



Lessons Learned from Training of Promotores de Salud for Obesity and Diabetes Prevention

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# Lessons Learned from Training of Promotores de Salud for Obesity and Diabetes Prevention

## Abstract

**Background:** Promotores de Salud are impactful in reducing health disparities for Hispanic communities. The purpose of this paper is to present the training process and fidelity of study protocol implementation using a promotora model for community-based diabetes prevention.

**Methods:** Five Hispanic bilingual promotores were recruited from a Community Health Worker program and received intensive 30-hour promotora training on how to recruit participants, lead group sessions, and support participants making behavior changes. Evaluation of the training included a survey and focus group to assess promotores' feedback, a post-training knowledge test to assess knowledge acquired during the training and an observational assessment to measure promotores' skill acquisition. Evaluation of intervention delivery included in-vivo observations to assess attendance and alignment with protocol and a participant focus group to assess acceptance of the intervention being delivered by the promotores.

**Results:** The promotores' focus group revealed that promotores were satisfied with the training and perceived it to be clear and enjoyable. Post knowledge test scores were high ( $M=83.8$ ;  $SD=6.4$ ). Promotores suggested future trainings include more time to develop presentation skills. Study participants perceived the promotores to be supportive and helpful in assisting them to reach their goals.

**Discussion:** Promotores were able to obtain the necessary skills for delivering a diabetes prevention program in an acceptable way among Mexican American women.

**Conclusion:** Promotores can play a critical role in reducing health disparities among Hispanic populations but need adequate training for fulfilling this critical role.

## Keywords

Diabetes – Prevention; Diabetes mellitus; Health promotion; Hispanic Americans; Mexican American women; Minorities; Minority health; Obesity; Prevention and control; Race and health; Social networks; Social support

## Cover Page Footnote

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## **Lessons Learned from Training of Promotores de Salud for Obesity and Diabetes Prevention**

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### **ABSTRACT**

**Background:** Promotores de Salud are impactful in reducing health disparities for Hispanic communities. The purpose of this paper is to present the training process and fidelity of study protocol implementation using a promotora model for community-based diabetes prevention.

**Methods:** Five Hispanic bilingual promotores were recruited from a Community Health Worker program and received intensive 30-hour promotora training on how to recruit participants, lead group sessions, and support participants making behavior changes. Evaluation of the training included a survey and focus group to assess promotores' feedback, a post-training knowledge test to assess knowledge acquired during the training and an observational assessment to measure promotores' skill acquisition. Evaluation of intervention delivery included in-vivo observations to assess attendance and alignment with protocol and a participant focus group to assess acceptance of the intervention being delivered by the promotores.

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## INTRODUCTION

Promotores de Salud have gained increased attention and appreciation for their ability to communicate health information in a linguistically and culturally appropriate way for Hispanic communities. Promotores are community lay health workers and play key roles in establishing community connections and recruiting participants for health promotion programs (Vincent, Pasvogel, & Barrera, 2007). Promotores were able to motivate families to increase the number of heart healthy behaviors they engaged in and reduced the number of cardiovascular disease risk behaviors in previous studies (Balcazar, Alvarado, Cantu, Pedregon, & Fulwood, 2009). For example, a promotora-led diabetes education program significantly reduced A1C levels among Mexican Americans with diabetes (Lujan, Ostwald, & Ortiz, 2007). Promotores have also been able to recruit participants into and deliver diabetes intervention programs (McCloskey, 2009), bridge language/cultural differences in health promotion programs (Balcazar, Alvarado, Hollen, Gonzalez-Cruz, & Pedregon, 2005; Brown, Garcia, Kouzekanani, & Hanis, 2002; Meister, Warrick, de Zapién, & Wood, 1992), deliver health education (Corkery, et al., 1997; Ingram, et al., 2007), and increase social cohesion among participants (McCloskey, 2009). Moreover, the task force on the Health and Human Services Action Plan to Reduce Racial and Ethnic Health Disparities recommends the increased use of promotores to promote participation in health education, behavioral health education, prevention, and health insurance programs, to reduce disparities among racial and ethnic minority groups (Health and Human Services, 2011).

