Community-based Diabetes Education for Latinos

The Diabetes Empowerment Education Program

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Purpose

The purpose of this study was to conduct a diabetes education program delivered by community health workers (CHWs) in community settings and to evaluate its effectiveness in improving glycemic control and self-management skills in Hispanics/Latinos with type 2 diabetes.

Methods

Trained CHWs recruited Hispanic/Latino community residents with self-reported type 2 diabetes, implemented intervention in nonclinical locations, and collected data on diabetes knowledge, self-care behaviors, self-efficacy, depression, A1C, weight, and blood pressure. Classes applied participatory techniques and were delivered in 2-hour group sessions over 10 weeks. Two focus groups collected qualitative postintervention data.

Results

Seventy participants enrolled, and 47 completed pretest and posttest data. Improvements were significant for A1C (P = .001) and systolic blood pressure (P = .006). Other positive outcomes were diabetes knowledge, physical activity, spacing carbohydrates, following a healthy eating plan, and eating fruits and vegetables. Improved behaviors also included foot care, glucose self-monitoring, and medication adherence. Depressive symptoms showed a positive trend in intent-to-treat analysis (P = .07), but self-efficacy did not change significantly (P = .142). Qualitative information reported an increase in participants' perceived competence in self-care and a positive

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influence of CHWs in participants' compliance with the program.

Conclusions

A diabetes self-management education program for Hispanics/Latinos led by CHWs can be implemented in community settings and may effectively improve behavioral skills and glycemic control.

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Hispanics/Latinos in the United States experience a higher prevalence of diabetes compared with non-Hispanic whites[1] and show high levels of nonadherence to diabetes self-care practices.[2,3] Self-management is negatively affected by low income, low education, lack of access to care, and cultural and linguistic barriers.[3] Strategies recommended to improve self-management include culturally appropriate health education interventions and their delivery in community settings.[4] The former can improve self-care compliance[5,6]; reduce hemoglobin A1C (A1C) levels, blood pressure, and cholesterol; and significantly increase self-efficacy.[6] Limited research documents delivery of health education interventions in community settings[7] and the evaluation of effective implementation in minority and low-income populations.[8]

Community health workers (CHWs) are effective in delivering diabetes health education in a culturally appropriate manner, improve knowledge and behavior in diabetic patients,[9,10] provide social support, and facilitate maintenance.[11] CHWs are also an important element of community empowerment strategies intended to address health disparities,[12,13] but evidence of their effectiveness in delivering positive health outcomes remains limited.[11] This paper is aimed at addressing some of the gaps in the literature by describing an educational intervention, the Diabetes Empowerment Education Program (DEEP), which uses trained CHWs to educate Hispanic/Latino residents in diabetes self-management.

Background

Under the Racial and Ethnic Approaches to Community Health (REACH) 2010 initiative,[14] the Chicago Southeast Diabetes Community Action Coalition (CSDCAC) was formed to reduce diabetes-related morbidity and mortality in Southeast Chicago communities. The initial community assessment found high prevalence of diabetes, overweight and obesity, diabetes complications, low health care coverage, deficient health care quality, insufficient self-care practices, low health literacy, and cultural and linguistic barriers particularly among its Hispanic/Latino residents.[15] The coalition's action plan to address the identified needs involved supporting the update and tailoring of DEEP, the training of local CHWs, providing the community settings, and engaging in outreach activities for the promotion and implementation of the program. A pilot study was conducted to (1) test the feasibility of implementing a linguistic and culturally appropriate diabetes education program (DEEP) led by CHWs in a community setting, (2) provide preliminary information on the effectiveness of this educational program in improving glycemic control in persons living with type 2 diabetes, and (3) provide preliminary information on the effectiveness of this educational program in improving self-management behaviors in persons living with type 2 diabetes.

Methodology

This pilot study was conducted at 2 community self-care centers (nonclinical settings) associated with the coalition between 2006 and 2007. CHWs trained by research staff from the University of Illinois at Chicago (UIC) recruited participants with the coalition's assistance, delivered the educational sessions, and collected the data. Evaluation activities were led by UIC staff using quantitative and qualitative methods. The quantitative evaluation measured short-term changes in diabetes indicators using a nonexperimental pretest-posttest single group design. In this pilot study, community residents with diabetes received self-management education for 10 weeks from CHWs trained in the implementation of DEEP. The main outcome was pretest-posttest change in A1C. Secondary outcomes were pretest-posttest changes in diabetes-related self-efficacy, diabetes knowledge, consumption of fruits and vegetables, spacing carbohydrates, weight, minutes of daily physical activity, and depressive symptoms. After completion of the educational intervention, the qualitative evaluation was conducted in June 2007 using focus groups with former program participants to extend and explain findings from the quantitative evaluation.

