

Participants' Perspectives of a Culturally Competent Diabetes Education for Hispanic/Latinos

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Abstract

Background: *¡Si, Yo Puedo Controlar Mi Diabetes! (Sí, Yo Puedo)* is a culturally appropriate diabetes self-management education program targeting underserved Hispanic/Latinos. **Purpose:** The purpose of this article is to report on our post-test focus group observations that elaborate upon quantitative evaluation results that are published elsewhere. **Methods:** Following a seven-week intervention, we conducted seven focus groups to capture participants' perspectives about managing their diabetes before and after participating in classes. These sessions were held during a one-month post-intervention (reunion) session. **Results:** Participants were mostly female (77%; N=34) with a mean age of 58.8 years. Perceived improvements in eating habits, blood glucose testing, and physical activity were among the positive outcomes of attending the program. Barriers to diabetes self-management included struggling changing lifestyle habits, accepting disease diagnosis, and financial issues. Despite these concerns, participants found *Sí, Yo Puedo* to be beneficial, especially with psychosocial support. "Not feeling alone" was a prevailing sentiment expressed by participants. **Conclusions:** Overall, participants indicated the program was relevant to their needs. This study suggests that *Sí, Yo Puedo* is an effective program to reach Hispanic/Latinos and improve their health outcomes.

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Introduction

Hispanic/Latinos are at an increased risk for developing diabetes and suffering disease-related complications. Diabetes rates are appreciably greater for Hispanic/Latinos (11.8%) than non-Hispanic whites (7.1%) (Centers for Disease Control and Prevention [CDC], 2011). This group also has higher rates of end-stage renal disease and are less likely to engage in diabetes self-care practices, such as taking a diabetes self-management education (DSME) class or monitoring their blood glucose levels (Thackeray, Merrill, & Neiger, 2004; CDC, 2009; Campbell, Walker, Smalls, & Egede, 2012). As these data suggest, poorly controlled diabetes is a burden experienced by many Hispanic/Latinos.

Barriers to Diabetes Care

Diabetes self-management education is vital to improving health outcomes. Yet, for disadvantaged Hispanic/Latinos, barriers to diabetes care are a concern. Recent reports show that 34% of the 44 million U.S. Latinos aged 65 years or younger do not have medical insurance, as opposed to only 12% of whites not having coverage (Perez-Escamilla, 2010). Numerous factors have been associated with their poor diabetes outcomes including limited access to health care, language barriers, cultural factors, lack of cultural competence among health care providers, living in poverty, limited social support, low health literacy, and poor coping with medical co-morbidities (Cersosimo & Musi, 2011; Brown & Hanis, 2014; Brown,

García, Winter, Silva, Brown, & Hanis, 2011; Scollan-Koliopoulos, Schechter, Caban, & Walker, 2012). Overcoming these obstacles requires health care system changes regarding policies to increase health coverage and access to care, and at the provider and patient level to improve communication through culturally appropriate educational materials and programs (Cersosimo & Musi, 2011).

Culturally Competent Care

Culturally competent care is a solution to improve the accessibility and effectiveness of health care services for minority groups (Truong, Paradies, Priest, 2014; Funnell et al., 2011). For example, tailoring DSME interventions for ethnic minority populations compared to conventional DSME interventions reportedly improves participants' diabetes knowledge and healthy lifestyle behaviors (Hawthorne, Robles, Cannings-John, Edwards, 2010). Other data support that culturally appropriate programs are more effective than generic quality improvement programs for reducing disparities in intermediate effects of diabetes such as hemoglobin A1c, a measure of good blood glucose control (National Institute of Health [NIH], 2011). As this evidence reveals, customizing DSME programs yields benefits that can ameliorate diabetes disparities for Hispanic/Latinos.

Diabetes Education for Hispanic/Latinos

Reaching underserved Hispanic/Latinos with customized DSME interventions delivered in community settings is a strategy that has shown promise (Liebman, Heffernan, & Sarvela, 2007; Babamoto et al., 2009; Philis-Tsmikas, Fortmann, Lleva-Ocana, Walker, & Gallo, 2011). Evidence is mounting in favor of community-based DSME programs for Hispanic/Latinos. Positive gains in glycemic control (HbA1c < 7), diabetes self-care behaviors, self-efficacy, and health status were among the benefits cited in recent literature (Rosal et al., 2005; Sixta & Ostwald, 2008; Brown et al., 2011; Philis-Tsmikas et al., 2011; Peña-Purcell, Boggess, & Jimenez, 2011). Conducting classes in the location where participants reside will also have greater appeal because it is a familiar and comfortable place.