Due to their ability to increase program effectiveness, the promotora model becomes increasingly vital for diabetes prevention among vulnerable and underserved populations, such as the Hispanic community in San Antonio and South Texas. Nationally, Hispanic adults had a 66% higher risk of developing diabetes than non-Hispanic white adults and Mexican Americans had an 87% higher risk than non-Hispanic white adults in 2009 (Centers for Disease Control and Prevention, 2011). San Antonio has a primarily Hispanic population (61%) and approximately 45.8% of residents speak a language other than English at home (U.S. Census Bureau, 2011). This Hispanic enclave creates an environment rich in Mexican culture, yet disproportionately burdened by obesity and diabetes, with 18% of residents diagnosed with type 2 diabetes and many more (about 70%) displaying risk factors of diabetes, such as obesity, poor diet and physical inactivity (Bexar County Community Health Collaborative, 2006; DPP Research Group, 2002). Diabetes prevention programs that are culturally tailored to the local community are critical for this population.

“Mujeres Interesadas en Cambios por la Salud” (MI CASA; English Translation: Women Interested in Changes for a Healthy Lifestyle) is a diabetes prevention program culturally tailored for Mexican American women. MI CASA is a promotores-led community-based program, aimed to promote physical activity and healthy eating to reduce risk of type 2 diabetes in low-income Hispanic women living in underserved communities. Participants included females aged 25 to 65 who self-identified as Hispanic and had at least two risk factors for diabetes (BMI 28 to 40, gestational diabetes, family history of diabetes, previously had high blood sugar). MI CASA was based on the Diabetes Prevention Program (DPP Research Group,

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2002) and the Finnish Diabetes Prevention Study (Lindstrom, et al., 2003). Both studies were successful in reducing the incidence of diabetes among hyperglycemic participants using intensive lifestyle interventions. MI CASA was a translation of these studies to promote low cost, accessible forms of physical activity and healthy eating recommendations, using a culturally sensitive and promotora-based approach.

Promotores were identified as critical collaborators to make MI CASA linguistically and culturally appropriate for the Mexican American community in San Antonio. MI CASA is based on the Social Network and Support Model (Israel, Farquhar, Schulz, James, & Parker, 2002; Schulz, 2002) and the Social Cognitive Theory (Bandura, 1986). Benefitting from their cultural competence and knowledge of their community, promotores were theorized to strengthen the communication among participants and increase participants' trust, knowledge and access to community resources to assist them in behavior change. The MI CASA Promotores Model (figure 1) depicts promotores' anticipated contribution to the study.

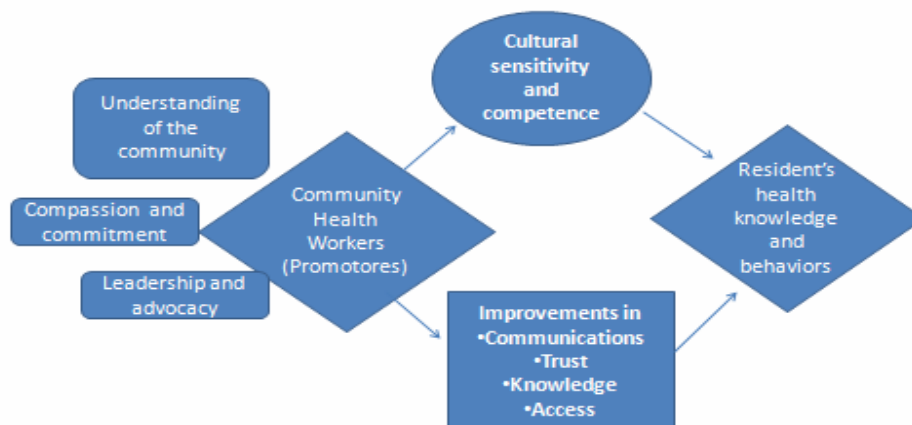


Figure 1: MI CASA Promotores Model

To equip promotores with the skills needed for health promotion and disease prevention, sufficient training is imperative. Although the literature is scarce on describing training methods used for promotores, literature suggests that typically, training lasts between one to 60 hours for promotores carrying out health educational interventions (Ayala, Vaz, Earp, Elder, & Cherrington, 2010). Because the study's internal validity and treatment fidelity largely depend upon the adequate training of promotores, more research is needed to understand appropriate training methods. The purpose of this paper is to present the training process and outcomes associated with the training and fidelity of study protocol implementation in a community-based diabetes prevention study.

## METHODS

### *Recruitment of promotores*

Promotores were recruited from a Community Health Worker certification (CHW) program offered through one of the city's local community colleges. The CHW certification program was the only one in San Antonio, TX and consisted of 17 semester course hours of

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training, including a semester long community health internship. CHW certification training included topics regarding wellness and health promotion, community nutrition and health services, and counseling. The CHW program director identified recent graduates who he believed met the study criteria and were dedicated to health promotion. He presented an overview of the study to the potential promotores, asked if they were interested in participating and gave the names of the interested promotores to the study staff.

