories for Expedited Review which can be found at http://www.hhs.gov/ohrp/policy/expedited98.html

☐ **EXEMPT REVIEW** [*PLEASE SPECIFY EXEMPTION CATEGORY BELOW*]

CATEGORIES:

☐ **EXEMPTION 1: NORMAL EDUCATIONAL PRACTICES AND SETTINGS:** RESEARCH CONDUCTED IN ESTABLISHED OR COMMONLY ACCEPTED EDUCATIONAL SETTINGS, INVOLVING NORMAL EDUCATIONAL PRACTICES

☐ **EXEMPTION 2: ANONYMOUS EDUCATIONAL TESTS, SURVEYS, INTERVIEWS, OR OBSERVATIONS:** RESEARCH INVOLVING THE USE OF EDUCATIONAL TESTS (COGNITIVE, DIAGNOSTIC, APTITUDE, ACHIEVEMENT), SURVEY PROCEDURES, INTERVIEW PROCEDURES OR OBSERVATION OF PUBLIC BEHAVIOR

☐ **EXEMPTION 3: IDENTIFIABLE SUBJECTS IN SPECIAL CIRCUMSTANCES:** RESEARCH INVOLVING THE USE OF EDUCATIONAL TESTS (COGNITIVE, DIAGNOSTIC, APTITUDE, ACHIEVEMENT), SURVEY PROCEDURES, INTERVIEW PROCEDURES OR OBSERVATION OF PUBLIC BEHAVIOR THAT IS NOT EXEMPT UNDER PARAGRAPH (B) OF THIS SECTION, IF: THE HUMAN SUBJECTS ARE ELECTED OR APPOINTED PUBLIC OFFICIALS OR CANDIDATES FOR PUBLIC OFFICE; THAT THE CONFIDENTIALITY OF THE PERSONALLY IDENTIFIABLE INFORMATION WILL BE MAINTAINED THROUGHOUT THE RESEARCH AND THEREAFTER.

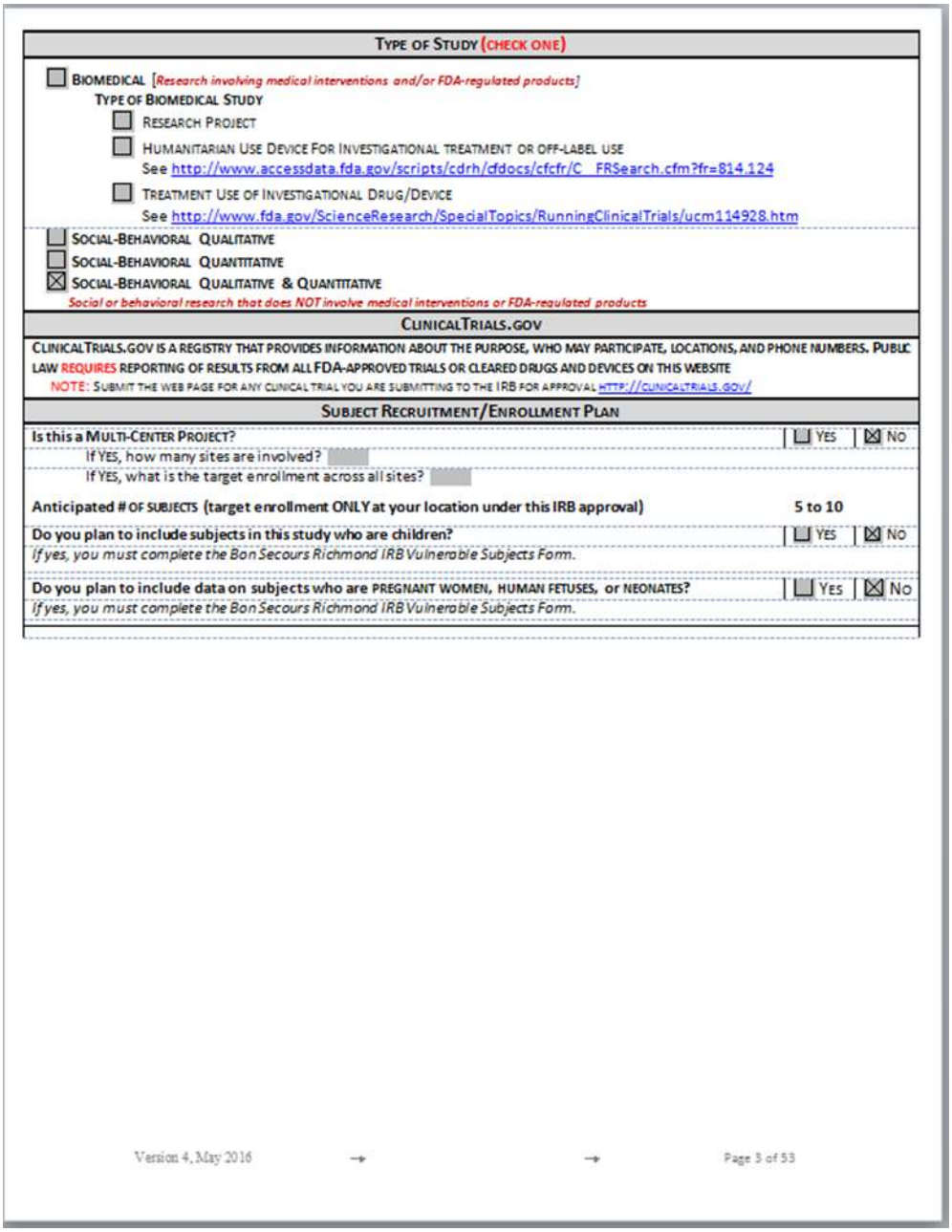
☐ **EXEMPTION 4: COLLECTION OR STUDY OF EXISTING DATA:** RESEARCH INVOLVING THE COLLECTION OR STUDY OF EXISTING DATA, DOCUMENTS, RECORDS, PATHOLOGICAL SPECIMENS, OR DIAGNOSTIC SPECIMENS, IF THESE SOURCES ARE PUBLICLY AVAILABLE OR IF THE INFORMATION IS RECORDED BY THE INVESTIGATOR IN SUCH A MANNER THAT SUBJECTS CANNOT BE IDENTIFIED, DIRECTLY OR THROUGH IDENTIFIERS LINKED TO THE SUBJECTS.

☐ **EXEMPTION 5: PUBLIC BENEFIT OR SERVICE PROGRAMS:** RESEARCH AND DEMONSTRATION PROJECTS ARE CONDUCTED BY OR SUBJECT TO THE APPROVAL OF ANY FEDERAL DEPARTMENT OR AGENCY, OR ANY OTHER OFFICER OR EMPLOYEE OF ANY FEDERAL DEPARTMENT OR AGENCY TO WHOM AUTHORITY HAS BEEN DELEGATED, AND WHICH ARE DESIGNED TO STUDY, EVALUATE, OR OTHERWISE EXAMINE:

a) PUBLIC BENEFIT OR SERVICE PROGRAMS;
b) PROCEDURES FOR OBTAINING BENEFITS OR SERVICES UNDER THOSE PROGRAMS;
c) POSSIBLE CHANGES IN OR ALTERNATIVES TO THOSE PROGRAMS OR PROCEDURES; OR
d) POSSIBLE CHANGES IN METHODS OR LEVELS OF PAYMENT FOR BENEFITS OR SERVICES UNDER THOSE PROGRAMS.

☐ **EXEMPTION 6: TASTE AND FOOD EVALUATION AND ACCEPTANCE STUDIES:** TASTE AND FOOD QUALITY EVALUATION AND CONSUMER ACCEPTANCE STUDIES,

a) IF WHOLESOME FOODS WITHOUT ADDITIVES ARE CONSUMED OR
b) IF A FOOD IS CONSUMED THAT CONTAINS A FOOD INGREDIENT AT OR BELOW THE LEVEL AND FOR A USE FOUND TO BE SAFE, OR AGRICULTURAL CHEMICAL OR ENVIRONMENTAL CONTAMINANT AT OR BELOW THE LEVEL FOUND TO BE SAFE, BY THE FOOD AND DRUG ADMINISTRATION OR APPROVED BY THE ENVIRONMENTAL PROTECTION AGENCY OR THE FOOD SAFETY AND INSPECTION SERVICE OF THE U.S. DEPARTMENT OF AGRICULTURE.



TYPE OF STUDY (CHECK ONE)

☐ BIOMEDICAL *[Research involving medical interventions and/or FDA-regulated products]*

TYPE OF BIOMEDICAL STUDY

☐ RESEARCH PROJECT

☐ HUMANITARIAN USE DEVICE FOR INVESTIGATIONAL TREATMENT OR OFF-LABEL USE
See http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/C FRSearch.cfm?fr=814.124

☐ TREATMENT USE OF INVESTIGATIONAL DRUG/DEVICE
See http://www.fda.gov/ScienceResearch/SpecialTopics/RunningClinicalTrials/ucm114928.htm

☐ SOCIAL-BEHAVIORAL QUALITATIVE

☐ SOCIAL-BEHAVIORAL QUANTITATIVE

☒ SOCIAL-BEHAVIORAL QUALITATIVE & QUANTITATIVE

Social or behavioral research that does NOT involve medical interventions or FDA-regulated products

CLINICALTRIALS.GOV

CLINICALTRIALS.GOV IS A REGISTRY THAT PROVIDES INFORMATION ABOUT THE PURPOSE, WHO MAY PARTICIPATE, LOCATIONS, AND PHONE NUMBERS. PUBLIC LAW REQUIRES REPORTING OF RESULTS FROM ALL FDA-APPROVED TRIALS OR CLEARED DRUGS AND DEVICES ON THIS WEBSITE

NOTE: SUBMIT THE WEB PAGE FOR ANY CLINICAL TRIAL YOU ARE SUBMITTING TO THE IRB FOR APPROVAL HTTP://CLINICALTRIALS.GOV/

SUBJECT RECRUITMENT/ENROLLMENT PLAN

Is this a MULTI-CENTER PROJECT?	☐ YES ☒ NO
If YES, how many sites are involved?	
If YES, what is the target enrollment across all sites?	
Anticipated # OF SUBJECTS (target enrollment ONLY at your location under this IRB approval)	**5 to 10**
Do you plan to include subjects in this study who are children?	☐ YES ☒ NO
If yes, you must complete the Bon Secours Richmond IRB Vulnerable Subjects Form.	
Do you plan to include data on subjects who are PREGNANT WOMEN, HUMAN FETUSES, or NEONATES?	☐ YES ☒ NO
If yes, you must complete the Bon Secours Richmond IRB Vulnerable Subjects Form.	

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Regulatory and Compliance Committee Application

Regulatory and Compliance Workgroup

Request Form

Submit completed form to

Administrator_RCC@bshsi.org

Request Date: 9/9/16	**Requested by:** Lisa Krieg
Facility: University of Virginia	**Department: Graduate Nursing Education**
Position Title: Candidate, Doctor of Nursing Practice	**Position Reports To:** Kathryn Reid, Ph.D.
Enhancement Ticket #: n/a	**Invitees required for Meeting:** TBD
Presentor For Meeting: **Lisa T. Krieg**	**Workforce Members or Departments Impacted:** **n/a**

Explain the new function or change to current functionality that is being requested (please be specific):
This project proposal serves as partial fulfillment of the requirements for the Doctor of Nursing Practice degree from the University of Virginia. Prior to beginning this competitive program, I garnered the support of Bon Secours to assist with tuition reimbursement. In my patient practice, many people with diabetes are Hispanic and prefer to speak Spanish. This evidence-based project will use the Spanish Diabetes Conversation Maps to provide group diabetes education to a population in great need. The maximum number of patients that may participate in this project is ten. This is a practice translation project; that is, the Diabetes Conversation Maps have been used all over the world in different languages with different populations and have demonstrated measurable improvements. What has not been done is to use the Maps in the United States for the uninsured Hispanic diabetes population in their preferred native language. Recruitment will take place via patient response to flyers describing the project. There will be a telephone number used specifically for this project for patients to call. This phone will be purchased at WalMart and will allow patients to leave a message. Once there is no further need for patient contact, the phone account will be terminated and all data will be wiped clean.

Security build - please provide the following info that is applicable for your request:

Template(s) Name and Number: n/a

TB User ID for template: n/a

User role Name and Number: n/a

ECL Name and Number: n/a

Security points added (Number(s) and description): n/a

Department overrides: n/a

Special instructions/Misc: n/a

The informed consent form states that all personal and medical information about other people in the group may not be shared outside of the group setting. Participants will provide permission to have personal data collected about them.

Patient names and medical record numbers will be assigned a participant number; these assignments will be stored in a locked cabinet accessible only by the principal investigator in the administrative office of the clinic. Data collection will utilize only participant numbers and de-identified demographic data such as gender and age, along with the pre-test and post-test scores for the intervention.

All protected health information will be kept confidential. Once data have been collected, coded, and analyzed, the original questionnaires will be shredded and destroyed. Following completion of the final scholarly project, all collected data will be shredded and destroyed.

University of Virginia School of Nursing professors will only have access to de-identified data. This Scholarly Project Proposal has been approved by the University of Virginia in fulfillment of the class entitled Proposal Writing Seminar.

The Bon Secours Responsible Accountable Executive, Dr. Khiet Trinh, MD, has also granted his approval. This proposal was then submitted to the Bon Secours IRB and has been categorized as a Quality Improvement Project. It was determined not to be research with human subjects. This proposal will now be presented to the Regulatory and Compliance Committee.

Why is new functionality or change required? (New program, Accrediting/regulatory requirement, Demand, etc.):
The uninsured Hispanic population of the greater Richmond area who have diabetes and speak Spanish, have limited options to obtain culturally-sensitive diabetes education. People who have diabetes suffer unnecessary and expensive complications that place added strain on our health care system. Providing self-management education for chronic conditions is a small investment up front to increase engagement in self-care behaviors. According to Social Cognitive Theory and the Theory of Self-Efficacy, increased confidence in the ability to perform self-care behaviors is correlated with improvements in Hemoglobin A1c.

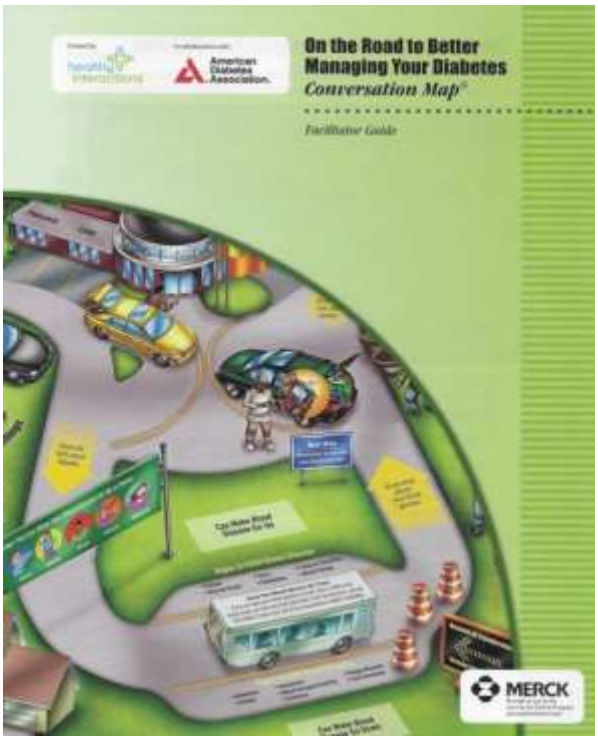
What new measurable results, milestones or improvements will this functionality provide?
This Evidence Based Project will measure knowledge and self-efficacy prior to, and following, a culturally sensitive diabetes education program. By measuring HbA1c three months after the educational session, this may provide insight into the characteristics of patients who would benefit most from group education. Education can then be offered to individuals most likely to benefit from group education, thereby improving community outreach and population health. In the normal course of patient care, people with diabetes have their HbA1c measured every 3 months when diabetes is uncontrolled. A retrospective chart review will be performed 4 months following the project. Any HbA1cs that have been measured in the normal course of patient care since the project will be added to the database. Any missing values will be marked as missing.