This was the case in a 20-year research study, where Hispanic/Latinos preferred their DSME classes held close to home, such as at the local church or school (Brown & Hanis, 2014).

Bringing programs to the community, particularly group classes, offers many other advantages. These benefits include providing an informal atmosphere for open discussions and questions, facilitating support from family and friends, allowing convenience in scheduling and location for the patient, promoting cultural relevance and appropriateness of instructional techniques, stimulating collective learning, and encouraging social interactions (Brown, Garcia, & Winchell, 2002; Ingram, Gallegos, & Elenes, 2005; Norris et al., 2002). With the numbers of Hispanic/Latino population expected to rise, DSME programs catered to this group will be a critical need.

The Current Study

¡Si, Yo Puedo Controlar Mi Diabetes! (Si, Yo Puedo) was developed by Texas A&M AgriLife Extension Service as a statewide initiative to meet the demand for a DSME program tailored for its Hispanic/Latino clientele, especially in rural areas. Its approach included delivering classes in Spanish, incorporating their dietary preferences in the nutritional content, emphasizing socialization and family participation, and integrating cultural beliefs and values in the curriculum. The strategies employed in *Si, Yo Puedo* parallel best practices used in other DSME programs targeted for Hispanic/Latinos (Sixta & Ostwald, 2008; Philis-Tsmikas et al., 2011; Vincent, Pasvogel & Barerra, 2007). In the pilot study, we were able to achieve clinical and behavioral improvements. Specifically, participants lowered their A1c and increased their self-efficacy, diabetes knowledge, and self-care behaviors (Peña-Purcell, Boggess, & Jimenez, 2011). This study reports on focus groups that were conducted as a post-test qualitative evaluation to contextualize the impact of *Si, Yo Puedo* on participants. The purpose of this article is to report on our focus group observations to elaborate upon our published study.

Methods

Study Design

At post-test, we conducted seven focus groups to capture participants' experiences managing their diabetes after participating in classes. These sessions were held one-month post-intervention during a reunion session. Texas A&M University Institutional Review Board approval was obtained to conduct the study.

Sample and Site Characteristics

Thirty-four Hispanic/Latinos with type 2 diabetes agreed to participate in the study. All participants completed a five-week *Si, Yo Puedo* class series in Starr County, Texas. Participants

were purposively recruited because of their participation in *Si, Yo Puedo*, which allowed them to provide feedback specific to the effectiveness of the course. *Si, Yo Puedo* is a group-based intervention designed to equip participants with knowledge and lifestyle skills in diabetes self-management. The curriculum content aligns with the American Diabetes Association's standards for DSME (Funnell et al., 2011). Table 1 details the *Si, Yo Puedo* intervention strategies and their respective targets for change in knowledge, attitudes, and behaviors. Diabetes self-care behaviors include diet, physical activity, self-monitoring blood glucose, and medication adherence.

Table 1

Si, Yo Puedo Intervention Strategies

Intervention Strategies	Knowledge	Attitudes	Behaviors			
			Diet	PA*	SMBG†	Medication Adherence
1. <i>Weekly video novela</i> (soap opera) used to reinforce the lesson's concepts.	X	X	X	X	X	X
2. Blood glucose monitoring instruction	X	X			X	
3. <i>Power Phrase</i> , a weekly motivational phrase recited aloud and used to communicate the lesson's empowerment message.		X				
4. Short presentations of key intervention concepts	X		X	X	X	X
5. Group learning games	X	X	X	X	X	X
6. Problem solving (group and individual)	X	X	X	X	X	X
7. <i>Mi Promesa</i> , weekly goal setting activity to promote behavior change.			X	X	X	X
8. Family support		X	X	X	X	
9. Role modeling	X	X	X	X	X	X
10. <i>Action Plan</i> , a weekly take-home activity to practice lessons learned in the session.	X	X	X	X	X	X
11. Emphasizing one message at a time	X					
12. Cognitive reframing		X				
13. Visual aids (food photo cards, pictorial handouts, and pictorial homework sheet)	X		X		X	
14. Use of food measuring aids	X		X			
15. Meal planning with healthy plate concept	X		X			
16. Food label reading	X		X			

*PA: Physical Activity
 †SMBG: Self-monitoring blood glucose

Seven focus groups were formed from four *Si, Yo Puedo* classes held in one community center, two churches, and a public library. We planned two focus groups per class to facilitate better group dynamics and sharing. While eight to twelve participants are optimum for focus groups, our size varied from two to seven due to low attendance (Kreuger & Casey, 2009).