The CHW program director and members of the research team screened the candidates to see that they qualified to be promotores and were willing to commit to the study requirements. MI CASA promotores' qualifications included having a good understanding of the intervention community (preferably a community resident), a high school diploma or equivalency, bilingual (English and Spanish) capabilities, good interpersonal skills, and commitment to health promotion. Potential promotores self-reported if they met the qualifications. Of the eleven candidates, six were qualified and available to begin training.

##### *Training of promotores*

The MI CASA promotores training was informed by three pilot studies and focused on promotores' key responsibilities in the study: (1) to communicate with participants and (2) to provide health education and support to participants. In the previous pilot studies, the promotores reported that the training was adequate for them to implement the interventions. The first training phase included a 30-hour training program. Training topics included: 1) basic nutrition and physical activity knowledge; 2) nutrition counseling skills; 3) nutrition education (cooking demonstration/food preparation/food resource management); 4) behavior change skills (motivation, self-monitoring, goal-setting, problem-solving); 5) physical activity skills; 6) health knowledge on obesity, diabetes, and cardiovascular diseases; 7) healthy eating and physical activity impacts on health; 8) ethical issues in health promotion; 9) small group dynamics/management; and 10) presentation skills.

The second training phase focused on MI CASA implementation. Topics included: 1) protecting human subjects, 2) helping participants use the MI CASA toolbox, 3) leading physical activity sessions (warm-up, walking, resistance band, medicine ball, stretching, dancing DVD, heart rate monitoring), 4) leading cooking demonstrations, 5) ensuring food safety and 6) implementing health and nutrition lessons. Training content is displayed in Table 1.

During the first phase of training, promotores participated in a condensed version of MI CASA, lasting approximately six weeks. Promotores attended informational sessions (researchers led these sessions for the condensed version), set dietary and physical activity goals for themselves, increased their step count, modified their diets, and used the MI CASA worksheets to self-monitor their health behaviors and progress. This practice enabled promotores to experience the intervention as a participant and identify personal barriers that future participants might face in carrying out their behavior modifications.

Training was conducted by the research team comprised of university faculty with diverse backgrounds and expertise (e.g., community health promotion, physical activity, nutrition, cultural sensitivity/tailoring, psychology and health counseling). The training was delivered primarily in English with instruments, visual presentations, and handouts available in English and Spanish. Although all materials were available in Spanish, promotores provided their insights to improve the translations. Promotores were invited to engage in bidirectional feedback with researchers by providing personal examples of opportunities and barriers unique to their community that impact weight maintenance and ideas for increasing cultural appropriateness. After the initial training, weekly staff meetings were used to provide ongoing training and

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support to the promotores. Promotores received a stipend for attending the training and delivering MI CASA intervention.

### ***Evaluation of Provider Training***

Process evaluation included gathering information on study design, provider training, treatment delivery, treatment receipt, and treatment skills enactment. Table 2 describes the details of data collection addressing the five evaluation areas. The quality of training and promotores' preparedness was assessed through several methods – promotores' feedback forms, knowledge tests, observations and focus groups.

Table 1. Training Content

<b>Topic#</b>	<b>Training Topic</b>	<b>Content</b>
#1	Orientation to MI CASA Effects of lifestyle changes on health	Introduction to MI CASA protocol; DPP and Look Ahead; Lessons learned from MI CASA pilots; Miniature MI CASA (6 weeks); Nutrition/PA myths
#2	Nutrition education skills	Healthy eating strategies/tips; Cooking demonstration; Food preparation; Food resource management; Nutrition myths
#3	PA skills	Basic physical activity knowledge; Exercise principles; Safety and injury prevention; Leading PA: Walking technique and resistance training/stretching; Use of pedometers, resistance band, medicine ball; PA myths
#4	Nutrition/PA counseling skills	Self-monitoring; Goal setting; Dietary and PA log/recalls; Relapse prevention; MI CASA toolbox
#5	Small group dynamics/management	Establish rapport; Communicating techniques; Motivational interviewing techniques/Active listening/paraphrasing; Practice communication techniques in small groups; Public speaking skills Human subject protection
#6	Ethical issues in health promotion	Protection of privacy, adverse event reporting
#7	MI CASA curriculum training	Health education classes #1-4 Rehearsal of health education classes
#8	Certification test	Certification test