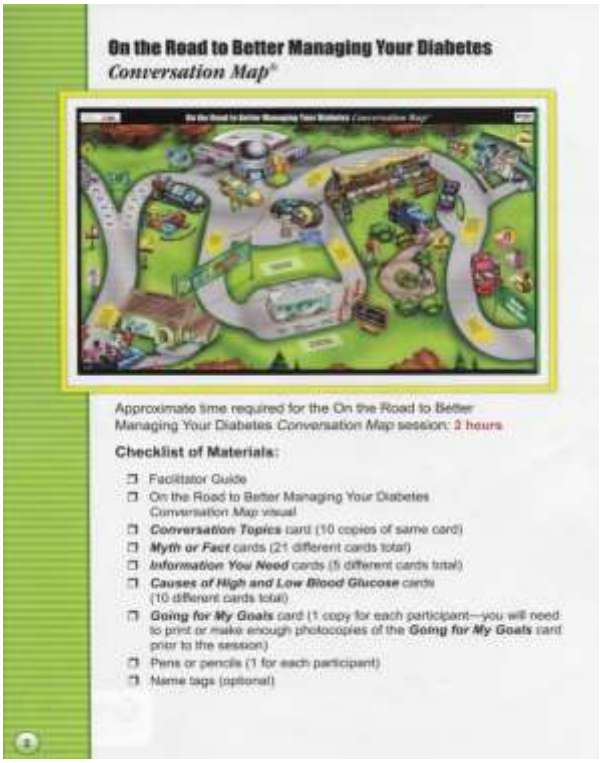
How is this work currently being performed or need being addressed?
For this population, this work is currently not being addressed.

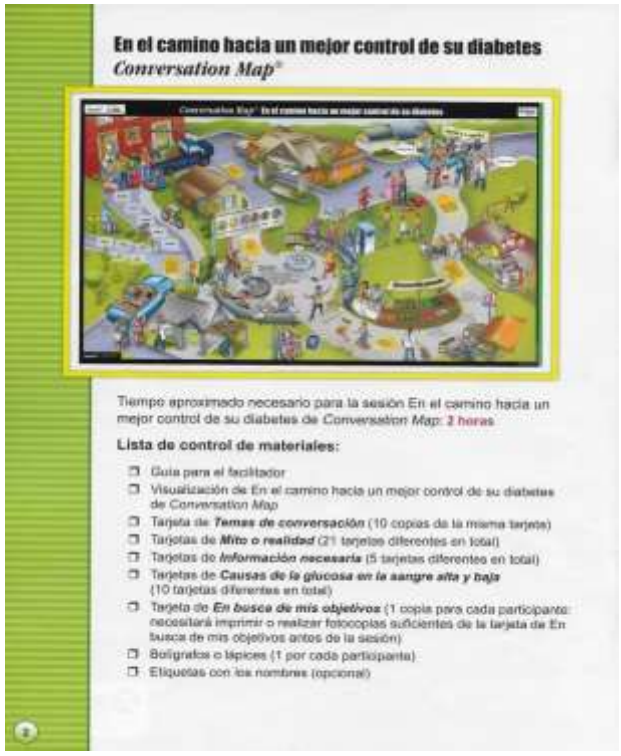
What are the implications of this new functionality not being approved or this review not taking place?
This is an evidence-based project that has demonstrated success in both the United States and around the world. The large population of diabetic, Spanish-speaking patients would benefit from participation in a program that will be free for them. Bon Secours Care-A-Van is the ideal population upon which to implement this project. This patient population is unique in many ways; it may be difficult to implement this project elsewhere for a similar population.

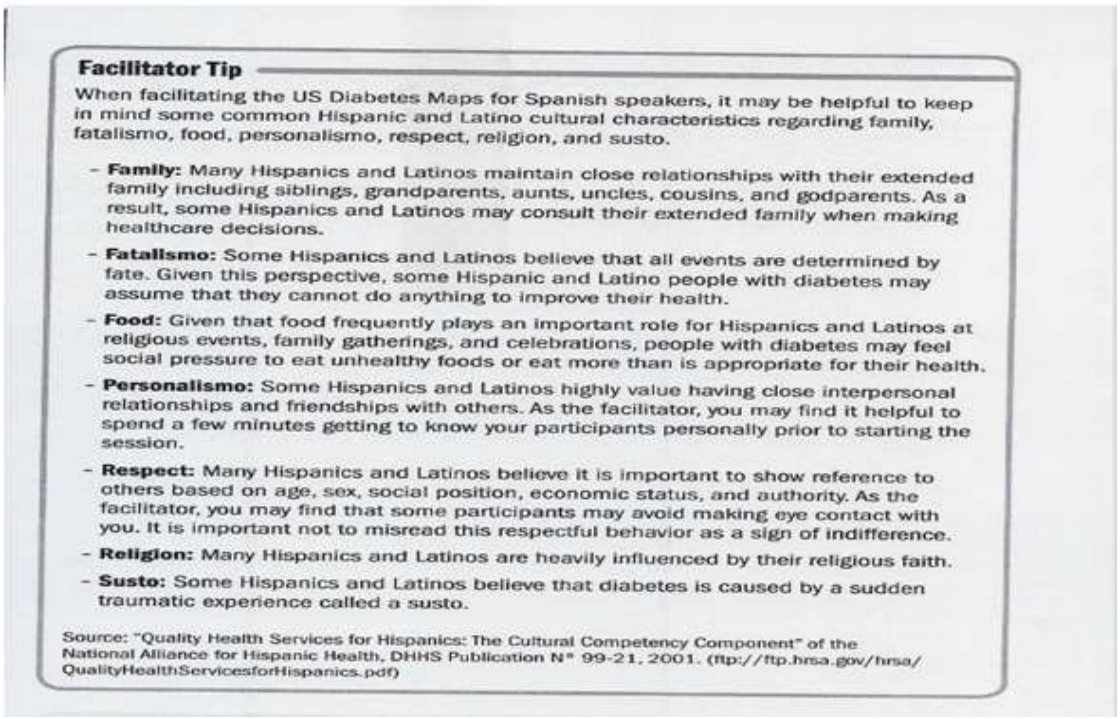
DSME Class Handbook in English and Spanish

This was prepared by the PI for training and implementation purposes.









Facilitator Tip

When facilitating the US Diabetes Maps for Spanish speakers, it may be helpful to keep in mind some common Hispanic and Latino cultural characteristics regarding family, fatalismo, food, personalismo, respect, religion, and susto.

- **Family:** Many Hispanics and Latinos maintain close relationships with their extended family including siblings, grandparents, aunts, uncles, cousins, and godparents. As a result, some Hispanics and Latinos may consult their extended family when making healthcare decisions.
- **Fatalismo:** Some Hispanics and Latinos believe that all events are determined by fate. Given this perspective, some Hispanic and Latino people with diabetes may assume that they cannot do anything to improve their health.
- **Food:** Given that food frequently plays an important role for Hispanics and Latinos at religious events, family gatherings, and celebrations, people with diabetes may feel social pressure to eat unhealthy foods or eat more than is appropriate for their health.
- **Personalismo:** Some Hispanics and Latinos highly value having close interpersonal relationships and friendships with others. As the facilitator, you may find it helpful to spend a few minutes getting to know your participants personally prior to starting the session.
- **Respect:** Many Hispanics and Latinos believe it is important to show reference to others based on age, sex, social position, economic status, and authority. As the facilitator, you may find that some participants may avoid making eye contact with you. It is important not to misread this respectful behavior as a sign of indifference.
- **Religion:** Many Hispanics and Latinos are heavily influenced by their religious faith.
- **Susto:** Some Hispanics and Latinos believe that diabetes is caused by a sudden traumatic experience called a susto.

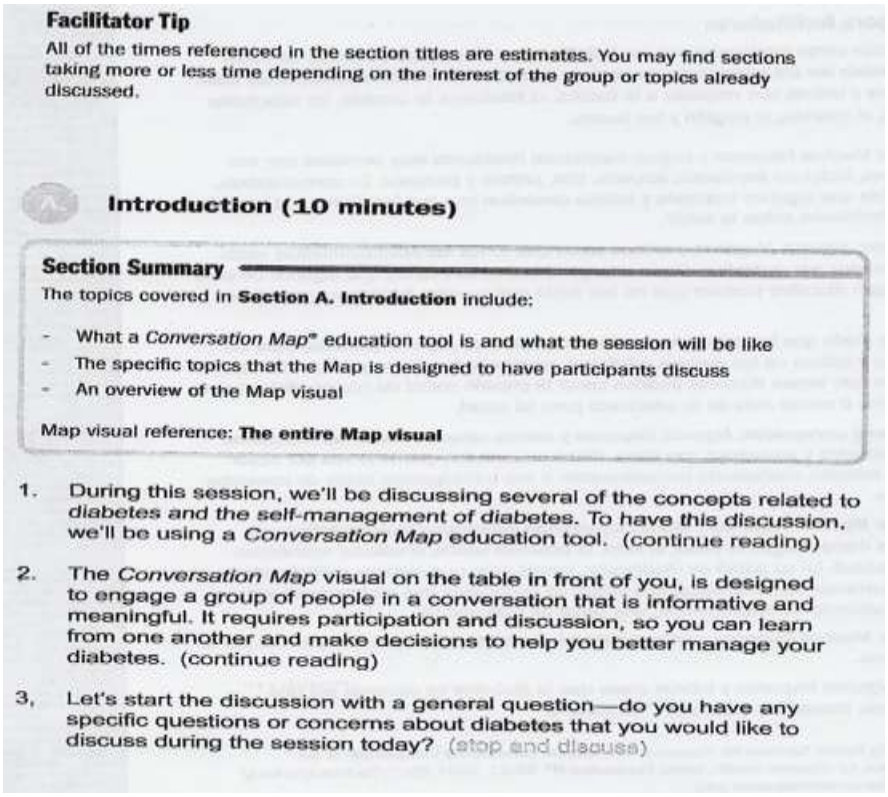
Source: "Quality Health Services for Hispanics: The Cultural Competency Component" of the National Alliance for Hispanic Health, DHHS Publication N° 99-21, 2001. (ftp://ftp.hrsa.gov/hrsa/QualityHealthServicesforHispanics.pdf)

Consejo para facilitadores

Cuando actúe como moderador con los U.S. Diabetes Maps para personas de habla hispana, podría ser útil tener presente algunas características culturales comunes entre los hispanos y latinos con respecto a la familia, el fatalismo, la comida, las relaciones personales, el respeto, la religión y los sustos.

- **Familia:** Muchos hispanos y latinos mantienen relaciones muy cercanas con sus familiares, incluidos hermanos, abuelos, tíos, primos y padrinos. En consecuencia, es posible que algunos hispanos y latinos consulten con sus familiares a la hora de tomar decisiones sobre la salud.
- **Fatalismo:** Algunos hispanos y latinos creen que todos los acontecimientos están determinados por el destino. Dada esta perspectiva, es posible que algunos de ellos que tengan diabetes piensen que no hay nada que puedan hacer para mejorar su salud.
- **Comida:** Dado que la comida frecuentemente tiene un papel importante para los hispanos y latinos en los eventos religiosos, reuniones familiares y celebraciones, las personas que tienen diabetes podrían sentir la presión social de comer alimentos no saludables o comer más de lo adecuado para su salud.
- **Relaciones personales:** Algunos hispanos y latinos valoran mucho las relaciones interpersonales y amistades con otros. Como moderador, quizás le sea útil pasar algunos minutos conociendo personalmente a sus participantes antes de comenzar la sesión.
- **Respeto:** Muchos hispanos y latinos consideran importante mostrar deferencia hacia los demás según la edad, el sexo, la posición social, el estatus económico y la autoridad. En su papel de moderador, quizás note que algunos participantes eviten mantener contacto visual con usted. Es importante que no interprete este comportamiento de respeto como una señal de indiferencia.
- **Religión:** Muchos hispanos y latinos tienen influencias marcadas fuertemente por su fe religiosa.
- **Susto:** Algunos hispanos y latinos creen que la diabetes es causada por una experiencia traumática repentina ("un susto").

Source: "Quality Health Services for Hispanics: The Cultural Competency Component" of the National Alliance for Hispanic Health, DHHS Publication N° 99-21, 2001. (ftp://ftp.hrsa.gov/hrsa/QualityHealthServicesforHispanics.pdf)



Facilitator Tip

All of the times referenced in the section titles are estimates. You may find sections taking more or less time depending on the interest of the group or topics already discussed.

A. Introduction (10 minutes)

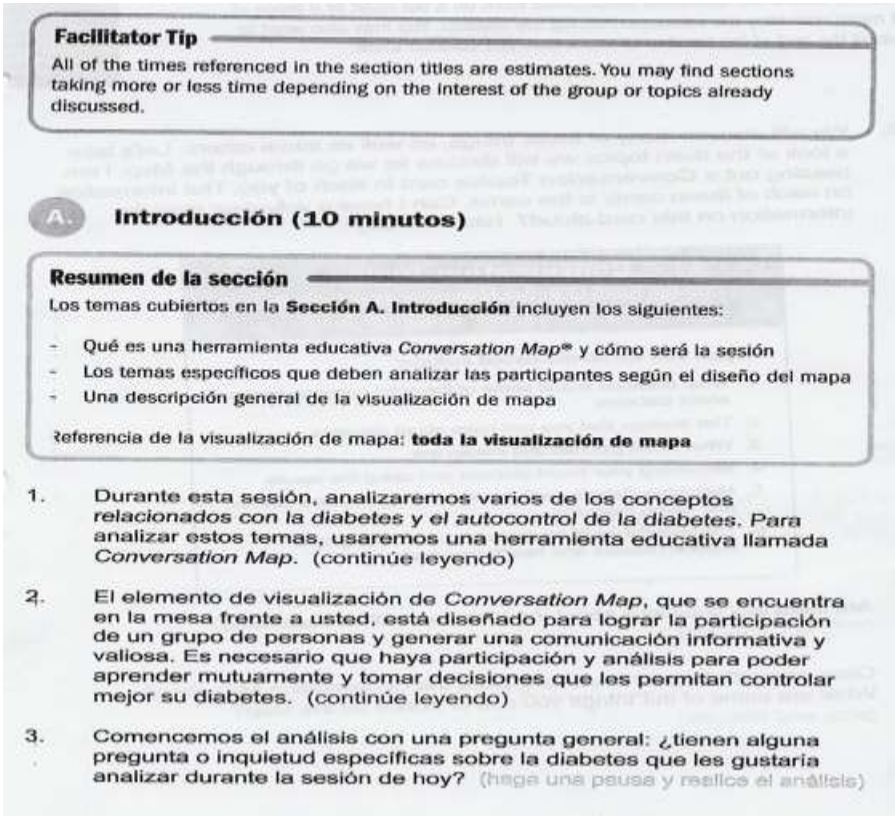
Section Summary

The topics covered in **Section A. Introduction** include:

- What a *Conversation Map*® education tool is and what the session will be like
- The specific topics that the Map is designed to have participants discuss
- An overview of the Map visual

Map visual reference: **The entire Map visual**

1. During this session, we'll be discussing several of the concepts related to *diabetes and the self-management of diabetes*. To have this discussion, we'll be using a *Conversation Map* education tool. (continue reading)
2. The *Conversation Map* visual on the table in front of you, is designed to engage a group of people in a conversation that is informative and meaningful. It requires participation and discussion, so you can learn from one another and make decisions to help you better manage your diabetes. (continue reading)
3. Let's start the discussion with a general question—do you have any specific questions or concerns about diabetes that you would like to discuss during the session today? (stop and discuss)



Facilitator Tip

All of the times referenced in the section titles are estimates. You may find sections taking more or less time depending on the interest of the group or topics already discussed.