Focus Group Protocol

At the beginning of the focus groups, participants were orally administered an informed consent in their preferred language (Spanish or English). Demographic data were obtained from our baseline assessment (Peña-Purcell et al., 2011). *Si, Yo Puedo* class facilitators, trained by the lead author to conduct focus groups, moderated the sessions. A semi-structured interview process guided the focus

group discussions. There were 11 open-ended questions that were designed to elicit information about participants' self-care habits before and after attending *Si, Yo Puedo* (Table 2). Focus group items addressed the seven essential diabetes self-care behaviors taught in class: 1) eating healthy, 2) monitoring blood glucose, 3) engaging in physical activity, 4) visiting the doctor routinely, 5) checking your eyes, teeth, and feet, 6) taking your medications, and 7) managing stress. Focus group discussions were digitally recorded and were approximately 60 to 90 minutes in length. Spanish was the preferred language for six of the seven focus groups, with one conducted in English. In addition to conducting focus groups, we obtained participants' self-reported gender, date of birth, literacy, education, income, and insurance.

Table 2

Focus Group Questions

Reflecting on your experience BEFORE (or AFTER) taking the class, the following are questions about your health habits managing diabetes:

1. How were your eating habits BEFORE taking the class?
How are your eating habits AFTER taking the class?
2. How often did you check your blood sugar BEFORE taking the class?
How often do you check your blood sugar AFTER taking the class?
3. How physically active were you BEFORE taking the class?
How physically active are you AFTER taking the class?
4. How often did you see your doctor BEFORE taking the class?
How often do you see your doctor AFTER taking the class?
5. Were you taking your medicines as prescribed by your doctor BEFORE taking the class?
Are you taking your medicines as prescribed by your doctor AFTER taking the class?
6. How often did you check your eyes, teeth, and feet BEFORE taking the class?
How often do you check your eyes, teeth, and feet AFTER taking the class?
7. How well were you managing your stress BEFORE taking the class?
How well are you managing your stress AFTER taking the class?

The following are general questions about managing your diabetes:

8. What is most *difficult* in managing your diabetes? Explain.
 9. What is *easy* in managing your diabetes? Explain.
 10. Is there something that we didn't ask that you think is important to add to this interview?
Feel free to share any additional thoughts you have.
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Data Management and Analysis

A team of trained bilingual (Spanish/English) graduate students transcribed the audiotaped focus group discussions. To maintain the integrity of participants' responses, transcribed

focus groups were written in the original language (Spanish or English). Participant identifiers were removed to protect confidentiality.

A content analysis and constant comparative method were used to analyze the data (Creswell, 2002). Because our research team members are bilingual, we analyzed the Spanish transcription in its original language. Through a content analysis, our team subjectively analyzed the text data to code the information and identify themes (Hsieh & Shannon, 2005). Data units were identified; using the constant comparative method, codes were assigned to this information, and categories were formed. In the first step, transcription was “segmented” into meaningful data units (Merriam, 1998). During this process, our research team read the text repeatedly to identify units or meaning. Open coding, the second step, assigned labels or codes to data units that gave interpretation to these text segments. Finally, we categorized common elements of the codes, which are abstractions derived from the data that not only describe the data but also interpret the data (Merriam, 1998). The research team placed the individual units of transcribed data on note cards. Using a process of consensus, the team coded data units to illuminate the meaning of the transcription. The note cards, particularly for the small group analysis, provided visual manageability for the emergent categories and promoted group participation into each unit of data. Given that context plays an important role in understanding a culture and, similarly, language in the context, we coded and categorized text in Spanish.

Results

Participant Characteristics

Participants were predominately female (77%; N=34), had a mean age of 58.8 years, had less than a high school diploma (40%), had a yearly income of less than \$20,000 (57%), were uninsured (48.7%), and most had median literacy levels (score of 50%). Demographic characteristics of participants are described in Table 3.