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Table 2. Data Collection and Treatment Fidelity Application to MI CASA

	Intervention Strategies	Evaluation Method
Study Design	Representativeness of study participants	Participant attrition rates Post-study comparison participant survey
<i>Promotores</i> Training	Standardized training protocol. 10-hour booster training.	Attendance records for 30-hr training and 10-hr booster training. Certification test. Re-testing after booster training. Attendance records for weekly staff meetings.
Treatment Delivery	Use of scripted education curriculum. Treatment protocol manual.	In vivo observations. Session completion checklist of intervention components delivered. Toolbox utilization records. In vivo observations. MI CASA Participant Log. Promotores focus groups
Treatment Receipt & Enactment of Treatment Skills	Promotores telephone contacts. Individualized strategies.	Participant health knowledge test (pre- and post-study). MI CASA Participant Log (records of all participant contacts: large/small group meetings, individual sessions, and telephone contacts) Participant focus groups

Promotores' feedback forms included items assessing promotores' feedback on the training delivery - such as the sufficiency, the promotores' perceived understanding of the material and the researchers' ability to answer the promotores' questions during training. A 40-question knowledge test was used to assure that promotores comprehended the information regarding diabetes, risk factors, physical activity, nutrition and other training topic areas. The knowledge test included items about the study such as 'How many people will be asked to participate in the study?', human subjects protection, nutrition and food safety such as "The danger zone or temperature zone which allows for the most bacterial growth on food is which of the following temperature ranges?" and, physical activity such as "How many steps does it take to use 200 calories?", diabetes, obesity and goal-setting. Observational assessments included two bilingual research staff observing the promotores individually presenting a lesson in both Spanish and English to the other promotores to ensure that each of the promotores could present the information clearly and effectively in both languages. Two research staff members rated the presentation as either adequate, needs improvement/additional training, or not adequate. Finally, a focus group with the promotores, that lasted about one hour, was conducted at the training site by a trained moderator to gather feedback regarding the quality of the training.

### *Evaluation of Intervention Delivery*

Measures of intervention fidelity included attendance records, session completion checklists and self-evaluations by promotores and in vivo observations by research staff. Promotores



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completed self-evaluation forms for all classes, describing how they believed the sessions went and any barriers experienced. The in vivo observations were conducted by a research staff member who attended the session and completed the observation, describing the promotores' delivery of the lesson: if promotores seemed engaged in the lesson, if participants seemed engaged and if lessons and activities were completed as planned. The observers were also able to record any barriers to implementation.

Finally, a small sample of study participants took part in one of two 90-minute focus groups at the end of the study to assess their feedback on the program and the promotores. Focus groups were held at the intervention site and offered in either English or Spanish.

### *Analysis*

All quantitative data was analyzed in SPSS, version 19. Frequencies of all variables of interest were computed. For knowledge tests, each item was scored as either correct or incorrect. The number of correct items was computed for each section (e.g., nutrition, physical activity, disease prevention) producing a total score for the exam. Scores with 80% or greater correct responses were deemed passing. Frequencies of responses for all promotores' self-evaluations and research observations were also calculated. In-vivo observations by research staff throughout study implementation were coded for each criterion as either "meeting" or "not meeting" the criteria. Log and observation data were grouped by either the first seven lessons or the last six lessons to examine differences over time in attendance and barriers promotores faced. Focus groups with promotores and research participants were transcribed and thematic analysis was conducted in the original language (English and Spanish), using sentences as the unit of meaning. Spanish quotations were translated to English for this paper.

## **RESULTS**

### *Promotores Demographics*

All five promotores (four females and one male) self-identified as Hispanic and ranged in age from 38 to 54 years old ( $M=46.5$ ,  $SD=6.02$ ). All reported good (40%) or excellent health (60%). Promotores were either born in San Antonio or had been living in the city for over four years. The average number of years living in San Antonio was 14 years. Except through their CHW certification program internship, promotores had no previous experience in health promotion. All promotores passed a test and were certified as Community Health Workers by the State of Texas.

### *Evaluation of Promotores Training*

Promotores' feedback forms revealed that all of the promotores liked the training format but believed the training was too short. They reported feeling comfortable asking questions to the research staff and liked the training presentation materials used (e.g., PowerPoint slides, handouts). Of the 21 health topics presented, promotores reported themselves as confident to teach about most of the health topics ( $M=14.2$ ,  $SD=4.3$ ). The most frequently endorsed topics were diabetes, obesity, risk factors, and physical activity. Finally, promotores believed facilities

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were not adequate to provide training on cooking demonstrations as originally planned. Promotores training was conducted over four weeks and attendance was 100%.