A. Introducción (10 minutos)

Resumen de la sección

Los temas cubiertos en la **Sección A. Introducción** incluyen los siguientes:

- Qué es una herramienta educativa *Conversation Map*® y cómo será la sesión
- Los temas específicos que deben analizar las participantes según el diseño del mapa
- Una descripción general de la visualización de mapa

Referencia de la visualización de mapa: **toda la visualización de mapa**

1. Durante esta sesión, analizaremos varios de los conceptos *relacionados con la diabetes y el autocontrol de la diabetes*. Para analizar estos temas, usaremos una herramienta educativa llamada *Conversation Map*. (continúe leyendo)
2. El elemento de visualización de *Conversation Map*, que se encuentra en la mesa frente a usted, está diseñado para lograr la participación de un grupo de personas y generar una comunicación informativa y valiosa. Es necesario que haya participación y análisis para poder aprender mutuamente y tomar decisiones que les permitan controlar mejor su diabetes. (continúe leyendo)
3. Comencemos el análisis con una pregunta general: ¿tienen alguna pregunta o inquietud específicas sobre la diabetes que les gustaría analizar durante la sesión de hoy? (haga una pausa y realice el análisis)

You may want to record the questions participants have on a flip chart or a piece of paper and make sure they are addressed during the session. You may also want to review them at the end of the session to make sure you covered them.

4. We will discuss many of these things, as well as some others. Let's take a look at the main topics we will discuss as we go through the Map. I am passing out a ***Conversation Topics*** card to each of you. The information on each of these cards is the same. Can I have a volunteer read the information on this card aloud? (stop and do)

Conversation Topics
On the Road to Better Managing Your Diabetes
Conversation Map **Education Tool**

Topics that will be discussed include:

1. What diabetes is and some of the most common myths about diabetes
2. The feelings that you can have about diabetes
3. What blood glucose and insulin are
4. Monitoring your blood glucose and using the results
5. Managing diabetes with healthy eating, physical activity, and taking medicine
6. The importance of having a plan and engaging a support network and health care team

5. Are there any questions about the topics we will be discussing? (stop and discuss)

6. Okay, now let's take a minute to explore the *Conversation Map* visual. What are some of the things you see or notice on the Map? (stop and discuss)

Consejo para facilitadores

Le recomendamos que registre las preguntas que tengan los participantes en una pizarra de conferencia o en una hoja de papel y que se asegure de que se traten durante la sesión. También le recomendamos que las revise al final de la sesión para asegurarse de haberlas tratado.

Facilitator Tip

You may want to record the questions participants have on a flip chart or a piece of paper and make sure they are addressed during the session. You may also want to review them at the end of the session to make sure you covered them.

4. Analizaremos muchas de estas cosas y también otras. Veamos los temas principales que analizaremos a medida que avanzamos en el mapa. Voy a entregarles una tarjeta de ***Temas de conversación*** a cada uno de ustedes. La información que figura en todas las tarjetas es la misma. ¿Puede alguien leer la información de la tarjeta en voz alta? (haga una pausa y espere a que alguien lea)

Temas de conversación
Herramienta educativa En el camino hacia un mejor control de su diabetes ***Conversation Map***®

Los temas que se analizarán incluyen los siguientes:

1. Qué es la diabetes y algunos de los mitos más comunes sobre la diabetes
2. Cómo es posible que se sienta respecto de la diabetes
3. Qué son la glucosa en la sangre y la insulina
4. Cómo controlar la glucosa en la sangre y usar los resultados
5. Cómo controlar la diabetes con una alimentación saludable, actividad física y la toma de medicamentos
6. La importancia de contar con un plan y de hacer partícipes a una red de apoyo y a un equipo de cuidados de la salud

5. ¿Alguien tiene alguna pregunta acerca de los temas que analizaremos? (haga una pausa y realice el análisis)

6. Bien, ahora tomémonos un minuto para explorar la visualización de *Conversation Map*. ¿Qué ven o notan en el mapa? (haga una pausa y realice el análisis)

Facilitator Tip

You may want to get participants to stand up when they are describing the *Conversation Map* visual, or you can hold it up for them. It will be easier to see the various elements of the visual if you do this. If you do stand to hold up the visual for the group, be sure to remember to sit back down.

It's important to get participants to describe as much of the visual as possible. Areas of the visual can be difficult for participants to see depending on the seating. The more comfortable you get participants with the visual at the beginning, the better the session will go.

7. That's great! You identified many of the things we'll be discussing today. We will begin by focusing on the left side of the Map and discussing what diabetes is and some of the common myths and facts about diabetes. (continue reading)

8. We will then take a look at some of the feelings one might have when he or she finds out he or she has diabetes as well as the feelings one might have when trying to manage diabetes. (continue reading)

9. Finally, we will discuss several things related to blood glucose, including looking at the things you can do to manage your blood glucose and your diabetes like healthy eating, keeping active, and taking medicine. You will also be asked to set a goal and choose a step you will take to reach your goal. (continue reading)

Facilitator Tip

Again, taking the time to provide a thorough overview of the visual and its flow will help the session run more smoothly.

Consejo para facilitadores

Es posible que quiera que los participantes se pongan de pie cuando describan la visualización de *Conversation Map*, o puede sostenerla usted para que la vean. Esto hará que sea más fácil ver los diversos elementos de visualización. Si se pone de pie para sostener la visualización para el grupo, asegúrese de volver a sentarse.

Es importante pedirles a los participantes que describan la mayor cantidad posible de lo que ven. Las áreas de la visualización pueden ser difíciles de ver para los participantes según dónde estén sentados. Cuanto más cómodos estén los participantes con la visualización al comienzo, mejor irá la sesión.

7. ¡Excelente! Identificaron muchas de las cosas que analizaremos hoy. Comenzaremos por concentrarnos en la parte izquierda del mapa y analizaremos qué es la diabetes y algunos de los mitos comunes y realidades sobre la diabetes. (continúe leyendo)

8. Luego, observaremos algunos de los sentimientos que experimentan las personas cuando se les diagnostica diabetes y también los sentimientos que pueden tener cuando tratan de controlarla. (continúe leyendo)

9. Finalmente, analizaremos varios factores relacionados con la glucosa en la sangre, incluso lo que pueden hacer para controlar la glucosa en la sangre y la diabetes, como llevar una alimentación saludable, mantenerse activo y tomar los medicamentos. También les pediremos que establezcan un objetivo y elijan la forma en la que lo cumplirán. (continúe leyendo)

Consejo para facilitadores

Nuevamente, si se toma tiempo para proporcionar una descripción general de la visualización y de su flujo, esto ayudará a que la sesión avance con mayor facilidad.

B. Your Experience and Understanding of Diabetes (15 minutes)

Section Summary

The topics covered in **Section B. *Your Experience and Understanding of Diabetes*** include:

- What diabetes is
- The differences (and similarities) between type 1 and type 2 diabetes
- Some common myths and facts about diabetes

Map visual reference: **The *house* in the lower left of the Map and the *road* leading up the left side of the Map**

1. Let's continue by focusing on the scene in the lower left corner of the Map. When it comes to managing your diabetes, you're in the driver's seat. Your health care team and support network will be there to help you, but managing your blood glucose levels and your diabetes is up to you. You will have a lot of choices to make as you go through each day. The more you know, the more able you will be to make wise choices. (continue reading)

2. Because each one of you comes to this session with your own experience and understanding of diabetes, how would you describe diabetes in your own words? (stop and discuss)

B. Su comprensión y experiencia con la diabetes (15 minutos)

Resumen de la sección

Los temas cubiertos en la **Sección B. *Su comprensión y experiencia con la diabetes*** incluyen los siguientes:

- Qué es la diabetes
- Las diferencias (y similitudes) entre la diabetes tipo 1 y la diabetes tipo 2
- Algunos mitos comunes y realidades sobre la diabetes

Referencia de la visualización de mapa: **La *casa* en la parte inferior izquierda del mapa y el *camino* hacia la parte izquierda del mapa**

1. Continuemos concentrándonos en la escena de la esquina inferior izquierda del mapa. A la hora de manejar su diabetes, ustedes están en el asiento del conductor. Su red de apoyo y el equipo de cuidados de la salud estarán disponibles para ayudarles, pero controlar los niveles de glucosa en la sangre y la diabetes depende de ustedes. Deberán tomar varias decisiones todos los días. Cuanto más sepan, más posibilidades tendrán de tomar decisiones inteligentes. (continúe leyendo)

2. Ya que cada uno de ustedes viene a esta sesión con su propia experiencia y comprensión de la diabetes, ¿podrían describir la diabetes con sus propias palabras? (haga una pausa y realice el análisis)

Facilitator Tip

Many participants will begin to describe how they feel about diabetes, or how they are feeling in general in response to this question, as opposed to actually describing what diabetes is. This is okay and a very natural response. However, the next few questions are intended to help people better understand what diabetes is (if the group is interested).

3. Let's also take a quick look at another basic definition of diabetes. Locate the *Definition of Diabetes* in the lower left corner of the Map on the *roof* of the *house*. Can I have a volunteer read this definition aloud? (stop and do)

4. Does this definition of diabetes make sense or do you have any questions about it? (stop and discuss)

5. As you might already know, there are different types of diabetes. What are the different types of diabetes, and how are they similar to and different from one another? (stop and discuss)

6. Which type of diabetes do you have? (stop and discuss)

7. In addition to knowing what diabetes is and what type of diabetes you have, you will be able to make smarter decisions if you have the correct information. Focus on the *fork in the road* in the upper left of the Map. Myths can lead you down the wrong road when it comes to managing your diabetes whereas the facts can serve as a road map for better managing your diabetes. (continue reading)

Facilitator Tip

Try to point to the *fork in the road* and the *Myth* and *Fact placeholders* in the upper left of the Map when reading this question.

Consejo para facilitadores

Muchos participantes comenzarán por describir cómo se sienten respecto de la diabetes o cómo se sienten en general en respuesta a esta pregunta, en lugar de describir lo que la diabetes es en realidad. Es una respuesta natural y está bien. Sin embargo, las próximas preguntas tienen como objetivo ayudar a las personas a comprender qué es la diabetes (si el grupo está interesado).

3. ¡Excelente! También observemos brevemente otra definición básica de diabetes. Coloquen la *Definición de diabetes* en la esquina inferior izquierda del mapa en el *techo* de la *casa*. ¿Puede alguien leer esta definición en voz alta? (haga una pausa y espere a que alguien lea)

4. ¿Es esta definición de diabetes clara o tienen alguna pregunta al respecto? (haga una pausa y realice el análisis)

5. Como ya deben de saber, existen dos tipos distintos de diabetes. ¿Cuáles son los distintos tipos de diabetes y cuáles son las similitudes y diferencias entre ellos? (haga una pausa y realice el análisis)

6. ¿Qué tipo de diabetes tiene? (haga una pausa y realice el análisis)

7. Además de saber qué es la diabetes y qué tipo de diabetes tienen, podrán tomar decisiones más inteligentes si tienen la información correcta. Concéntrense en la *bifurcación en el camino* en la parte superior izquierda del mapa. Cuando se trata del control de la diabetes, los mitos pueden llevarlos por el camino equivocado, mientras que las realidades pueden funcionar como una hoja de ruta para un mejor control de la diabetes. (continúe leyendo)

Consejo para facilitadores

Al leer la pregunta, trate de señalar la *bifurcación en el camino* y *los recuadros de Mito y Realidad* en la parte superior izquierda del mapa.

Process Check

Make sure everyone is participating.

8. Let's take a look at some of the most common myths and some of the facts about diabetes. I'm passing out the ***Myth or Fact*** cards. On each of these cards, there is a myth or a fact about diabetes. We'll go around the table and have each person read his or her card one at a time. Then, as a group, decide if the information is a myth or a fact about diabetes and set the card on the correct road in the upper left corner of the Map. (stop and do)

Facilitator Tip

This activity helps set the tone for the session—that it's fun, engaging, and requires participation. You can use any of the ***Myth or Fact*** cards you think will be useful in generating a good discussion. You don't have to use all the cards and you can even add your own myths and facts to the conversation as well.

The important part of this activity isn't so much that they get each answer correct, but that they really think through the information on the card and determine whether it's a myth or fact. This analytical skill will be important throughout their lifelong journey with diabetes.

Comprobación de proceso

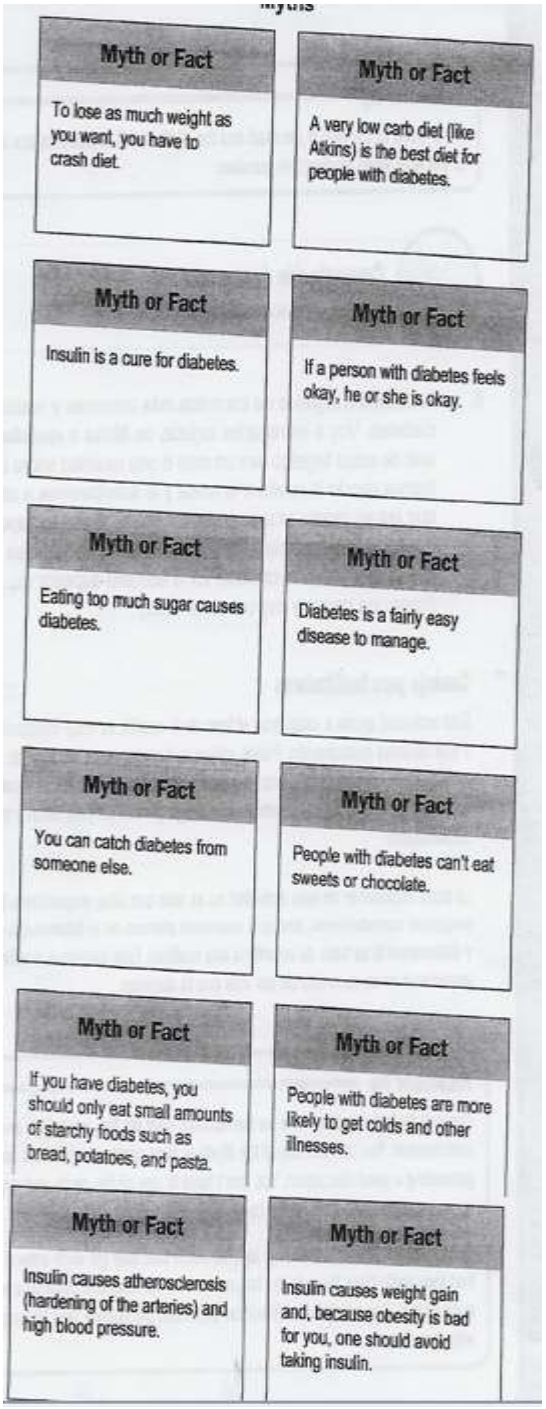
Asegúrese de que todos participen.