Themes of Focus Groups

From the seven focus groups, 765 units of data were extracted. Each of these significant statements was numbered sequentially from the first conducted session to the last. From the content analysis, three themes emerged: diabetes

self-care behavior improvements, challenges to managing diabetes, and program benefits.

Table 3

Demographic Characteristics (N = 34)	
Gender	Percentage
Male	23
Female	77
Age, mean year	58.8
Literacy	50
Education	
	Percentage
High school or less	40
High school diploma or GED	37.5
Vocational or technical school	14.3
College degree	2.9
Income per year	
	Percentage
Less than \$20,000	57.1
\$20,000 to \$29,000	22.9
\$30,000 to \$39,000	5.7
\$40,000 to \$49,000	2.9
Insurance	
	Percentage
No insurance	48.7
Medicare	11.4
Medicare plus supplemental	5.7
Medicaid	8.6
Private	17.1

Theme 1. Improving Diabetes Self-care Management. As the result of attending the *Si, Yo Puedo* program, participants reported experiencing greater control in managing their type 2 diabetes. The most positive changes were observed in their eating habits and physical activity. Participants reported a modest level of improvement in regularly testing blood glucose levels. Each of these health behaviors plays a vital role in glycemic control.

Eating Behaviors. Overall, participants viewed that their dietary habits improved after attending the *Si, Yo Puedo* program. Many participants reported that before they intervention, they were not eating healthy (13/34) and in moderation or with no restraint (19/34). “*I did not know how to balance [food]*” and “*I did not have control*” were two sentiments reflecting the former problem. Lending support to this issue, one participant admitted: “*I used to eat everything at any time. The quantity... I didn’t check the quantity... I didn’t care. No, anything I would just eat. Whenever I would feel hungry, I would eat.*” Capturing the problem with unhealthy food choices, one participant stated: “*Oh, a lot of*

meat, a lot of meat, I love French Fries, anything potatoes.”

Since the intervention, many participants reported consuming healthier foods (13/34) and limiting serving sizes (24/34). Supporting these findings, one participant cited, “...*And now I eat vegetables, a lot of vegetables.*” A second statement, “*Now I’m very careful about what I eat...the portions. So now I do pay attention to it...to my meals*” reflects efforts to reduce food consumption.

Traditional foods were cited (19/34) as an important part of their diet, as shown in the following statement: “*We are born and raised with a lot of Mexican foods, especially on the holidays. We have holidays throughout the whole year...during Thanksgiving we not only have turkey but also prepare different kinds of Mexican foods...tamales...empanadas.*”

Given the importance of their cultural foods, one participant summed up a collective concern restricting consumption of these foods: “*...staying away from traditional foods that we are accustomed to eating. We still munch here and there, and we just can’t seem to drop that off.*”

Increasing Physical Activity. Increasing physical activity was discussed as an improvement resulting from attending *Si, Yo Puedo*. Prior to the intervention, participants reported that a sedentary lifestyle was typical (10/34): “*I would do very little [exercise].*”

After completing the program, several participants (13/34) reported becoming more active, with walking being most common:

“Well, now after the class, I have been walking more. I walk every day for half an hour, 45 minutes. It depends on whether I take the kids and we make it almost to the hour, but when I go alone I go faster and I can do the same walking in half an hour, but I have walked more now after I finished this [class].”

More Frequent Blood Glucose Testing.

Participants perceived that their blood glucose monitoring increased after

completing the program. However, participants reported struggling to establish a habit of routine testing. Before attending *Si, Yo Puedo*, participants (14/34) discussed that they did not regularly check their blood glucose: “*...I would check it little, 2 or 3 times a week...no more.*” One participant voiced resistance to testing: “*...I never checked it [blood glucose]. Why am I going to lie? And I had the machine, and I had everything because they would give it to me. My sister-in-law would give it to me...my neighbors, too. But, no, I would not set aside time to sit and check it.*” Another participant admitted she only tested her blood glucose level when she did not feel well: “*...I did not check it... only when I would feel badly to know if it was high or low, but only then.*”

After attending the course, a number of participants (17/34) cited making progress monitoring their blood glucose. Despite this improvement, inconsistent testing was reported: “*Now I check twice [daily]... not every day, but I do it more now.*”

Theme 2. Challenges to Managing Diabetes.