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Intervention

DEEP was developed by UIC's Midwest Latino Health Research Training and Policy Center, building upon efforts by Latino Health Access from Santa Ana, California, and was specifically designed to address the capacity building needs of CHWs. DEEP has 2 components that apply participatory techniques and principles of adult education[16]: (1) The Training of Trainers (TOT), a 20-hour workshop that prepares CHWs to implement the educational curriculum for community residents, and (2) The Diabetes Education Program, a series of educational sessions that empower persons living with or at risk of diabetes to address their self-care needs, by increasing diabetes knowledge, developing self-management skills, and facilitating behavioral change. This highly interactive program has a curriculum originally developed in Spanish and later translated into English to make it applicable to the growing bilingual Hispanic population. It is divided into 8 modules that cover recommended diabetes self-management education (DSME) areas[4]: diabetes risk factors, diagnosis, treatment, complications, nutrition, physical activity, psychosocial aspects, self-care skills, goal setting and identification of important clinical markers, effective communication with providers, and utilization of community resources. The curriculum presents a step-by-step guide to every session; covers nutrition, physical activity, and psychosocial issues in a culturally competent manner; and offers strategies to address low literacy levels among participants.

Consistent with principles of adult education[16] and empowerment theory,[17] the curriculum emphasizes the cycle of knowledge—reflection—action throughout the course and at every session, allowing participants to gain understanding of their personal situation (clinical, social, emotional, etc) and facilitating informed decision making. The delivery of the program becomes an empowering process: CHWs engage participants in their natural environment as equal partners, guide them in the process of acquiring knowledge, help them expand their social network and develop an identity and awareness of their context, help them develop decision-making and behavioral skills for self-sufficiency that are applied to the group and individual activities, and involve them in evaluation of interventions.[18] As a result, participants learn to choose their own behavioral goals; create balanced diets; increase physical activity; measure their own blood glucose, blood pressure, and weight; learn to check their feet; improve adherence to medications; and maintain personal logs.

Training of CHWs

Four Spanish-speaking CHWs from 2 community-based organizations (Centro Comunitario Juan Diego and Ewing Self-care Center), and residents of the target community, underwent the TOT and received from UIC staff a certificate of completion in the delivery of the educational curriculum. These CHWs received additional training in human subjects' protection (institutional review board certification); the standard use of blood glucose meters, blood pressure monitors, and the DCA 2000+ analyzer (Bayer Healthcare, LLC, Mishakawa, Indiana) for the evaluation of A1C; and the use of written instruments for data collection and reporting. At the implementation of the pilot study, CHWs had been facilitating diabetes sessions for at least 1 year in the context of the REACH 2010 programs, with supervision and support from UIC staff.

Participant Recruitment

Between May 2006 and March 2007, fliers, posters, and newspaper advertisements in English and Spanish invited community residents to participate in the study. Health fairs and screenings; visits to schools, senior centers, and Young Men's Christian Associations (YMCAs); and community gatherings served also as settings to present the study and to invite participants to enroll. The CHWs identified potential candidates and presented appropriate information regarding the study. Once participants agreed to participate, they signed informed consent forms. To be included, participants had to be Hispanic/Latino residents of the Southeast Chicago communities or surrounding areas and to be 18 years or older. Diabetes status was ascertained by a positive answer to the question "have you ever been told that you have diabetes?" Whenever possible, diabetes status was confirmed by medical records. Participants included newly diagnosed patients and those already diagnosed and under treatment. Reasons for exclusion were cognitive impairment, terminal illness (cancer, AIDS, etc), intent to travel within the following 3 months, and refusal to sign informed consent forms.