8. Analicemos algunos de los mitos más comunes y realidades sobre la diabetes. Voy a entregarles tarjetas de ***Mitos o realidades***. En cada una de estas tarjetas hay un mito o una realidad sobre la diabetes. Iremos dando la vuelta a la mesa y le solicitaremos a cada persona que lea su tarjeta, una por vez. Luego, de manera grupal, decidan si la información es un mito o una realidad sobre la diabetes y coloquen la tarjeta en el camino correcto en la esquina superior izquierda del mapa. (haga una pausa y espere a que lean)

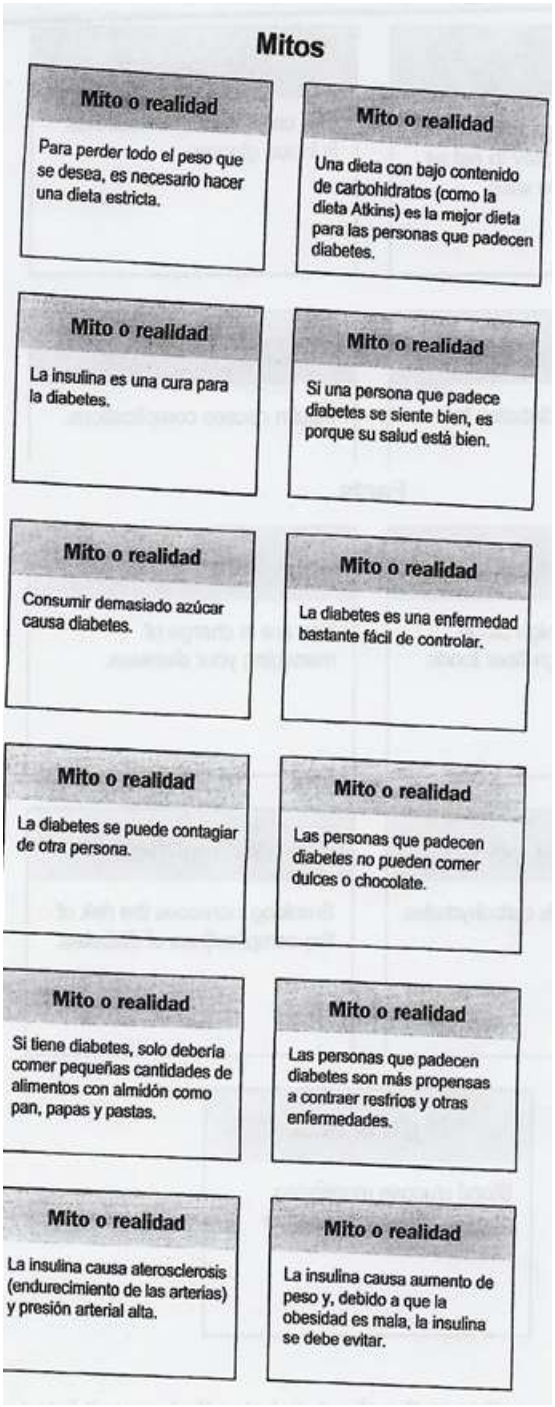
Consejo para facilitadores

Esta actividad ayuda a establecer el tono de la sesión, es decir entretenido, atractivo y que necesita participación. Puede utilizar cualquiera de las tarjetas de ***Mito o realidad*** que considere útil para generar un buen análisis. No es necesario que utilice todas las tarjetas e incluso también puede agregar sus propios mitos y realidades a la conversación.

La parte importante de esta actividad no es solo que ellos respondan a todas las preguntas correctamente, sino que realmente piensen en la información de la tarjeta y determinen si se trata de un mito o una realidad. Esta habilidad analítica será importante en su recorrido de por vida con la diabetes.

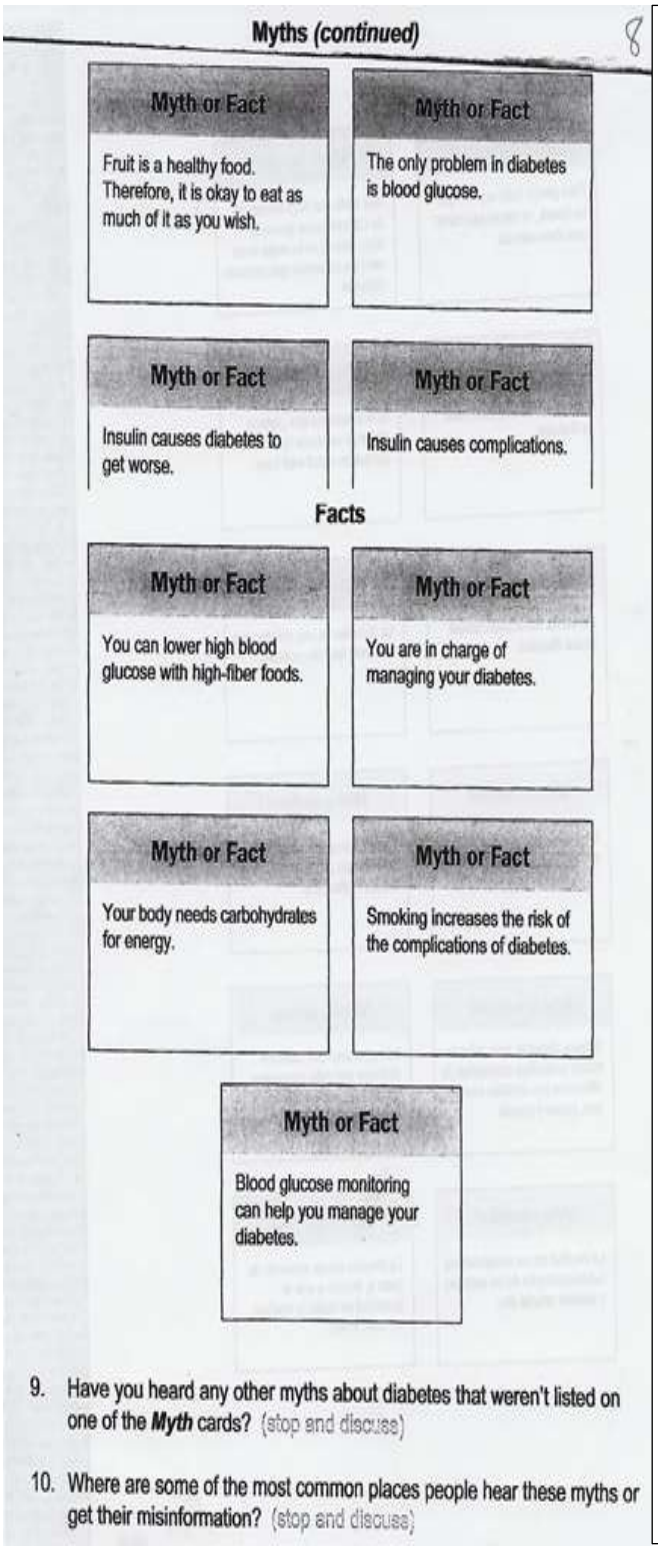


Myth or Fact	Myth or Fact
To lose as much weight as you want, you have to crash diet.	A very low carb diet (like Atkins) is the best diet for people with diabetes.
Insulin is a cure for diabetes.	If a person with diabetes feels okay, he or she is okay.
Eating too much sugar causes diabetes.	Diabetes is a fairly easy disease to manage.
You can catch diabetes from someone else.	People with diabetes can't eat sweets or chocolate.
If you have diabetes, you should only eat small amounts of starchy foods such as bread, potatoes, and pasta.	People with diabetes are more likely to get colds and other illnesses.
Insulin causes atherosclerosis (hardening of the arteries) and high blood pressure.	Insulin causes weight gain and, because obesity is bad for you, one should avoid taking insulin.



Mitos

Mito o realidad	Mito o realidad
Para perder todo el peso que se desea, es necesario hacer una dieta estricta.	Una dieta con bajo contenido de carbohidratos (como la dieta Atkins) es la mejor dieta para las personas que padecen diabetes.
La insulina es una cura para la diabetes.	Si una persona que padece diabetes se siente bien, es porque su salud está bien.
Consumir demasiado azúcar causa diabetes.	La diabetes es una enfermedad bastante fácil de controlar.
La diabetes se puede contagiar de otra persona.	Las personas que padecen diabetes no pueden comer dulces o chocolate.
Si tiene diabetes, solo debería comer pequeñas cantidades de alimentos con almidón como pan, papas y pastas.	Las personas que padecen diabetes son más propensas a contraer resfríos y otras enfermedades.
La insulina causa aterosclerosis (endurecimiento de las arterias) y presión arterial alta.	La insulina causa aumento de peso y, debido a que la obesidad es mala, la insulina se debe evitar.



Myths *(continued)* 8

Myth or Fact	Myth or Fact
Fruit is a healthy food. Therefore, it is okay to eat as much of it as you wish.	The only problem in diabetes is blood glucose.
Insulin causes diabetes to get worse.	Insulin causes complications.

Facts

Myth or Fact	Myth or Fact
You can lower high blood glucose with high-fiber foods.	You are in charge of managing your diabetes.
Your body needs carbohydrates for energy.	Smoking increases the risk of the complications of diabetes.

Myth or Fact

Blood glucose monitoring can help you manage your diabetes.

9. Have you heard any other myths about diabetes that weren't listed on one of the ***Myth*** cards? (stop and discuss)

10. Where are some of the most common places people hear these myths or get their misinformation? (stop and discuss)

Mitos (continuación)

Mito o realidad	Mito o realidad
Las frutas son alimentos saludables. Además, se puede comer la cantidad que se desee.	El único problema en la diabetes es la glucosa en la sangre.
La insulina empeora la diabetes.	La insulina causa complicaciones.

Realidades

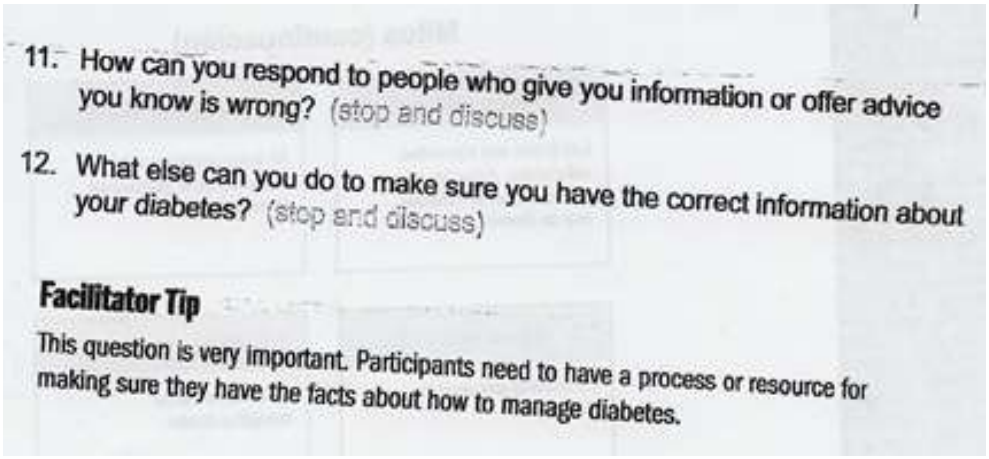
Mito o realidad	Mito o realidad
Medir su glucosa en la sangre puede ayudarle a controlar la diabetes.	Fumar aumenta el riesgo de complicaciones de la diabetes.
Su cuerpo necesita carbohidratos para recibir energía.	El control de la diabetes depende de usted.

Mito o realidad

Puede reducir la alta glucosa en la sangre con alimentos con alto contenido de fibra.

9. ¿Conocen otros mitos sobre la diabetes que no se encontraban en ninguna de las tarjetas de ***Mitos***? (haga una pausa y realice el análisis)

10. Generalmente, ¿dónde suelen escuchar las personas esos mitos o recibir la información errónea? (haga una pausa y realice el análisis)

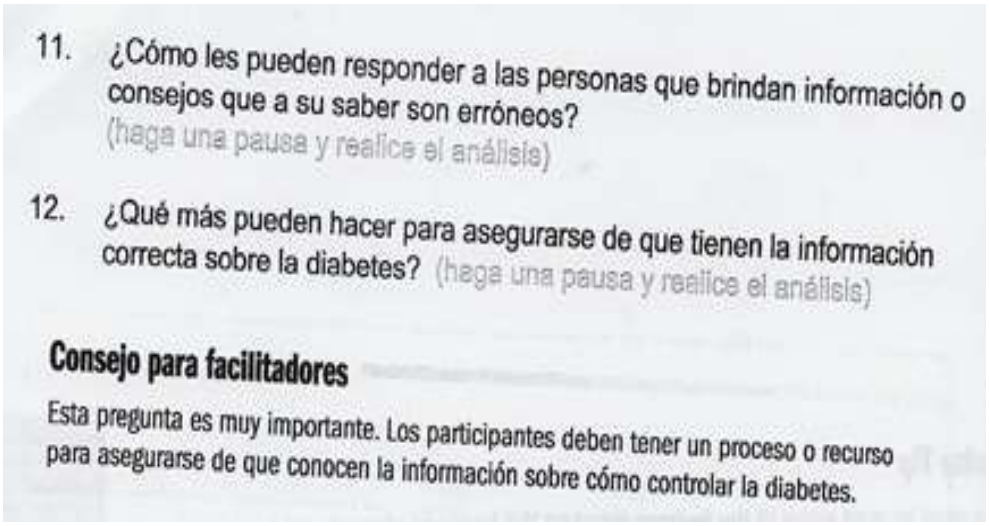


11. How can you respond to people who give you information or offer advice you know is wrong? (stop and discuss)

12. What else can you do to make sure you have the correct information about your diabetes? (stop and discuss)

Facilitator Tip

This question is very important. Participants need to have a process or resource for making sure they have the facts about how to manage diabetes.



11. ¿Cómo les pueden responder a las personas que brindan información o consejos que a su saber son erróneos? (haga una pausa y realice el análisis)

12. ¿Qué más pueden hacer para asegurarse de que tienen la información correcta sobre la diabetes? (haga una pausa y realice el análisis)

Consejo para facilitadores

Esta pregunta es muy importante. Los participantes deben tener un proceso o recurso para asegurarse de que conocen la información sobre cómo controlar la diabetes.

An Emotional Journey (15 minutes)

Section Summary

The topics covered in **Section C. An Emotional Journey** include:

- *Emotions or feelings* about having diabetes and the challenges of managing diabetes

Map visual reference: **The *car* and *baggage* in the upper left of the Map**

1. In addition to understanding diabetes, another challenge for people with diabetes can be dealing with the emotional side of the disease. You might be carrying these feelings with you on your journey like they are excess baggage, as it is shown on the upper left of the Map. (continue reading)

C. Un recorrido emocional (15 minutos)

Resumen de la sección

Los temas cubiertos en la **Sección C. Un recorrido emocional** incluyen los siguientes:

- Emociones o sentimientos acerca de tener diabetes y los desafíos que se presentan con el control de la diabetes.