Participants commented about several challenges to modifying lifestyle habits. Restricting consumption of their favorite foods was a hurdle to overcome, as indicated in the following statement: “*For me also the food, the rice, tortillas, and beans...they were my favorite foods, and now it has to be less...that is the hardest part.*” For some participants (8/34), the fact of not being able to eat what they were used to eating caused them to experience negative emotions: “*...Yes, it depressed me at the beginning because I was going to let go of many things that I truly liked...*”

When discussing physical activity, barriers to exercising were reported (6/34): “*...I only don’t walk when it is very cold or I can’t.*” Another commented, “*...I have many problems with one leg. And my back has been operated on, and I have lots of problems with this. I know it would help, but I can’t walk a lot. Because of this, I don’t exercise.*”

Theme 3. Acceptance of Diabetes Diagnosis.

A final challenge to diabetes management was accepting their diabetes diagnosis (6/34). The following statement captures this psychological impediment as a hurdle to overcome: “...well it was also difficult when they diagnosed the diabetes because maybe I did not have a lot of information, but today after the classes, I see things in another way; I mean, I know how to live with diabetes.”

Theme 3. Benefits from the Program. Several benefits of the program were reported in the focus groups (16/34): a better understanding of their disease, physical appearance enhancement, and social support. Most participants cited that an increase in diabetes knowledge helped them with many aspects of managing their diabetes, including eating healthier and preventing complications. The encouragement and empathy that participants received from each other was a valuable outcome of *Si, Yo Puedo*. The following statement illustrates this finding: “*The support, the support... with people that have the same condition like you. You learn to overcome it better.*” Another participant commented, “*We don’t want to feel that we are alone going through this. And we learn from each other...what we go through on a daily basis. And we can get our strength by knowing somebody else is also going through what we are going through and that support.*”

Discussion

This qualitative study confers with our published study reporting improvements in diabetes self-care management (Peña-Purcell, et al., 2011). Reducing portion sizes, making healthier food choices, engaging in physical activity, and improving blood glucose monitoring were areas participants experienced the most notable positive changes. These observations also agree with research testing DSME for Hispanic/Latinos that showed improvements in dietary habits and self-care behaviors (Castillo et al., 2010; Peña-Purcell et al., 2011; Philis-Tsimikas et al., 2004).

Food Choices

Mirroring our published study where participants progressed from three to six days

per week in following a healthful eating plan, our cohort agreed that *Si, Yo Puedo* helped them learn how to make better food choices. Nonetheless, a common issue among participants was struggling to give up foods they enjoyed most. One major issue was that their food preferences are part of their cultural identity. Confirming findings by Rosal, Goins, Carbone, and Cortes (2004), participants endorsed eating their usual traditional foods but in smaller amounts. Participants in our study did not mention modifying traditional meals in a healthier manner, but we speculate *Si Yo Puedo* raised their awareness of how to make better choices. Based on their responses, eating less of these foods—especially monitoring carbohydrate intake—is a step in the right direction to achieve glycemic control (American Diabetes Association, 2007). The emphasis in *Si, Yo Puedo* was to provide options to modify and not eliminate their cultural foods. To this end, incorporating healthy food choices and recipes that are typical for Hispanic/Latinos was a strategy employed in the course.

Physical Activity

Confirming our published study where participants made significant strides engaging in at least 30 minutes of daily physical activity from two to six days per week, participants cited they were increasing their level of physical activity (Peña-Purcell, et al., 2011). This also lends support to other studies reporting similar improvements in physical activity among Hispanic/Latinos attending culturally relevant DSME (Castillo et al., 2010; Rosal et al., 2005). Our findings are encouraging given that previous research has found that Latinos are less physically active than other populations (Ahluwalia, Mack, Murphy, Mokdad, & Bales, 2003). Supporting other studies, we also observed that exercising might be problematic for people with diabetes due to physical limitations and environmental factors, such as a lack of green space and unsafe places (Castillo et al., 2010; Lopez-Class & Jurkowski, 2010).

Blood Glucose Testing

While it was evident that participants were making progress in monitoring their blood

glucose, infrequent testing was an area of concern. Our findings conflict with the pilot demonstration where the largest gains were testing the recommended number of times per day from two days to seven days (Peña-Purcell, et al., 2011). Because the focus groups were conducted five weeks post-intervention, we speculate some may have lost motivation to maintain the healthful habits learned in class. Another possible explanation is the fear or dislike of finger pricking, as expressed by one participant. Pain associated with blood glucose testing is one possible reason why people may refrain from regular testing (Heinemann, 2008). Rosal et al. (2004) cited that Hispanic diabetes patients feared using a glucose meter because they disliked the pain from finger pricking. This concern underscores the importance of DSME to help patients develop problem-solving skills to tackle problems that hinder them from routinely checking their blood glucose.