Educational Sessions

Two-hour sessions were scheduled every week for 10 weeks and were led by a team of 2 CHWs (facilitator and

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assistant). Groups were formed based on their language proficiency, and accordingly, sessions were conducted in English or Spanish. The first meeting served to register participants and to collect informed consent and baseline data. Consent was generally obtained in groups but obtained individually when participants were not able to attend the first group meeting. If individuals refused to give consent, they were allowed to participate in classes, but their data were not collected. After the registration session, participants attended 8 weeks of instruction. After 8 weeks, one last meeting served to collect posttest data and to celebrate graduation, for a total of 10 sessions. In between sessions, facilitators maintained regular contact with participants to motivate their attendance. Class size ranged from 10 to 15 participants, including family and friends. The setting for the educational sessions (churches, schools, senior centers, community centers), the time of day, and the order of the instructional modules were decided by each group to fit their preference. To receive a certificate of completion, participants had to attend at least 8 out of 10 sessions. Participants missing a class were encouraged to attend make-up sessions. Whenever possible, participants without regular medical care were referred to community clinics, private doctors, or other community resources.

Measures

CHWs collected data and reported to UIC staff. With the exception of demographics and access to care that were collected only at baseline, all other measures were taken at preintervention and postintervention. Diabetes knowledge was measured using the Diabetes Knowledge Questionnaire (DKQ-24) from the Starr County Diabetes Education Study,[19] which requests true/false responses to a set of statements about diabetes, its diagnosis, its complications, and its treatment. Self-care behaviors were measured using the Summary of Diabetes Self-Care Activities (SDSCA), a self-reported 11-item questionnaire that inquires about 5 different self-care categories, including healthy eating, physical activity, blood glucose testing, foot care, and smoking.[20] Depression was evaluated using the Patient Health Questionnaire (PHQ-9) Quick Depression Assessment scale. This scale asks questions about the individual's emotional well-being over a 2-week period.[21] The Diabetes Empowerment Scale–Short Form (DES-SF) from the University of Michigan was used to measure the psychosocial self-efficacy of patients with diabetes. The DES-SF is an 8-item scale with ratings for each item ranging from 1 to 5. Higher ratings indicate greater self-efficacy.[22]

Clinical outcomes included height, weight, A1C, self-monitored blood glucose, and blood pressure. Height and weight were measured using a step balance and metric tape that were carried to all the locations for every session. Blood glucose was measured using glucose meters provided by an educational grant from Bayer Pharmaceuticals (Leverkusen, Germany). Blood pressure was measured with an automatic monitor Omron model HEM-711AC (Omron Healthcare, Vernon Hills, Illinois). A1C was measured with the DCA 2000+ analyzer (Bayer Healthcare, LLC), using the finger stick method.

Qualitative Evaluation

To gain deeper understanding of the effectiveness of the program and to gather additional information on some of the diabetes self-care behaviors that did not show change with DEEP, former participants were invited to attend 2 focus groups. Using contact information collected during the intervention phase, CHWs called participants by telephone and invited them to attend 1 of 2 focus groups to be held at the community centers that hosted the program. Those contacted were informed of the purpose of the meetings, the time, and the location. The focus groups' participants signed informed consent forms and received reimbursement to cover transportation expenses for their participation in these sessions. CHWs did not attend. The discussions were led by 2 bilingual Hispanic researchers who had not participated in the implementation of the educational sessions and were not familiar with the participants. Discussions were guided by a questionnaire that addressed diabetes knowledge, diabetes self-care activities, emotional well being, self-efficacy with diabetes management/care, and subjective awareness of physical blood glucose changes. These questions were intended to address the lack of change on consumption of high-fat foods and exercise among all participants and differences in depression scores between men and women. Questions regarding the likes and dislikes of DEEP were included to evaluate the cultural appropriateness and acceptability of the program. Additional questions included assessing the awareness of community resources, social and environmental barriers to diabetes management, and suggestions to improve DEEP for future participants.

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Data Management and Analysis

Anticipating a significant amount of missing data, CHWs recorded class attendance and, whenever possible, reasons for absence. Attrition was considered when a participant missed 2 classes or more without make-up sessions. Make-up sessions were one-on-one meetings with the CHWs in which the content of the missed session was reviewed prior to the participant's rejoining the group. Upon collection, quantitative data were entered and analyzed using SPSS software (SPSS 15.0 for Windows; SPSS Inc, Chicago, Illinois). Descriptive analyses included frequency tables and cross-tabulations comparing gender and age groups. Pretest and posttest scores on diabetes knowledge and behavioral and clinical outcomes were compared using paired 2-tailed *t* tests. χ^2 analyses were used to identify relationships between categorical variables (gender, health insurance, marital status, compliance). Available data on dropouts and those remaining in the study were compared. Intent-to-treat analyses were conducted for A1C and depression scores using the observed pretest values to impute missing data.