Referencia de la visualización de mapa: **El *automóvil* y el *equipaje* en la parte superior izquierda del mapa**

1. Además de comprender la diabetes, otro desafío para las personas que padecen diabetes puede ser el hecho de tener que enfrentar el aspecto emocional de la enfermedad. Algunos de los sentimientos que las personas pueden tener se observan en la parte superior izquierda del mapa como un *equipaje* que la persona puede llevar en todo su recorrido de por vida con la diabetes. (continúe leyendo)

Facilitator Tip

You may want to read some of the feelings listed on the *baggage* after you read paragraph **C1**. When it comes to managing diabetes, some of these feelings can be barriers and some can be helpful.

2. How did you feel when you were told you have diabetes? (stop and discuss)
3. What are your feelings today about having diabetes and having to manage it? (stop and discuss)
4. These feelings are common and expected—it's important to recognize them and how they affect the choices you make in caring for your diabetes. The point is not to change your feelings as much as figure out how to use them. (continue reading)
5. You may also have specific feelings related to the different topics we discuss as we continue the Map session. Feel free to talk about how you feel as we continue our discussion. (continue reading)

Consejo para facilitadores

Puede leer algunos de los sentimientos enumerados en el *equipaje* después de leer el párrafo **C1**. Cuando se trata de controlar la diabetes, algunos de estos sentimientos se pueden convertir en obstáculos y otros pueden ser útiles.

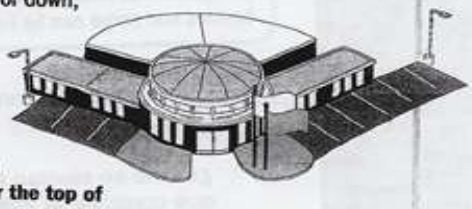
2. ¿Cómo se sintieron cuando les diagnosticaron diabetes? (haga una pausa y realice el análisis)
3. ¿Cómo se sienten en la actualidad respecto de ser diabéticos y tener que controlar la enfermedad? (haga una pausa y realice el análisis)
4. Estos sentimientos son comunes y son de esperarse. Es importante reconocerlos y saber de qué forma afectan las elecciones que usted toma al controlar la diabetes. La idea no es que cambie sus sentimientos, sino que descubra la forma de utilizarlos. (continúe leyendo)
5. Es posible que tenga sentimientos específicos relacionados con los distintos temas que analizamos mientras continuamos con la sesión de mapa. No dude en hablar de sus sentimientos al continuar con nuestro análisis. (continúe leyendo)

D. Having the Information You Need (20 minutes)

Section Summary

The topics covered in **Section D. Having the Information You Need** include:

- More information about diabetes including information (ie, definitions) about insulin, blood glucose, the pancreas, the liver, and body fat
- A discussion about blood glucose including blood glucose targets, what can make your blood glucose go up or down, and some of the signs and symptoms of high and low blood glucose
- How to deal with high and low blood glucose



Map visual reference: **The middle of the Map visual including the *Information Center* near the top of the Map, the large *green sign* in the middle of the Map, and the scene surrounding the *bus***

1. Let's talk some more about what diabetes is. A couple of basic concepts related to understanding and managing your diabetes are blood glucose, also known as blood sugar, and insulin. Let's start this section by taking a look at what these things are, as well as a few others, and how they relate to diabetes. (continue reading)

2. I'm passing out the ***Information You Need*** cards. On each of these cards, there is a description of one of the things listed on the roof of the Information Center near the top of the Map. We'll go around the table and have each person read his or her card aloud one at a time. Then, as a group, decide what the information on that card best matches and place it on that thing. After you have placed all of the cards, we will talk about your answers. (stop and do)

D. Tener la información necesaria (20 minutos)

Resumen de la sección

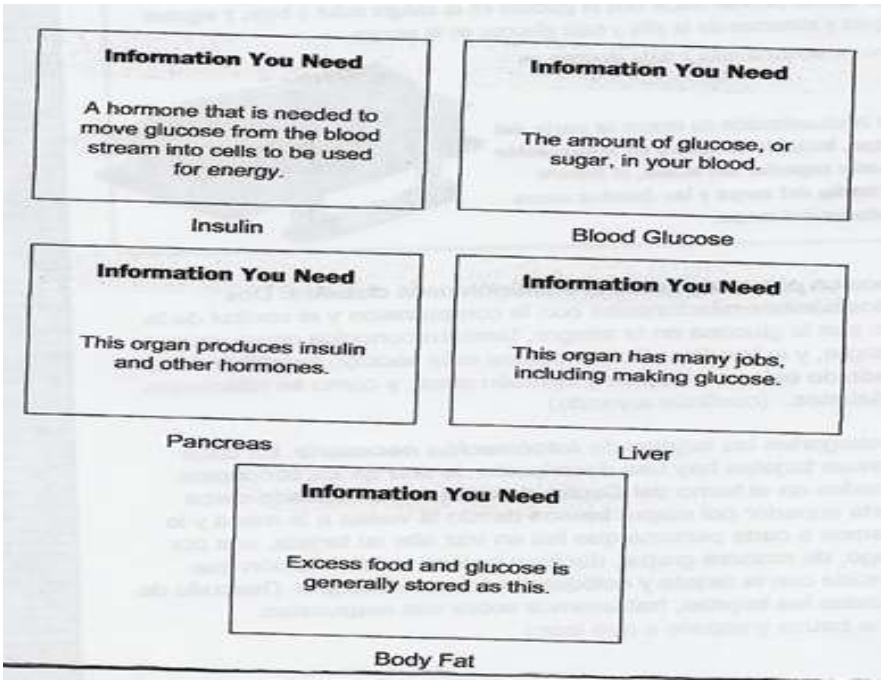
Los temas cubiertos en la **Sección D. Tener la información necesaria** incluyen los siguientes:

- Más información sobre la diabetes que incluye datos (es decir, definiciones) sobre la insulina, la glucosa en la sangre, el páncreas, el hígado y la grasa corporal
- Un análisis de la glucosa en la sangre, incluidos los niveles de la glucosa en la sangre, los cuales pueden hacer que la glucosa en la sangre suba o baje, y algunos de los signos y síntomas de la alta y baja glucosa en la sangre
- Saber cómo manejar la alta y baja glucosa en la sangre

Referencia de la visualización de mapa: **la parte del medio del mapa, incluido el *centro de información* cerca de la parte superior del mapa, el *letrero* grande en el medio del mapa y las *fuentes* cerca de la parte inferior del mapa.**

1. Hablemos un poco más sobre la definición de la diabetes. Dos conceptos básicos relacionados con la comprensión y el control de la diabetes son la glucosa en la sangre, también conocida como azúcar en la sangre, y la insulina. Comencemos esta sección examinando el significado de estos conceptos y también otros, y cómo se relacionan con la diabetes. (continúe leyendo)

2. Voy a entregarles las tarjetas de ***Información necesaria***. En cada una de estas tarjetas hay una descripción de uno de los conceptos mencionados en el techo del *Centro de información* ubicado cerca de la parte superior del mapa. Iremos dando la vuelta a la mesa y le solicitaremos a cada persona que lea en voz alta su tarjeta, una por vez. Luego, de manera grupal, decidan cuál es la información que más coincide con la tarjeta y colóquenla en ese concepto. Después de colocar todas las tarjetas, hablaremos sobre sus respuestas. (haga una pausa y espere a que lean)



Information You Need

A hormone that is needed to move glucose from the blood stream into cells to be used for energy.

Insulin

Information You Need

The amount of glucose, or sugar, in your blood.

Blood Glucose

Information You Need

This organ produces insulin and other hormones.

Pancreas

Information You Need

This organ has many jobs, including making glucose.

Liver

Information You Need

Excess food and glucose is generally stored as this.

Body Fat

Facilitator Tip

Allow the participants to work through and place all the cards—even if they incorrectly place one of the cards the first time. Typically, working through the other cards will help them determine the correct placements of all the cards.

Información necesaria

Una hormona necesaria para desplazar la glucosa desde el torrente sanguíneo hacia el interior de las células para que pueda usarse como energía.

Insulina

Información necesaria

Es la cantidad de glucosa, o azúcar, en su sangre.

Glucosa en la sangre

Información necesaria

Este órgano produce insulina y otras hormonas.

Páncreas

Información necesaria

Este órgano tiene muchas funciones, incluida la producción de glucosa.

Hígado

Información necesaria

El exceso de alimentos y glucosa generalmente se almacena de esta forma.

Grasa corporal

Consejo para facilitadores

Permita que los participantes realicen la tarea y coloquen todas las tarjetas, incluso si colocan una tarjeta mal la primera vez que lo hagan. Generalmente, leer las otras tarjetas les ayudará a determinar el lugar correcto de todas las tarjetas.

3. Next, let's take a closer look at one of these concepts—blood glucose. As the information on the *bus* near the bottom of the Map highlights, the glucose from your blood needs to move into your cells to be used for fuel. Having too much glucose in your blood can make you feel bad and it can cause serious health problems over the long term. These are called the long-term complications of diabetes. (continue reading)

4. To help lower the risk of long-term complications, it is important to keep your blood glucose within your target range. Before we discuss the recommended range (or targets) for someone with diabetes, does anyone know what the fasting blood glucose range is for someone who doesn't have diabetes? (stop and discuss)

5. Okay. The fasting blood glucose range for someone without diabetes is 70 to 99 mg/dL. Now, can anyone tell me what the general target blood glucose range is for someone with diabetes before and after a meal? (stop and discuss)

Facilitator Tip

At the time of printing, the American Diabetes Association recommended a fasting blood glucose target of 80 to 130 mg/dL and less than 180 mg/dL 2 hours after the start of a meal. More or less stringent glycemic goals may be appropriate for individual patients.

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3. Ahora, examinaremos más detenidamente uno de estos conceptos: la glucosa en la sangre. Tal como lo destaca la información que está debajo del *letrero* en el centro del mapa, es necesario que la glucosa se desplace desde el torrente sanguíneo hacia el interior de las células para que funcione como combustible. Tener demasiada glucosa en la sangre puede hacer que se sienta mal y causar graves problemas de salud a largo plazo. Estas son las llamadas complicaciones a largo plazo de la diabetes. (continúe leyendo)

4. Para sentirse mejor y reducir el riesgo de complicaciones a largo plazo, es importante mantener la glucosa en la sangre dentro de los niveles deseados. Antes de analizar el o los niveles recomendados para una persona con diabetes, ¿saben cuál es el nivel de glucosa en la sangre en ayunas para una persona que no tiene diabetes? (haga una pausa y realice el análisis)

5. Bien. El nivel de glucosa en la sangre en ayunas para una persona que no padece diabetes es de 70 a 99 mg/dL. Ahora, ¿alguien puede decirme cuál es el nivel general de glucosa en la sangre para una persona que padece diabetes antes y después de una comida? (haga una pausa y realice el análisis)

Consejo para facilitadores

Al momento de la impresión, la American Diabetes Association recomendaba un nivel de glucosa en la sangre en ayunas de 80 a 130 mg/dL y de menos de 180mg/dL dos horas después de comenzar una comida. Según cada paciente en particular, pueden ser adecuadas metas de glucemia más o menos estrictas.

6. We just discussed the general target blood glucose ranges for adults with diabetes, but as was mentioned earlier, diabetes is a very individual disease. You and your health care team may have set different blood glucose targets. Does everyone know what his or her target blood glucose range is before and after meals? (stop and discuss)

7. Does anyone know what it's called when blood glucose is too high? (stop and discuss)

8. How about when blood glucose is too low? (stop and discuss)

9. To manage your blood glucose, you need to understand the things that can cause blood glucose to go up or down and how these might cause your blood glucose to be off target. Some of these are listed on the *road sign* entitled "*Things That Can Make Your Blood Glucose Go Up or Down.*" Can I have a volunteer read the information on this *road sign* aloud? (stop and do)

10. Okay, now let's take a closer look at each of these. I'm passing out the ***Causes of High and Low Blood Glucose*** cards. We'll go around the table and have each person read aloud the information on his or her card one at a time. Then, as a group, decide if what's on the card might make your blood glucose go up or down and set the card on the *placeholder* above or below the *bus*. (stop and do)

Can Make Blood Glucose Go Up (Hyperglycemia)

Causes of High and Low Blood Glucose	**Causes of High and Low Blood Glucose**
Eating more carbs than usual	Less activity than usual

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6. Acabamos de analizar los niveles generales de glucosa en la sangre deseados para adultos que padecen diabetes, pero como mencionamos anteriormente, la diabetes es una enfermedad que se trata según el caso en particular. Es posible que ustedes y su equipo de cuidados de la salud hayan establecido otros niveles de glucosa en la sangre. ¿Saben todos cuáles son sus niveles deseados de glucosa en la sangre para antes y después de las comidas? (haga una pausa y realice el análisis)

7. ¿Saben cómo se denomina a la glucosa en la sangre demasiado alta? (haga una pausa y realice el análisis)

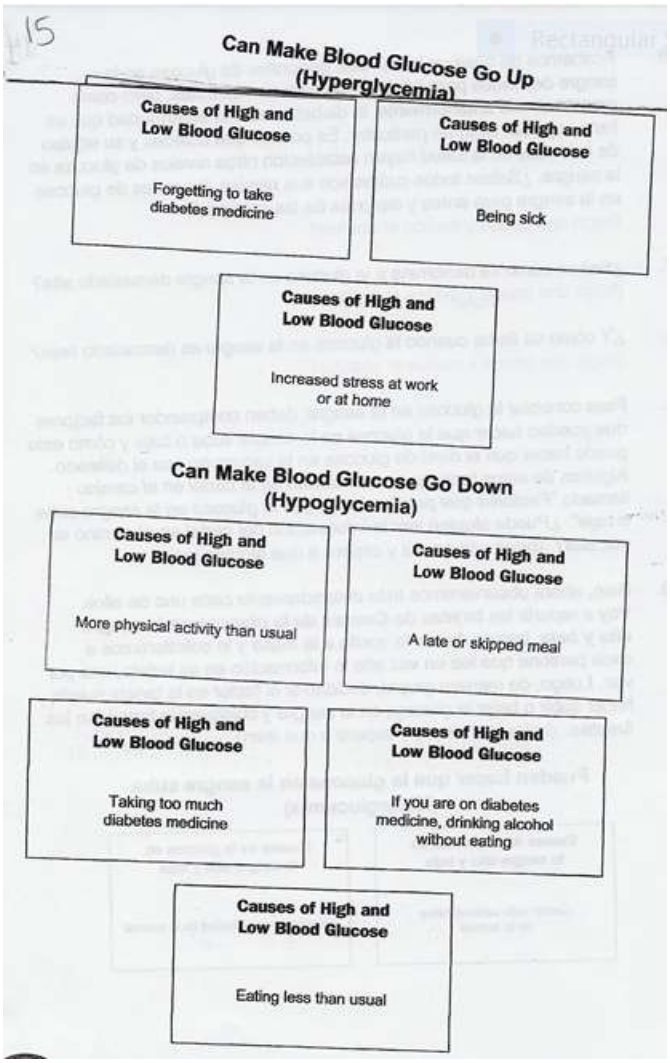
8. ¿Y cómo se llama cuando la glucosa en la sangre es demasiado baja? (haga una pausa y realice el análisis)