Acceptance of Diabetes Diagnosis

Several participants expressed difficulty accepting their diabetes diagnosis. Refusing to accept, or denial, is a common response among chronic disease patients, and can potentially lead to poor metabolic control (Taylor, 2009). In a study of New Mexico Hispanics, participants denied their diabetes diagnosis for years before coming to acceptance (McCloskey & Flenniken, 2010). As noted by the authors, denial impacted participants' readiness and ability to take steps to manage their diabetes (McCloskey & Flenniken, 2010). Readiness to change in diabetes education programming is a phenomenon that necessitates further study. Elucidating this occurrence can bring a new dimension to DSME specific to the psychological concerns affecting participants' ability to control their disease.

Our study agrees with prior research that social support has a positive effect on diabetes self-management (Rosal et al., 2005; McCloskey & Flenniken, 2010). Most notably, group-based interventions provide an outlet to share with others experiencing the same concerns (Baig et al., 2012). People living with chronic disease often struggle with feelings of isolation due to their illness. Group-based DSME programs offer

participants an opportunity to connect with others who share similar health problems. Through peer support, participants can express their feelings and anxieties with others who have the same disease and often the same frustrations (Funnell, 2010). This support may be particularly helpful when family or friends are not available. In many instances, peer support may be the only outlet to express emotions with others who can relate to their experiences.

As a final observation, we cannot overlook the cultural implications of the large representation of women in our investigation. The Hispanic value of *familia* influences decisions Latinas make about their health. In the traditional maternal role of Latinas, putting family needs first may result in conflict with both adhering to cultural norms and diabetes management recommendations (Mauldon, Melkus, & Cagganello, 2006). Preparing healthy meals may be problematic for Latinas, who are customarily the primary caregiver in the home (Padilla & Villalobos, 2007). Latinas may feel it is selfish or a burden to the family to buy special foods for a diabetic diet, which are often costly for a low-income household (Oomen, Owen, & Suggs, 1999). The following sentiment reflects this problem: *"Well, I had to cook for other people, and I had to eat that food because I don't want to cook for myself. And that's why it's very hard..."* Because self-denial and "going without" are considered honorable characteristics for Latinas, adherence to a diabetes self-care regimen may be a struggle (Thackeray et al., 2004). Carbone, Rosal, Torres, Goins, and Bermudez (2007) suggest that traditional gender roles can potentially constrain patients' ability to make healthful changes. Overcoming this problem is complex; however, including family members in DSME classes may help to educate them about diabetes management. In doing so, they will likely have a better understanding of how to best support their family members' efforts in diabetes self-care and learn about how healthy lifestyle habits can serve as a diabetes prevention measure.

Limitations

First, improvements were based on self-reported qualitative data. Second, participants were

predominately Mexican-American, and the findings may not be applicable to other Hispanic/Latino subgroups. Because *Si, Yo Puedo* was primarily tested with Mexican-Americans in Texas border communities, our next steps are to evaluate its effectiveness with other subgroups of Hispanic/Latinos. We expect the core theoretical principals of *Si, Yo Puedo*, e.g., self-efficacy, goal setting, and social support, to translate well with other similarly underserved populations. Finally, there were greater numbers of women compared to men, which may limit the transferability of the findings to males. Future studies involving a more heterogeneous sample are recommended.

Implications

Culturally competent care is a professional standard for those delivering health promotion

programs. *Si, Yo Puedo* advances this initiative and furthers our understanding of the merits of a DSME program designed for Hispanic/Latinos. Of importance, *Si, Yo Puedo* exemplifies a culturally sensitive remedy to reduce diabetes disparities that favorably influence health outcomes for this population.