Qualitative data from the focus groups were collected with digital recorders and entered in a computer for transcription and analysis. The facilitator and note taker reviewed the transcripts for common themes. The facilitator defined the codes and assigned quotes from the transcription records. Results were reported for each one of the themes.

Results

A total of 108 community residents enrolled in 12 courses between May 2006 and March 2007. Of these, 70 were Hispanics/Latinos with a diagnosis of diabetes. Participants were 24 to 84 years old (mean, 58.2 years), had an average of 11.8 years with the disease, and had 6.8 years of schooling. Other demographic variables are presented in Table 1.

Table 2 shows a significant increase in diabetes knowledge and improvements in physical activity and nutrition practices with the exception of reduction of high-fat foods. Self-care practices such as foot care, self-monitoring of glucose levels, and adherence to medications also improved significantly. From among the clinical markers, the group showed a significant reduction in A1C and systolic blood pressure. Intent-to-treat analysis that assumed no pretest-posttest change for A1C missing values was still significant at *P* = .001. Weight reduction did not reach statistical significance.

Table 1

Baseline Demographic Characteristics (N = 70)

Characteristics	
Age, mean (SD), y	58.2 (13.1)
Female, N (%)	53 (75.7)
Years of education, mean (SD)	6.8 (3.5)
Years since diabetes diagnosis, mean (SD)	11.8 (10.3)
Marital status, N (%)	
Married/unmarried, living with partner	41 (58.6)
Single/divorced/widowed	28 (40)
Insurance status, N (%)	
Insured	41(58.6)
Income per month, N (%)	
<$1600	41(58.6)
$1601-$2400	3 (4.3)
Not reported	24 (34.3)

For the DES-SF, pretest scores ranged from 8 to 40, with a mean of 27.8 (standard deviation [SD], 7.99); posttest scores also ranged from 8 to 40, with a mean of 30.50 (SD, 9.30). Differences between pretest and posttest scores were not significant (*P* = .142). A subsample of 33 participants (26 women and 5 men) responded to the depression questionnaire and showed a significant reduction in posttest scores (*P* = .04). These values did not remain significant in the intent-to-treat analysis but showed a positive trend (*P* = .07).

The sample reported an attrition of 32.86% (23 of 70), with participants presenting different reasons to leave the program: 11(15.7%) of those leaving the program reported going back to work or traveling to Mexico, 9 (12.9%) did not report a reason for dropping out, and 3 (4.3%) dropped out at some point but later resumed classes to completion. There was no difference in A1C values (*P* = .738) between completers and noncompleters. However, completers were older (57.3 vs 51.3 years, respectively) and had the disease for a longer period of time (12.4 vs 5.8 years, respectively). χ^2 analyses evaluating the impact of health insurance on attendance did not reach statistical significance due to small

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Table 2

Diabetes Empowerment Education Program: Baseline and 3-Month Posttest Results

Variable	Pretest	Posttest	P*
A1C, %	8.39 (1.96)	7.79 (1.67)	<.001
Systolic blood pressure, mm Hg	146 (22.7)	137 (16.7)	.006
Diabetes knowledge, % correct	68.8 (11.2)	86.4 (11.2)	<.000
Followed a healthy eating plan†	3.3 (2.2)	4.9 (1.5)	<.000
Space carbohydrates throughout the day†	2.9 (2.1)	4.8 (1.8)	<.000
5+ servings of fruits/vegetables†	3.7 (2.3)	5.7 (1.6)	<.001
30 minutes of physical activity†	2.8 (2.3)	4.0 (2.3)	.013
Test blood glucose†	3.6 (3.0)	5.1 (2.1)	<.000
Check feet†	3.8 (3.2)	5.4 (2.3)	.005
Check inside of shoes†	3.4 (3.3)	5.5 (2.3)	<.000
Take recommended medications†	5.5 (2.5)	6.6 (1.3)	.009
Depression	8.15 (6.16)	6.2 (5.73)	.04
Self-efficacy	27.8 (8)	30.5 (9.3)	.142

Data are presented for participants who completed pretest and posttest. Data are presented as the mean ± standard deviation.
*P values represent within-group differences in 2-tailed t tests.
†Number of days in the week the behavior was practiced.

sample cells but showed a trend toward health insurance supporting attendance. χ^2 analyses on marital status did not support an association between being married/living with partner and attendance to the program.