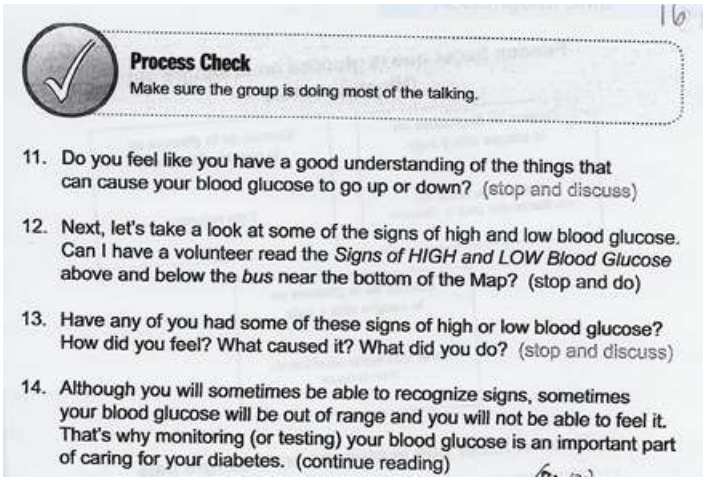
9. Para controlar la glucosa en la sangre, deben comprender los factores que pueden hacer que la glucosa en la sangre suba o baje y cómo esto puede hacer que el nivel de glucosa en la sangre no sea el deseado. Algunos de estos factores se mencionan en el *cartel en el camino* llamado "*Factores que pueden hacer que la glucosa en la sangre suba o baje*". ¿Puede alguien leer la información del *cartel en el camino* en voz alta? (haga una pausa y espere a que alguien lea)

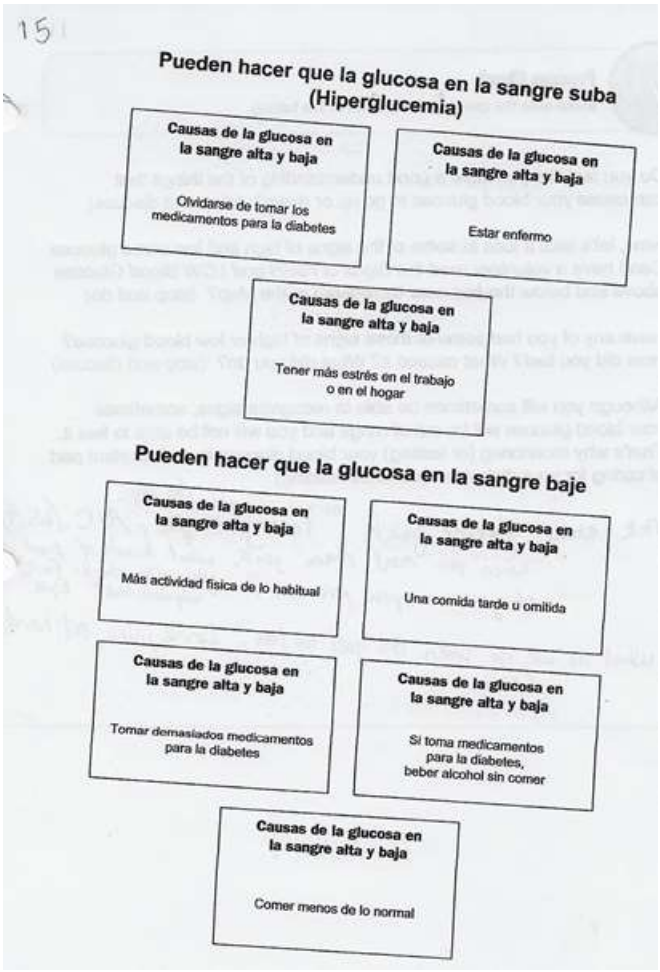
10. Bien, ahora observaremos más detenidamente cada uno de ellos. Voy a repartir las tarjetas de ***Causas de la glucosa en la sangre alta y baja***. Iremos dando la vuelta a la mesa y le solicitaremos a cada persona que lea en voz alta la información en su tarjeta, una por vez. Luego, de manera grupal, decidan si el factor en la tarjeta puede hacer subir o bajar la glucosa en la sangre y coloquen la tarjeta en las *fuentes*. (haga una pausa y espere a que lean)

Pueden hacer que la glucosa en la sangre suba (Hiperglucemia)

Causas de la glucosa en la sangre alta y baja	**Causas de la glucosa en la sangre alta y baja**
Comer más carbohidratos de lo normal	Hacer menos actividad de lo normal


15
Can Make Blood Glucose Go Up
(Hyperglycemia)
Causes of High and Low Blood Glucose
Forgetting to take diabetes medicine
Causes of High and Low Blood Glucose
Being sick
Causes of High and Low Blood Glucose
Increased stress at work or at home
Can Make Blood Glucose Go Down
(Hypoglycemia)
Causes of High and Low Blood Glucose
More physical activity than usual
Causes of High and Low Blood Glucose
A late or skipped meal
Causes of High and Low Blood Glucose
Taking too much diabetes medicine
Causes of High and Low Blood Glucose
If you are on diabetes medicine, drinking alcohol without eating
Causes of High and Low Blood Glucose
Eating less than usual


16
Process Check
Make sure the group is doing most of the talking.
11. Do you feel like you have a good understanding of the things that can cause your blood glucose to go up or down? (stop and discuss)
12. Next, let's take a look at some of the signs of high and low blood glucose. Can I have a volunteer read the *Signs of HIGH and LOW Blood Glucose* above and below the *bus* near the bottom of the Map? (stop and do)
13. Have any of you had some of these signs of high or low blood glucose? How did you feel? What caused it? What did you do? (stop and discuss)
14. Although you will sometimes be able to recognize signs, sometimes your blood glucose will be out of range and you will not be able to feel it. That's why monitoring (or testing) your blood glucose is an important part of caring for your diabetes. (continue reading)



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Pueden hacer que la glucosa en la sangre suba (Hiperglucemia)

Causas de la glucosa en la sangre alta y baja

Olvidarse de tomar los medicamentos para la diabetes

Causas de la glucosa en la sangre alta y baja

Estar enfermo

Causas de la glucosa en la sangre alta y baja

Tener más estrés en el trabajo o en el hogar

Pueden hacer que la glucosa en la sangre baje

Causas de la glucosa en la sangre alta y baja

Más actividad física de lo habitual

Causas de la glucosa en la sangre alta y baja

Una comida tarde u omitida

Causas de la glucosa en la sangre alta y baja

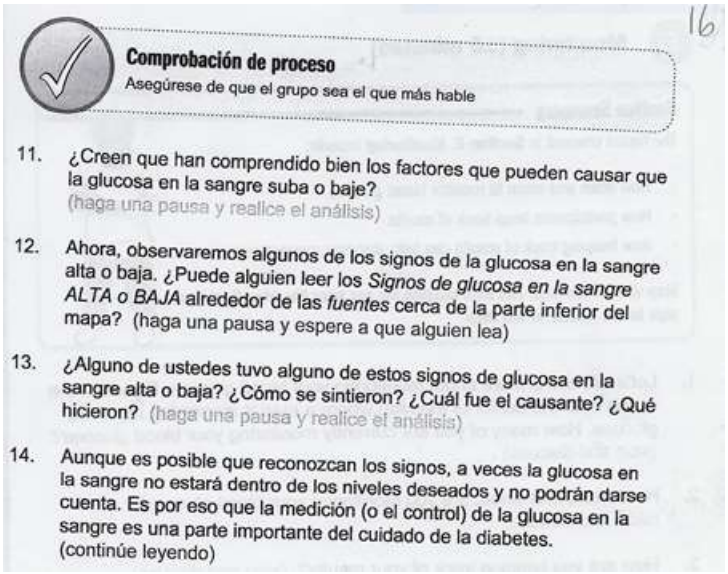
Tomar demasiados medicamentos para la diabetes

Causas de la glucosa en la sangre alta y baja

Si toma medicamentos para la diabetes, beber alcohol sin comer

Causas de la glucosa en la sangre alta y baja

Comer menos de lo normal



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Comprobación de proceso

Asegúrese de que el grupo sea el que más hable

11. ¿Creen que han comprendido bien los factores que pueden causar que la glucosa en la sangre suba o baje? (haga una pausa y realice el análisis)

12. Ahora, observaremos algunos de los signos de la glucosa en la sangre alta o baja. ¿Puede alguien leer los *Signos de glucosa en la sangre ALTA o BAJA* alrededor de las *fuentes* cerca de la parte inferior del mapa? (haga una pausa y espere a que alguien lea)

13. ¿Alguno de ustedes tuvo alguno de estos signos de glucosa en la sangre alta o baja? ¿Cómo se sintieron? ¿Cuál fue el causante? ¿Qué hicieron? (haga una pausa y realice el análisis)

14. Aunque es posible que reconozcan los signos, a veces la glucosa en la sangre no estará dentro de los niveles deseados y no podrán darse cuenta. Es por eso que la medición (o el control) de la glucosa en la sangre es una parte importante del cuidado de la diabetes. (continúe leyendo)

E. Monitoring (15 minutes)

Section Summary

The topics covered in **Section E. Monitoring** include:

- How often and when to monitor blood glucose
- How participants keep track of results
- How keeping track of results can help diabetes management

Map visual reference: **The *man* outside his car near the *blue Rest Area sign* in the center of the Map**

1. Let's talk some more about monitoring your blood glucose. Focus on the scene near the center of the Map where a *man* is monitoring his blood glucose. How many of you are currently monitoring your blood glucose? (stop and discuss)
2. How often, and when, are you monitoring your blood glucose? (stop and discuss)
3. How are you keeping track of your results? (stop and discuss)
4. How do you use the information you get from monitoring? (stop and discuss)
5. How does keeping track of your results help you manage your diabetes? (stop and discuss)

Process Check

Make sure the discussion focuses on the things that participants want and need to know.

6. Do you think you could manage your diabetes without monitoring your blood glucose? Why or why not? (stop and discuss)
7. So, monitoring your blood glucose, tracking your results, and using your results are critical to managing your diabetes. (continue reading)

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E. Medición (15 minutos)

Resumen de la sección

Los temas cubiertos en la **Sección E. Medición** incluyen los siguientes:

- Cuándo y con qué frecuencia deben medirse la glucosa en la sangre
- Cómo los participantes registran los resultados
- Cómo registrar los resultados puede ayudar al control de la diabetes

Referencia de la visualización de mapa: **la *mujer* rodeada por otra mujer y una niña en la parte central inferior del mapa.**

1. Hablemos sobre la medición de su glucosa en la sangre. Concentrémonos en la escena en la parte inferior del mapa donde una *mujer* está midiendo su glucosa en la sangre. ¿Cuántos de ustedes están midiendo actualmente su glucosa en la sangre? (haga una pausa y realice el análisis)
2. ¿Cuándo y con qué frecuencia se debe medir la glucosa en la sangre? (haga una pausa y realice el análisis)
3. ¿Cómo registran sus resultados? (haga una pausa y realice el análisis)
4. ¿Cómo usan la información que obtienen de la medición de la glucosa en la sangre? (haga una pausa y realice el análisis)
5. ¿De qué modo registrar los resultados les ayuda a controlar la diabetes? (haga una pausa y realice el análisis)

Comprobación de proceso

Asegúrese de que el análisis se centre en las cosas que los participantes quieren y necesitan saber.

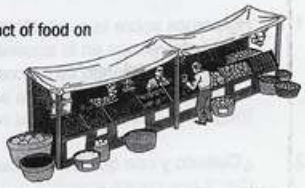
6. ¿Creen que pueden controlar la diabetes sin medir su glucosa en la sangre? ¿Por qué es posible y por qué no? (haga una pausa y realice el análisis)
7. Entonces, podemos decir que medir la glucosa en la sangre, registrar los resultados y usar los resultados es importante para controlar la diabetes. (continúe leyendo)

F. Managing Your Blood Glucose and Your Diabetes (15 minutes)

Section Summary

The topics covered in **Section F. Managing Your Blood Glucose and Your Diabetes** include:

- A discussion about food emphasizing the impact of food on blood glucose
- A discussion about what participants eat, how much they eat, and when they eat



Map visual reference: **The *food stand* near the upper right of the Map**

1. Healthy eating and keeping active are 2 strategies you can use to manage your blood glucose levels, along with taking medicine. These things are pictured along the right side of the Map. (continue reading)
2. First, let's talk about food and healthy eating. What general questions or concerns do you have about diabetes and food? (stop and discuss)

Facilitator Tip

People with diabetes often have many questions about food. You can record people's questions about food on a flip chart or a piece of paper if you want to make sure you cover everything that the group has questions about.

F. Cómo controlar la glucosa en la sangre y la diabetes (15 minutos)

Resumen de la sección

Los temas cubiertos en la **Sección F. Cómo controlar la glucosa en la sangre y la diabetes** incluyen los siguientes:

- Un análisis sobre la alimentación que enfatiza el impacto de los alimentos en la glucosa en la sangre
- Un análisis sobre qué, cuánto y cuándo comen los participantes

Referencia de la visualización de mapa: **El puesto de comida ubicado cerca en la parte inferior derecha del mapa**

1. Tener una alimentación saludable y mantenerse activo son dos estrategias que se pueden utilizar para controlar los niveles de glucosa en la sangre, junto con tomar los medicamentos. Estos factores se pueden observar en la parte derecha del mapa. (continúe leyendo)
2. Primero, hablemos sobre los alimentos y la alimentación saludable: ¿Cuáles son sus inquietudes o preguntas generales sobre la diabetes y los alimentos? (haga una pausa y realice el análisis)

Consejo para facilitadores

Las personas que padecen diabetes generalmente tienen muchas preguntas sobre los alimentos. Puede registrar las preguntas de las personas sobre los alimentos en una pizarra de conferencia o una hoja de papel si desea asegurarse de cubrir todas las dudas del grupo.

3. How can food affect your blood glucose levels? (stop and discuss)

4. What types of food have the biggest impact on blood glucose—that is, which foods have the potential to make your blood glucose go up? (stop and discuss)

5. Take a moment to focus on the *food stand* in the upper right of the Map. There are 3 things about food that will directly affect blood glucose levels. Let's take a look at what these 3 things are—can I have a volunteer read the information listed on top of the *food stand* aloud? (stop and do)

6. First, let's discuss the what you eat. What types of meals and foods do you most commonly eat? (stop and discuss)

7. What impact do your meals and the foods you eat most often have on your blood glucose? (stop and discuss)

8. With what, and when, do you struggle the most with food choices? (stop and discuss)

9. What are some ways you deal with these challenges? (stop and discuss)

Facilitator Tip

You might emphasize the importance of creating a personal meal plan and other food strategies at this point.

3. ¿De qué modo los alimentos pueden afectar los niveles de glucosa en la sangre? (haga una pausa y realice el análisis)

4. ¿Qué tipos de alimentos producen el mayor impacto en la glucosa en la sangre? Es decir ¿qué alimentos tienen el potencial de hacer que la glucosa en la sangre suba? (haga una pausa y realice el análisis)

5. Tómense un momento y concéntrense en el *puesto de comida* ubicado en la parte inferior derecha del mapa. Existen tres factores sobre los alimentos que afectarán directamente los niveles de glucosa en la sangre. Observemos cuáles son esos tres factores. ¿Puede alguien leer en voz alta la información en la parte superior del *puesto de comida*? (haga un pausa y espere a que alguien lea)

6. Primero, hablemos sobre lo que comen. ¿Qué tipos de alimentos y comidas comen con mayor regularidad? (haga una pausa y realice el análisis)

7. ¿Cuál es el impacto de las comidas y alimentos que comen en su glucosa en la sangre? (haga una pausa y realice el análisis)

8. ¿En qué situaciones y con qué comidas les cuesta elegir los alimentos que van a consumir? (haga una pausa y realice el análisis)

9. ¿Cuáles son algunas maneras en las que lidian con estos cambios? (haga una pausa y realice el análisis)

Consejo para facilitadores

En este punto, puede enfatizar la importancia de crear un plan de comidas personal y otras estrategias alimentarias.