The post knowledge tests revealed that four of the five promotores had obtained adequate diabetes prevention and health promotion knowledge, with a 75% passing score. The average score of the knowledge test was 83.8% (SD=6.4). The promotor(a) who did not receive a passing score was asked to review the information, write up an explanation of all missed terminology and retake the exam. The promotora received a 90% on the exam retake and was therefore deemed adequately knowledgeable to deliver the intervention.

The observational assessments revealed that 100% of promotores were able to effectively and clearly communicate the lessons in Spanish and English. After each observation, the promotores were briefed on what aspects of their presentations were strong and ways to improve their presentations for the future. After this, promotores were deemed to be adequately prepared to deliver the health information to MI CASA participants.

The promotores' focus group revealed that promotores were satisfied with the training. Although the training time for the content seemed adequate, they suggested allocating more training time on presentation skills through mock sessions. They needed to spend more time getting comfortable presenting to small groups to reduce nervousness. They also believed that the training could last a few more weeks to allow for more time to practice these skills and receive feedback from the research team.

### ***Evaluation of Intervention Delivery***

The MI CASA program had 36 participants. Eighty-three percent completed the 14-week program. Attendance at the group sessions averaged 5.57 participants (SD=4.5). One barrier to program implementation was the number of participants arriving late and leaving early, although both numbers decreased from the first seven sessions to the last six sessions. Average number of tardy participants decreased from 2.07 (SD=2.1) to .94 (SD=.9). Average number of participants leaving the session early decreased from .24 (SD=.60) to .17 (SD=.5).

### ***Promotores Self Evaluations***

The promotores delivered fourteen sessions for MI CASA. Each session lasted approximately 90 minutes. The promotores' self-evaluations revealed that they completed most lessons successfully (98%). The promotores identified a few barriers to implementing the lessons. The main barriers identified included language difficulties (not all participants were fluent in delivering the health education sessions in Spanish), lack of childcare for participants during intervention sessions, and not having all needed materials for health lessons. Participants self-selected into classes in either English or Spanish. The promotores tried to accommodate participants by presenting all materials in the group's dominant language but occasionally only one person was not fluent in the same language. Promotores would translate for the individual but this lengthened the session time. Participants occasionally brought their children to the sessions. Due to the diversity of children's ages, promotores requested that a variety of activities be made available for the children so their mother/guardian could actively participate in the class and not spend time supervising the children. Finally, occasionally materials were not ready for

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the session. Promotores reported that they did not have all of the needed materials or were short on the correct number of supplies.

Health session observations suggest that most lessons were delivered as planned (see table 3). Fewer barriers existed in the last six sessions compared to the first seven sessions. Barriers included inadequate time to complete the lesson (6.7%), participant confusion over instructions (3.3%), inappropriate instructional level –too easy (3.3%) or too difficult (6.7%), and language barriers (3.3%). The bilingual promotores presented the lessons in the group’s preferred language and translated the content for participants that did not speak that language.

Table 3. Promotores Observations

Criteria	% Met Criteria	%Met Criteria	Change
	First 7 Sessions	Last 6 Sessions	
<i>Nutrition Lessons</i>			
a. Materials available and organized:	93.1	94.1	1
b. Purpose of the lesson announced:	100	100	0
c. Activity was presented as planned:	96.6	100	3.4
d. Promotores were actively engaged:	100	100	0
e. Participants were actively engaged:	96.6	100	3.4
f. Lesson was completed as planned:	96.6	100	3.4
<i>Health Lessons</i>			
a. Materials available and organized:	91.7	100	8.3
b. Purpose of the lesson announced:	100	100	0
c. Activity was presented as planned:	100	100	0
d. Promotores were actively engaged:	100	100	0
e. Participants were actively engaged:	95.4	100	4.6
f. Lesson completed as planned:	100	100	0
<i>Physical Activity Lessons</i>			
a. Materials available and organized:	90.9	93.8	2.9
b. Purpose of the lesson announced:	91.3	100	8.7
c. Activity was presented as planned:	90.9	93.8	2.9
d. Promotores were actively engaged:	100	100	0
e. Participants were actively engaged:	100	100	0
f. Lesson was completed as planned:	91.3	93.8	2.5
Total Observations	30	19	49

A small sample of 12 study participants took part in the focus groups to share their feedback on the program implementation and promotores. Participants reported the promotores' roles were as "teachers" and "coaches". One participant said "I liked that the [promotores] were nice and taught me a lot that I didn't know." Participants also mentioned how promotores helped them reach their goals with both social support and coaching. A participant mentioned "I liked the guidance and how the promotores asked questions and gave positive encouragement and never criticized." Another said "At the beginning of each session, they would weigh us and then they asked us to pick a goal weight for the following week. They constantly reminded us to fill in our homework for the following week, which was a good thing because some of us forget."