Qualitative Evaluation

At the end of the education intervention period, 2 focus groups were implemented with 15 (13 female and 2 male) diabetes class graduates. The majority of participants were Hispanic/Latino and between the ages of 25 and 85 years. Common themes were found across both focus groups and are presented below.

Awareness of program. All participants were familiar with or had used services at the community agencies that hosted the DEEP classes and primarily heard about the program through community announcements and word of mouth. CHWs were viewed as important for the recruitment of community residents into the program.

> “. . . I learned about diabetes classes through [name of CHW] and [name of CHW] because they went to our . . . church and announced them.”

Diabetes knowledge. The most common response among participants acknowledged the importance of diabetes education in modifying eating habits by balancing meals and paying attention to portion sizes. They agreed that the key factor in improving their diabetes management was balancing meals and portion sizes. Other important knowledge gained included foot care; types, causes, and symptoms of diabetes; and the notion that diabetes is a chronic disease that affects their lifestyle.

> “. . . I learned that medication, exercise, and diet have to go together to improve diabetes, and that is what I am trying to do . . . .”

Diabetes self-management behaviors. Responses to “what new behaviors were used for diabetes management?” reflected the acquired diabetes knowledge with

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the common theme being a modification in dietary practices. This included balancing the amount of food eaten throughout the day, drinking more water, eating smaller portion sizes, and eating less high-carbohydrate foods such as tortillas or bread. Participants reported being more aware of their body and adjusting their management style by how they felt physically. They commented on checking their blood glucose levels as a way to determine how to modify their diet. Being able to balance their diet with prescribed medications was another theme that arose as part of what participants did differently after having participated in the classes. When asked about why there were no major differences in the amount of high-fat foods consumed, participants generally agreed that following a diet may have been more difficult; temptations and being in a social setting where high-fat foods were provided were the most difficult to overcome. With regard to the amount of exercise reported, participants commented that having a physical disability, back pains, and ankle or foot injuries limited their ability to walk or engage in physical activity. Other reasons included bad weather, unsafe neighborhoods, and lack of time.

> "Sometimes I get 135 fasting; that's high. I have to control it more, don't I? But compared to the 400 and 500 I had when I first came here, 135 is nothing . . . ."
>
> "I did not use to check my feet before. And I did not know I had to check them, and I asked here, and they told me, and I kept asking, and now I do it almost daily."
>
> ". . . I have a problem because I cannot walk; then the only thing I do is to lay down and do the exercises either laying down or sitting."

Self-efficacy. Participants reported a sense of being able to manage their diabetes and attributed this ability to the social aspect of DEEP. A common theme was that the classes provided a welcoming space to learn and discuss any problems they may have had with their diabetes; they reported feeling calm and relieved to get things off their chest. They also acknowledged that the CHW was particularly helpful in providing information with positive feedback and encouragement. Participants also commented that having peers as a social support system was important in feeling they were not alone in the difficult process and that someone cares.

> "It helped a lot emotionally to share with the people that met here. To me, at least, it helped me with depression."
>
> "It motivates me to eat less because I have depression . . . . I am seeing a psychologist, and [he] encourages me to make friends so I do not feel alone, so I don't get lonely."

Mental health and gender roles. Reasons for the difference in outcomes for women and men were primarily based on perceived gender roles. Women generally commented that men needed to maintain an image of strength and resiliency, and denial of having an illness may have preserved this image. Some women felt men do not know how to verbalize feelings and may not have benefited from the discussion aspect of the program. The 2 men in the group both commented that women were naturally better at taking care of their health and more conscientious of their health than men. It was further commented that wives were good support systems and had encouraged their husbands in taking better care of themselves.

> "Many times, I came because my wife came. But I kept coming, so it is possible for women to convince their husbands to keep coming."
>
> ". . . they [women] are more careful in regards to health. We are more disorganized, [attend more to] sports, to this, to that . . . ."