10. Next, let's talk about how much you eat, or, the portions of your foods. Even when people are making healthy food choices, they can eat too much. How do you know how much to eat? (stop and discuss)

11. How do you know when you have eaten too much? (stop and discuss)

Facilitator Tip

You might emphasize the importance of certain tools for managing food portions like the plate method, etc.

12. Now, let's talk about when you eat or, the timing of your meals. How many times do you eat each day? (stop and discuss)

13. What times do you usually eat? Do the times change from day to day? (stop and discuss)

14. How does the timing of your meals affect your blood glucose? (stop and discuss)

15. What happens if you skip a meal? (stop and discuss)

16. Does anyone have any other questions related to food they would like to discuss before we move on to the next topic? (stop and discuss)

Facilitator Tip

You may want to mention the Diabetes and Healthy Eating *Conversation Map®* session dedicated to discussing food and healthy eating.

10. Ahora, hablemos sobre cuánto comen o las porciones de las comidas. Aunque las personas elijan alimentos saludables, pueden comer demasiado. ¿Cómo saben la cantidad que se debe comer? (haga una pausa y realice el análisis)

11. ¿Cómo saben que han comido demasiado? (haga una pausa y realice el análisis)

Consejo para facilitadores

Puede enfatizar la importancia de ciertas herramientas para controlar las porciones de los alimentos, como el método del plato, etc.

12. Ahora, hablemos sobre cuándo comen o los horarios de sus comidas. ¿Cuántas veces al día comen? (haga una pausa y realice el análisis)

13. ¿A qué horas comen, generalmente? ¿Cambian los horarios de un día al otro? (haga una pausa y realice el análisis)

14. ¿De qué forma puede afectar el horario de sus comidas su glucosa en la sangre? (haga una pausa y realice el análisis)

15. ¿Qué sucede si omiten una comida? (haga una pausa y realice el análisis)

16. ¿Alguno tiene otra pregunta relacionada con los alimentos que quisiera analizar antes de pasar al próximo tema? (haga una pausa y realice el análisis)

Consejo para facilitadores

Es posible que desee mencionar la sesión de La diabetes y la alimentación saludable de *Conversation Map®* dedicada al análisis de las comidas y la alimentación saludable.

G. Keeping Active and Taking Medicine (15 minutes)

Section Summary

The topics covered in **Section G. Keeping Active and Taking Medicine** include:

- A discussion about keeping active and getting enough physical activity
- A discussion about medicine

Map visual reference: **The *park* scene below the *food stand* and the *house* in the upper right corner of the Map**

1. Another key aspect of managing your diabetes is keeping active or getting enough physical activity. What are some of the benefits of physical activity? (stop and discuss)
2. What types of activities have you tried? How have these affected your blood glucose levels? (stop and discuss)
3. What barriers or challenges have you faced related to physical activity? How did you deal with them? (stop and discuss)

4. When you are going to increase your physical activity level, it's always a good idea to discuss it with your health care team first. Do any of you have any specific questions related to keeping active you would like to discuss before we continue? (stop and discuss)
5. Of course, taking medicine is another way to lower your blood glucose. There are a lot of different medicine options available today. Which diabetes medicines are you taking? (stop and discuss)
6. Do you know how the medicines you are taking for diabetes work to lower your blood glucose? (stop and discuss)

G. Actividad física y toma de medicamentos (15 minutos)

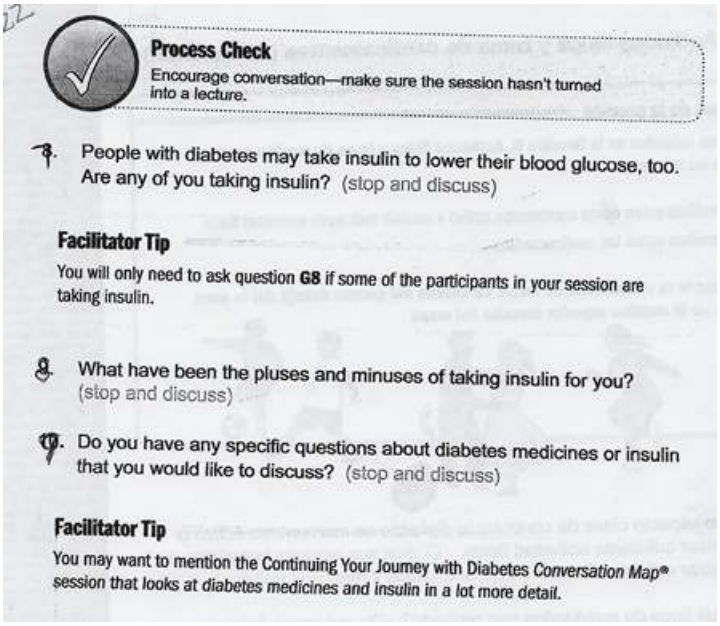
Resumen de la sección

Los temas cubiertos en la **Sección G. Actividad física y toma de medicamentos** incluyen los siguientes:

- Un análisis sobre cómo mantenerse activo y realizar suficiente actividad física
- Un análisis sobre los medicamentos

Referencia de la visualización de mapa: **La escena del parque debajo del la casa ubicada en la esquina superior derecha del mapa**

1. Otro aspecto clave de controlar la diabetes es mantenerse activo o realizar suficiente actividad física. ¿Cuáles son algunos beneficios de realizar actividad física? (haga una pausa y realice el análisis)
2. ¿Qué tipos de actividades han probado? ¿De qué modo influyeron en sus niveles de glucosa en la sangre? (haga una pausa y realice el análisis)
3. ¿Qué obstáculos o desafíos tuvieron que enfrentar relacionados con la actividad física? ¿Cómo lidiaron con ellos? (haga una pausa y realice el análisis)
4. ¿Alguno tiene alguna pregunta específica relacionada con mantenerse activo que quisiera analizar antes de continuar? (haga una pausa y realice el análisis)
5. Desde luego, tomar los medicamentos es otra forma de disminuir la glucosa en la sangre. En la actualidad, existen muchas opciones de medicamentos diferentes. ¿Qué medicamentos para la diabetes están tomando? (haga una pausa y realice el análisis)
6. ¿Saben cómo funcionan los medicamentos para la diabetes que toman para disminuir la glucosa en la sangre? (haga una pausa y realice el análisis)



Process Check

Encourage conversation—make sure the session hasn't turned into a lecture.

7. People with diabetes may take insulin to lower their blood glucose, too. Are any of you taking insulin? (stop and discuss)

Facilitator Tip

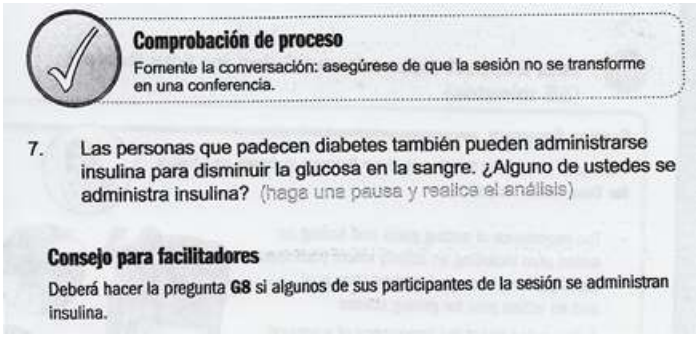
You will only need to ask question **G8** if some of the participants in your session are taking insulin.

8. What have been the pluses and minuses of taking insulin for you? (stop and discuss)

9. Do you have any specific questions about diabetes medicines or insulin that you would like to discuss? (stop and discuss)

Facilitator Tip

You may want to mention the Continuing Your Journey with Diabetes *Conversation Map®* session that looks at diabetes medicines and insulin in a lot more detail.



Comprobación de proceso

Fomente la conversación: asegúrese de que la sesión no se transforme en una conferencia.

7. Las personas que padecen diabetes también pueden administrarse insulina para disminuir la glucosa en la sangre. ¿Alguno de ustedes se administra insulina? (haga una pausa y realice el análisis)

Consejo para facilitadores

Deberá hacer la pregunta **G8** si algunos de sus participantes de la sesión se administran insulina.

8. ¿Cuáles han sido las ventajas y desventajas de administrarse insulina? (haga una pausa y realice el análisis)

9. ¿Tienen preguntas específicas sobre los medicamentos para la diabetes o la insulina que deseen analizar? (haga una pausa y realice el análisis)

Consejo para facilitadores

Es posible que desee mencionar la sesión de Cómo continuar su recorrido con la diabetes de *Conversation Map®* que evalúa los medicamentos para la diabetes y la insulina mucho más detalladamente.

H. Your Support Network and Going for Your Goals (15 minutes)

Section Summary

The topics covered in **Section H. Your Support Network and Going for Your Goals** include:

- The importance of setting goals and having an action plan including an activity where participants identify a long-term goal, a short-term goal and an action plan for getting started
- A discussion about the importance of a support network in helping you achieve your goals

Map visual reference: **The car and other images in the lower right corner of the Map**

1. We briefly mentioned the importance of a support network at the beginning of the session. A support network could include your family, friends, coworkers, health care team, etc, who are your helpers on your journey with diabetes. They are represented in the lower right of the Map. (continue reading)
2. Who is, or could be, a part of your support network? (stop and discuss)
3. What kind of support do you want from them? (stop and discuss)
4. Have you told them the ways they can support and help you? (stop and discuss)
5. At the beginning of the session, we briefly mentioned the importance of having a goal and an action plan to reach your goal because it's easier to make daily choices if you have a plan. Take a moment to think about everything we've discussed during this session. Can you think of a long-term goal and a short-term goal for yourself and 1 thing you could do to start to reach your goals? Remember to make your goals and action plan specific and measurable. (stop and discuss)

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H. Su red de apoyo y en busca de sus objetivos (15 minutos)

Resumen de la sección

Los temas cubiertos en la **Sección H. Su red de apoyo y en busca de sus objetivos** incluyen los siguientes:

- La importancia de establecer objetivos y contar con un plan de acción, incluida una actividad en la que los participantes identifiquen un objetivo a largo plazo, un objetivo a corto plazo y un plan de acción para comenzar
- Un análisis sobre la importancia de una red de apoyo que les ayude a alcanzar sus objetivos.

Referencia de la visualización de mapa: **el *automóvil* y otras imágenes en la esquina superior derecha del mapa**

1. Mencionamos brevemente la importancia de una red de apoyo al comienzo de esta sesión. Una red de apoyo puede incluir a su familia, amigos, *compañeros de trabajo, equipo de cuidados de la salud*, etc., que son las personas que le ayudan en su recorrido con la diabetes. Ellos se encuentran representados en la parte inferior derecha del mapa. (continúe leyendo)
2. ¿Quién es o podría ser una parte de su red de apoyo? (haga una pausa y realice el análisis)
3. ¿Qué clase de apoyo desean recibir por parte de ellos? (haga una pausa y realice el análisis)
4. ¿Les han hablado sobre las formas en las que pueden ayudarles y apoyarles? (haga una pausa y realice el análisis)
5. Al comienzo de esta sesión, mencionamos brevemente la importancia de tener un objetivo y un plan de acción para alcanzar ese objetivo, ya que, si lo tienen, es más fácil tomar decisiones diarias. Tómense un momento para pensar en todo lo que hemos analizado durante esta sesión. ¿Se les ocurre un objetivo a corto plazo y un objetivo a largo plazo para ustedes y qué pueden hacer para empezar a cumplir sus objetivos? Recuerden pensar en objetivos y planes de acción específicos y mensurables. (haga una pausa y realice el análisis)

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Facilitator Tip

It's recommended that you have participants record their response to question **H5**. They can write down their response on a ***Going for My Goals*** card, their blood glucose log book, or whatever else you might want to use for this activity.

You may also choose to expand this activity by getting participants to consider the following questions:

- What are all of your goals related to diabetes and its care?
- What part of living with diabetes is hardest for you? How does that make you feel?
- How does this situation need to change for you to reach your goals or feel better about them?
- Where would you like to be regarding this situation, or your goals, 1 year from now? Six months from now? Three months from now? One month from now? Next week?
- What are the costs and benefits of taking action to improve this situation or reach your goals?
- What are some steps you could take to improve this situation or bring you closer to your goal?
- In what ways can you change your environment (setting) at home or work (ie, eliminate negative triggers or change your routine)?
- What are ways your family and friends can help you?
- Write down 1 to 3 steps or behaviors that you will do when you leave here to change the situation or reach your goal.
- How often will you do this behavior? When is your deadline?
- Write down how you will keep track of your new behavior.
- Write down how you will reward yourself for achieving this behavior.

Source: Funnell MM, et al, *Life with Diabetes: A Series of Teaching Outlines by the Michigan Diabetes Research and Training Center*, 5th edition, © 2014 by the American Diabetes Association, Inc.

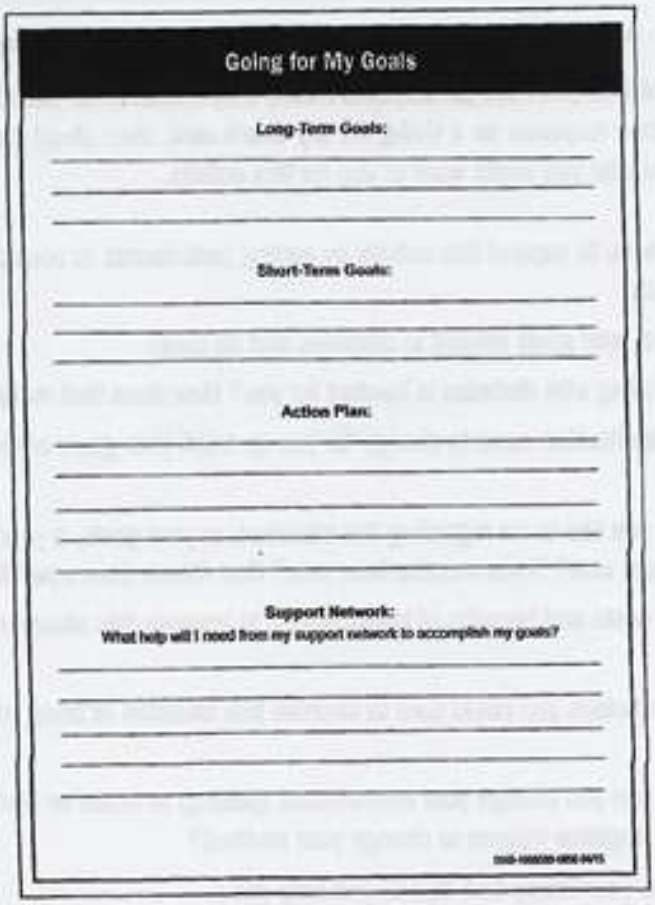
Consejo para facilitadores

Se recomienda solicitarles a las participantes que registren su respuesta a la pregunta **H5**. Pueden escribir su respuesta en una tarjeta de ***En busca de mis objetivos***, su libro de registros de glucosa en la sangre o en cualquier otro material que quieran usar para esta actividad.