Although most comments were very positive about the promotores and their role, another theme that emerged was that sometimes promotores seemed unprepared and took a while to begin the session. One participant said "The promotoras were sometimes confused on what they were supposed to do, sometimes unorganized, needed more time to explain the booklets/information in order to understand what was expected of the participants." Promotores did not seem to be spending enough time preparing before the sessions began.

## **DISCUSSION**

Findings related to the training for the MI CASA project are promising and insightful. Due to the demanding roles promotores were asked to take on, the certification training as well as the weekly staff meeting were equally critical for the successful implementation of MI CASA program and retention of participants. The MI CASA project benefitted from ongoing cooperation and feedback between the research staff and promotores. MI CASA promotores were actively involved in the recruitment, implementation and decision-making.

Promotores' knowledge test results suggest that the training was adequate to equip them with the preliminary information they needed. Also, promotores' perceived confidence was also rated high for several topics. The training format was rated as adequate. PowerPoint presentations delivered by university faculty alongside hands-on application opportunities seemed to provide promotores with adequate information about their roles in the project.

The time spent in training was limited. Although few studies discuss training of promotores with sufficient detail to compare to this study, promotores training was approximately 60 hours for similar interventions (Ayala, et al., 2010). Previous pilots of the MI CASA study used 60 hours to increase promotores' competency on aspects of intervention delivery. Although the original protocol outlined 90 hours, the training schedule was modified to account for previous training. Because of previous knowledge obtained through CHW training, researchers supplemented rather than repeated previously trained topics. This process may not have provided adequate training time. Promotores mentioned in their focus group that they could've used a few more weeks of training and more time to rehearse. Recruiting certified CHW might have reduced the need to teach general health promotion content, however, more research is needed on estimating the amount of hours needed to increase confidence in presentation skills. Weekly meetings enabled promotores to ask questions and elicit staff support but did not incorporate

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time for promotores to rehearse. Future studies might benefit from allowing weekly practice to promotores to continually refine presentation skills. The quality of training, though, was rated high by the promotores, suggesting that they were supported by the study staff.

The findings of this study should be interpreted in context of its limitations. Although a post knowledge test was used to assess promotores' knowledge, without a pretest it is uncertain that the knowledge resulted from the training and not previous experiences. However, the type of questions asked assessed technical and somewhat detailed knowledge such as specific temperatures impacting food safety. Thus, it is unlikely the promotores had knowledge prior to the training. Moreover, the promotores rated their knowledge in these areas as low before beginning training. Another potential limitation is that participants who showed up to the focus group might have had more positive feedback about the program. The study did not include a comparison group so it is unclear if the participants enjoyed the program more because of the promotores or due to other factors not captured in our data collection, such as the curriculum, or research staff presence. Finally, in vivo observations might have impacted the program delivery by the promotores since the promotores knew about the observations ahead of time; however, the variance in the findings suggests a limited effect.

### CONCLUSION

Certified Community Health Workers are an emerging force in community health promotion and can potentially bridge the gap between research and evidence-based practice to reduce health disparities in underserved populations. MI CASA evaluation results showed that promotores were capable to deliver and retain participants in a lifestyle intervention program. Trained and state-certified community health workers are an integral part of the public health approach. Diabetes prevention has lacked a consideration of cultural factors, such as language, diet, social emphasis, family participation, cultural health beliefs, group problem solving, and use of community-based locations. Cultural appropriateness may best be achieved by the involvement of promotores in delivery of culturally tailored messages (Elder, Ayala, Parra-Medina, & Talavera, 2009), due to their ability to bridge cultures, as well as to show empathy and provide general advice to other issues in participants' lives. To be successful, however, they must be equipped with the skills and support they need. Promotores have the ability to identify and inform health promotion programs and should be considered a valuable part of community health initiatives for Hispanic communities.

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