Challenges for self-management. The common theme was accepting diabetes management as an overall lifestyle change and making modifications to eating habits and engaging in exercise. Balancing different self-care behaviors and the lack of access to quality health care were acknowledged as important challenges. Participants mentioned rationing their medication so it could last longer and self-determining when to take the medication based on the degree of their symptoms. One participant mentioned how her daily household tasks were frequently disrupted by traveling to get her prescriptions and having to wait because they did not have them ready.

> ". . . instead of checking [blood glucose] 3 times a day, I only check it once. Because it's too expensive."
>
> "It's a problem for me when I go to the doctor . . . . they give me the medication . . . but it's too far away. And they tell me 'come on Wednesday,' and I go, and it's not ready. 'Come in the afternoon,' but I cannot go in the afternoon; I can't."

Role of CHWs. A common theme was appreciation of the personal interaction with the CHWs and the support they provided. The support was evident in facilitating

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communication; providing feedback, encouragement, and emotional release; and sometimes offering transportation to the class site.

> “One can get relief with her [CHW’s name]; I talk to her. Then, I feel at ease . . . .”
>
> “I did not want to see anyone; [I was] so depressed, staying indoors with the lights off. The doctor would come to see me from the center. I came here; they would go to see me from here. If not, they would go and get me . . . .”
>
> “They are often calling me to see how I am doing . . . .”
>
> “It was far; we had to wake up earlier . . . . But even then, we came.”

Suggestions. Overall, participants liked the program and were disappointed that no more classes would be offered (end of funding period). All participants agreed there was a need for the program, and the information provided was very useful. They wanted to learn more about nutrition. Men particularly liked learning about the physiology of the body and the different aspects of diabetes. They recommended adapting the schedules to include those at work and applying a preventive approach by inviting individuals most at risk for diabetes.

Discussion

This pilot project showed that it is feasible to implement a diabetes self-management program led by CHWs in community settings with positive short-term effects in glycemic control and self-care behaviors. With the exception of the collection of research data, all functions and activities in our study were the reflection of the actual tasks of the CHWs in implementing the diabetes educational curriculum at the community level. Under supervision, trained CHWs identified, engaged, and followed-up participants and provided linguistic and culturally competent instruction and support in ways consistent with real-world conditions.[11,23] The curriculum and instruction followed DSME standards and allowed participant input. Our program was consistent with the conditions for community-based diabetes self-management presented by Lorig and Gonzalez[24]: patient-centered content; emphasis on problem-solving and decision-making skills; community settings as the locations for education; delivery by trusted, culturally competent educators who do not need to be health professionals but who are properly trained with the same standards of quality applied to traditional health education.

Major limitations of this study include a noncomparison group design, high attrition rate, and missing data. Participants in the study reflected the actual conditions of community-dwelling Hispanics/Latinos with type 2 diabetes, which allows us to extend results to similar communities. Attrition was high and difficult to avoid, even though participants were advised at enrollment of the expectations and demands of the intervention. A number of noncompleters were younger, underemployed and unemployed and left when found jobs, or had significant pressure from family commitments that disrupted their continued attendance. It is important to note that participants did not receive any monetary incentives for participation in the study, not even to offset transportation costs. That the groups remained motivated throughout a 10-week intervention speaks positively of the engaging and participatory nature of the program. Focus groups confirmed participant receptivity to the program and the CHWs’ role in facilitating behavioral changes, social support, and stress relief. Excess missing values are attributed to logistical difficulties in spite of training in data collection protocols.

Our positive results stand in contrast with those of a recent randomized controlled trial by Lorig et al,[25] who found that a peer-led, community-based diabetes self-management program was not effective in reducing A1C levels but improved health behaviors and self-efficacy in the short term and over 12 months. Even though our focus groups reported gains in confidence and self-care skills, we failed to find significant change in the measure of diabetes self-efficacy, the DES-SF.

These results warrant further evaluation with a larger sample and a randomized controlled design. As recommended by several authors, further research should evaluate environmental influences in community self-management education,[26] the effectiveness of CHWs,[11] and the long-term impact of self-management on glycemic control.[9] A larger trial should offer the conditions to evaluate changes in self-efficacy/empowerment, incorporate measures of social support not evaluated in this study, and enforce implementation of stringent data collection protocols. Further studies on DEEP should address the recommendations from community residents regarding outreach, schedule flexibility, enhancement of self-efficacy/empowerment and social support, attention to gender roles and mental health, and continued emphasis on nutrition and self-care practices.

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