También puede elegir expandir esta actividad haciendo que las participantes consideren las siguientes preguntas:

- ¿Cuáles son todos sus objetivos relacionados con la diabetes y su cuidado?
- ¿Qué parte de vivir con diabetes es más difícil para ustedes? ¿Cómo las hace sentir eso?
- ¿Cómo debe cambiar la situación para que puedan cumplir sus objetivos o sentirse mejor con respecto a ellos?
- ¿Qué les gustaría lograr con respecto a esta situación, o a sus objetivos, en un año? ¿En seis meses? ¿En tres meses? ¿En un mes? ¿En la próxima semana?
- ¿Cuáles son los costos y los beneficios de tomar medidas para mejorar esta situación o cumplir sus objetivos?
- ¿Cuáles son algunos de las medidas que podrían tomar para mejorar esta situación o para acercarse a sus objetivos?
- ¿De qué maneras pueden cambiar su ambiente (entorno) en su casa o en su trabajo (es decir, eliminar desencadenantes negativos o cambiar su rutina)?
- ¿Cuáles son algunas de las maneras en las que sus familias y sus amigos pueden ayudarles?
- Escriban 1 a 3 medidas o comportamientos que tendrán cuando se vayan de este lugar para cambiar la situación o cumplir su objetivo.
- ¿Con qué frecuencia tendrán este comportamiento? ¿Cuál es su fecha límite?
- Escriban cómo mantendrán un registro de su nuevo comportamiento.
- Escriban cómo se recompensarán por lograr dicho comportamiento.

Source: Funnell MM, et al, *Life with Diabetes: A Series of Teaching Outlines by the Michigan Diabetes Research and Training Center*, 3rd edition, © 2004 by the American Diabetes Association, Inc.



Going for My Goals

Long-Term Goals:

Short-Term Goals:

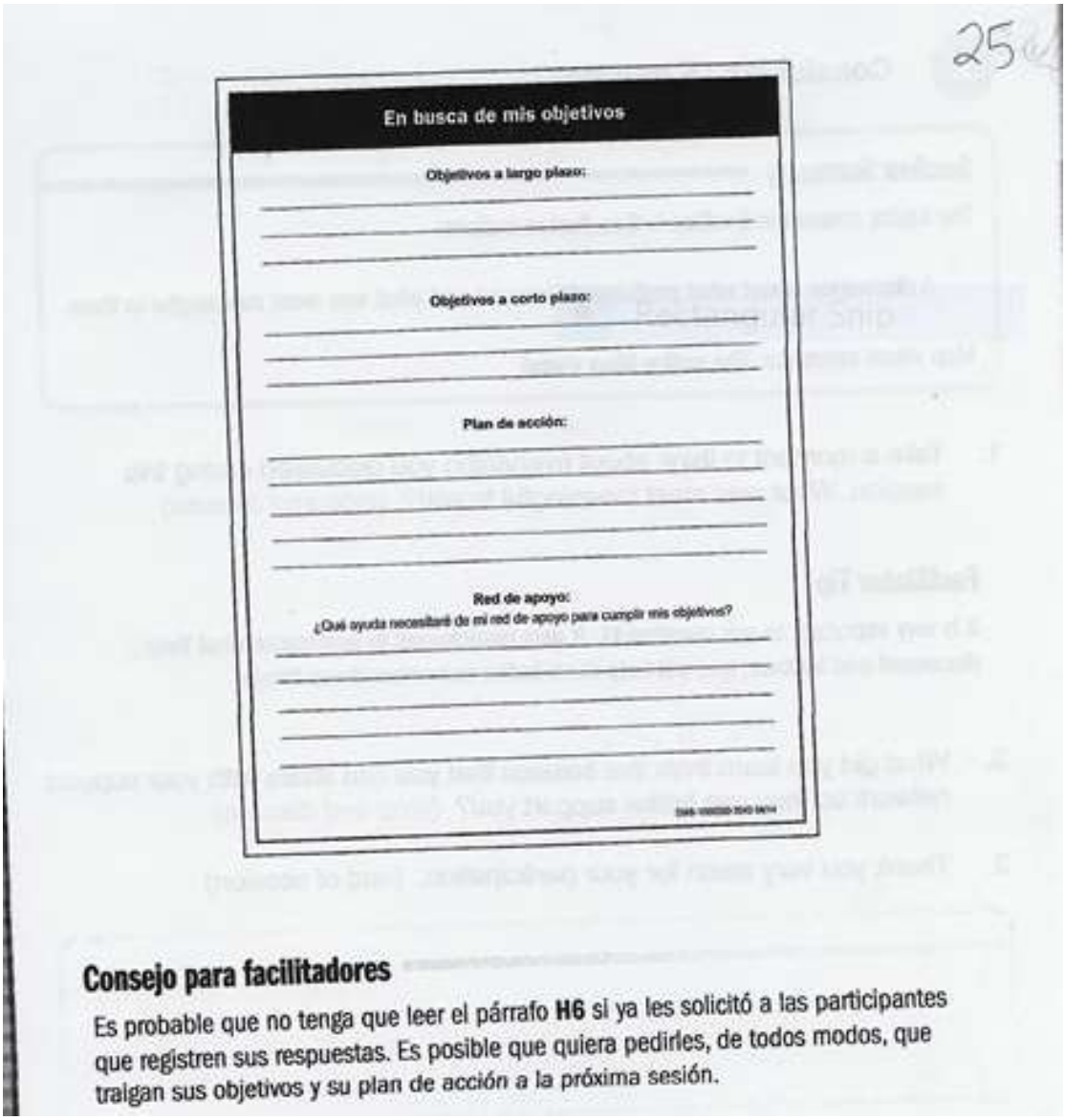
Action Plan:

Support Network:
What help will I need from my support network to accomplish my goals?

Facilitator Tip

You might not have to read paragraph **H6** if you already asked participants to record their responses. You may still want to ask them to bring their goals and action plan with them to the next session.

6. I would like you to write down or remember your goals and action plan for the next time we meet, so that we can discuss how it has been going. (continue reading)



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En busca de mis objetivos

Objetivos a largo plazo:

Objetivos a corto plazo:

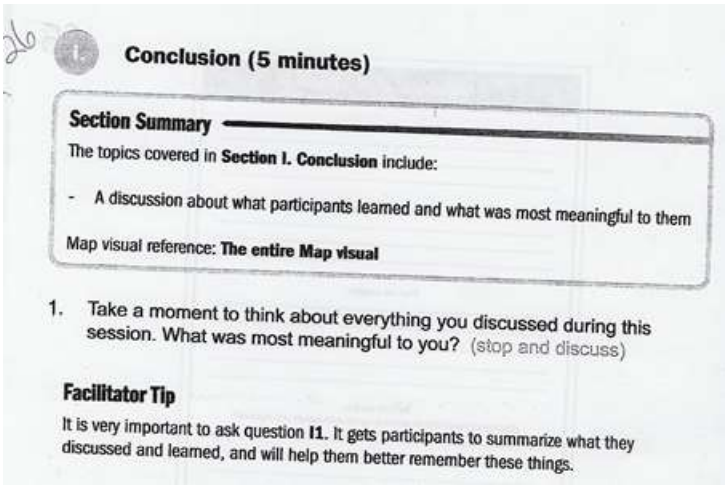
Plan de acción:

Red de apoyo:
¿Qué ayuda necesitaré de mi red de apoyo para cumplir mis objetivos?

Consejo para facilitadores

Es probable que no tenga que leer el párrafo **H6** si ya les solicitó a las participantes que registren sus respuestas. Es posible que quiera pedirles, de todos modos, que traigan sus objetivos y su plan de acción a la próxima sesión.

6. Me gustaría que escriban o recuerden sus objetivos y su plan de acción para nuestro próximo encuentro a fin de que podamos analizar cómo les está yendo. (continúe leyendo)



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I. Conclusion (5 minutes)

Section Summary

The topics covered in **Section I. Conclusion** include:

- A discussion about what participants learned and what was most meaningful to them

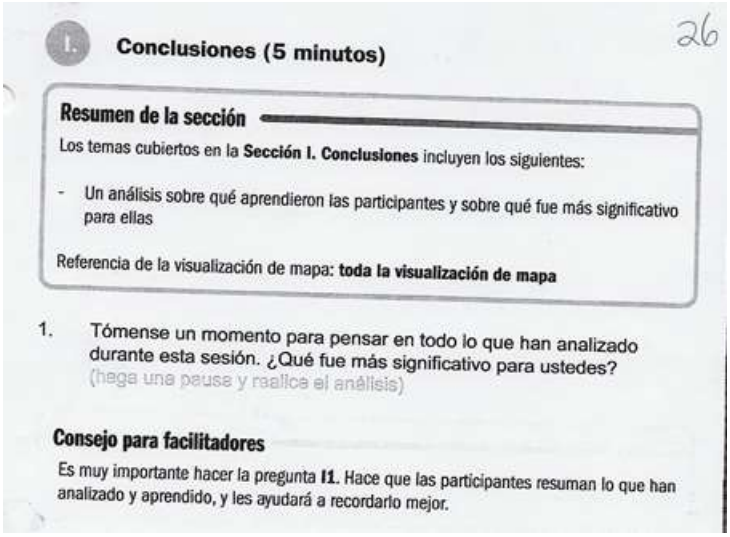
Map visual reference: **The entire Map visual**

1. Take a moment to think about everything you discussed during this session. What was most meaningful to you? (stop and discuss)

Facilitator Tip

It is very important to ask question **I1.** It gets participants to summarize what they discussed and learned, and will help them better remember these things.

Thank you very much for your participation. (end of session)



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I. Conclusiones (5 minutos)

Resumen de la sección

Los temas cubiertos en la **Sección I. Conclusiones** incluyen los siguientes:

- Un análisis sobre qué aprendieron las participantes y sobre qué fue más significativo para ellas

Referencia de la visualización de mapa: **toda la visualización de mapa**

1. Tómense un momento para pensar en todo lo que han analizado durante esta sesión. ¿Qué fue más significativo para ustedes? (haga una pausa y realice el análisis)

Consejo para facilitadores

Es muy importante hacer la pregunta **I1.** Hace que las participantes resuman lo que han analizado y aprendido, y les ayudará a recordarlo mejor.

Muchas gracias por su participación. (fin de la sesión)

Instructions for Authors

Updated on 21 February 2017

The mission of *Clinical Diabetes* is to provide primary care providers and all clinicians involved in the care of people with diabetes with information on advances and state-of-the-art care for people with diabetes. *Clinical Diabetes* is also a forum for discussing diabetes-related problems in practice, medical-legal issues, case studies, digests of recent research, and patient education materials. All submissions to *Clinical Diabetes* will be reviewed by the editorial team and considered for publication if they contain information that would be helpful to the journal's readership. All articles, whether invited or submitted, should be written with general practice, family practice, or internal medicine providers in mind as the main audience

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Manuscripts may be submitted via **http://mc.manuscriptcentral.com/clinical-diabetes**. Before submitting an article, please review the information below and click on the appropriate link for further instructions related to the content and format of the article you wish to submit. All authors should complete, sign, and return the **manuscript submission form** before or soon after submitting their article. Once you have submitted your manuscript, the review process generally takes 4–6 weeks. Failure to follow the manuscript preparation and submission instructions may delay the review process.

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- **Quality Improvement Success Stories**
- Translating Research to Practice

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Quality Improvement Success Story:

APRN-Led Culturally Tailored DSME for Spanish-Speaking Hispanic Americans

Clinical Diabetes *presents the Quality Improvement Success Stories series in collaboration with the American College of Physicians, Inc., and the National Diabetes Education Program. This series highlights best practices and strategies from programs and practices that have successfully improved the quality of care for people with diabetes.*

Describe your practice setting and location.

This is a two-physician, two-nurse practitioner, and one-physician assistant mobile primary care clinic serving an ethnically diverse, uninsured population in central Virginia.

Describe the specific quality gap addressed through the initiative.

This program focused on increasing the delivery of Diabetes Self-Management Education (DSME) to a population reporting the lowest rate of receiving DSME, in fulfillment of the Healthy People 2020 diabetes-specific goal of providing DSME to more people diagnosed with type 2 diabetes. This program provided a culturally tailored approach to actively engage participants to increase their diabetes knowledge.

How did you identify this quality gap? In other words, where did you get your baseline data?

I identified this gap in quality through a comprehensive literature review. It is known that receiving DSME improves diabetes outcomes, and the majority of patients with diabetes attending this clinic did not have DSME available to them that was affordable, in a language they would understand, at an understandable literacy level, and that was culturally relevant to the activities and foods frequently encountered in this population.

Summarize the initial data for your practice (before the improvement initiative)

There were no available culturally tailored programs being offered through our health care organization. There were others in the area, but they were not accessible to our patients. Furthermore, this practitioner had a 28% rate of patients with diabetes with HbA1Cs that were less than 9%.

What was the time frame from initiation of your quality improvement (QI) initiative to its completion?

This was a three month initiative offering a one-day class on October 31, 2016, with post-program HbA1Cs measured no later than January 31, 2017. Following IRB exemption and approval by the Regulatory and Compliance Committee, recruitment began on October 1, 2016.

Describe your core QI team. Who served as project leader, and why was this person selected? Who else served on the team?

The senior nurse practitioner served as project leader. She is board certified in advanced diabetes management with many years of experience in culturally tailored

approaches to DSME. The team also included bilingual staff members fulfilling the role of community health workers. The medical director of the clinic served as physician champion.

Describe the *structural* changes you made to your practice through this initiative.

The healthcare organization had little experience with quality improvement projects led by advanced practice doctoral graduate nursing students. There is now a proposed protocol for future doctoral graduate nursing students to serve as a guide navigating along the IRB committee approval process. This project has paved the way for future group programs to be able to be organized in a streamlined fashion while adhering to HIPAA and data security measures.

Describe the most important changes you made to your *process* of care delivery.

The 2017 Strategic Quality Plan goal is to increase opportunities for physicians and employees to innovate and improve care delivery. This project incorporated a patient satisfaction survey specific for this program and received high score ratings. Previous attempts at trying to capture patient satisfaction had not been program-specific to provide meaningful feedback.

Are you a member of the American College of Physicians, Inc. (ACP)? ___Yes _X_No

Summarize your final outcome data (at the end of the improvement initiative) and how it compared to your baseline data.

A Wilcoxon Signed Rank Test revealed a statistically significant increase in SKILLD knowledge scores following the intervention, $z = -2.041$, $p = .041$, with a large effect size ($r = .545$). The median SKILLD post-test score ($Mdn = 5$) was higher than the median SKILLD pre-test score ($Mdn = 3$). While there were no statistically significant changes in self-efficacy or

HbA1c, more than 70% of participants demonstrated an increase in self-efficacy; more than half (60%) of participants had improved or unchanged HbA1c measurements. Participant satisfaction scores were high; on average, participants gave the program a 97% rating.

What are your next steps?

This was a pilot project to test the feasibility of increasing culturally tailored DSME to our patients with diabetes. A complete program consists of four of these 2-hour classes. In discussion is the possible expansion of this program for a cohort who will receive all four classes.

What lessons did you learn through your QI process that you would like to share with others?

A physician champion is invaluable. Also, frequent communication between clinical staff and administrative staff throughout the IRB process will facilitate continuity and timeliness.