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References

- Ahluwalia, I., Mack, K. A., Murphy, W., Mokdad, A. H., & Bales V. S. (2003). State-specific prevalence of selected chronic disease-related characteristics—Behavioral Risk Factor Surveillance System. *MMWR*, 52(S S08), 1-80.
- American Diabetes Association. (2007). Nutrition recommendations and interventions for diabetes. *Diabetes Care*, 30(Suppl. 1), S48-S65.
- Babamoto, K. S., Sey, K. A., Camilleri, A. J., Karlan, V. J., Catalasan, J., & Morisky, D. E. (2009). Improving diabetes care and health measures among Hispanics using community health workers: Results from a randomized control trial. *Health Education & Behavior*, 36(1), 113-126.
- Baig, A. A., Locklin, C. A., Wilkes, A. E., Oborski, D., Acevedo, J. C., Gorawara-Bhat, R., . . . Chin, M. H. (2012). “One can learn from other people’s experience”: Latino adults’ preferences for peer-based diabetes interventions. *The Diabetes Educator*, 38(4), 733-741.
- Brown, S., Garcia, A. A., & Winchell, M. (2002). Reaching underserved populations and cultural competence in diabetes education. *Current Diabetes Reports*, 2(2), 166-176.
- Brown, S. A., Garcia A. A., Winter, M., Silva, L., Brown, A., & Hanis, C. L. (2011). Integrating education, group support, and case management for diabetic Hispanics. *Ethnicity & Disease*, 21(1), 20-26.
- Brown, S. A. & Hanis, C. L. (2014). Lessons learned from 20 years of diabetes self-management research with Mexican Americans in Starr County, Texas. *The Diabetes Educator*, DOI: 10.1177/0145721714531336.
- Campbell, J., Walker, R., Smalls, B., & Egede, L. (2012). Glucose control in diabetes: The impact of racial differences on monitoring and outcomes. *Endocrine*, 1-12. DOI: 10.1007/s12020-012-9744-6.
- Carbone, E. T., Rosal, M. C., Torres, M. I., Goins, K. V., & Bermudez, O. I. (2007). Diabetes self-management: Perspectives of Latino patients and their health care providers. *Patient Education and Counseling*, 66, 202-210.
- Castillo, A., Giachello, A., Bates, R., Concha, J., Ramirez, V., Sanchez, C., & Arrom, J. (2010). Community-based diabetes education for Latinos: The diabetes empowerment education program. *The Diabetes Educator*, 36(4), 586-594.
- Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation. (2009). Diabetes data and trends: Age-adjusted

- incidence of end-stage renal disease related to diabetes mellitus (ESRD-DM) per 100,000 diabetic population, by race/ethnicity and sex, United States, 1980-2006. Atlanta, GA: Centers for Disease Control and Prevention. Retrieved from <http://www.cdc.gov/diabetes/statistics/esrd/fig5.htm>.
- Centers for Disease Control and Prevention. (2011). National diabetes fact sheet: National estimates and general information on diabetes and pre-diabetes in the United States. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.
- Cersosimo, E. & Musi, N. (2011). Improving treatment in Hispanic/Latino patients. *The American Journal of Medicine*, 124, S16-S21.
- Creswell, J. W. (2002). *Research design: Qualitative, quantitative, and mixed method*. Thousand Oaks, CA: Sage Publications.
- Funnell, M. M. (2010). Peer-based behavioural strategies to improve chronic disease self-management and clinical outcomes: Evidence, logistics, evaluation considerations, and needs for the future. *Family Practice*, 27, i17-i22.
- Funnell, M. M., Brown, T. L., Childs, B. P., Haas, L. B., Hosey, G. M., Jensen B., & Weiss, M. A. (2011). National standards for diabetes self-management. *Diabetes Care*, 34(Suppl. 1), S89-S96.
- Hawthorne, K., Robles, Y., Cannings-John, R., Edwards, A. G. K. (2010). Culturally appropriate health education for type 2 diabetes in ethnic minority groups: A systematic and narrative review of randomized control trials. *Diabetic Medicine*, 27, 613-623.
- Heinemann, L. (2008). Finger pricking and pain: A never ending story. *Journal of Diabetes Science and Technology*, 2(5), 919-921. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2769798/>.
- Hsieh, H., & Shannon S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.
- Ingram, M., Gallegos, G., & Elenes, J. (2005). Diabetes is a community issue: The critical element of a successful outreach and education model on the U.S.-Mexico border. *Preventing Chronic Disease*, 2(1), 1-9.
- Krueger, R. A. & Casey, M. A. (2009). (4th edition). *Focus groups: A practical guide for applied research*. Thousand Oaks, CA: Sage Publications.
- Liebman, J., Heffernan, D., & Sarvela, P. (2007). Establishing diabetes self-management in a community health center serving low-income Latinos. *The Diabetes Educator*, 33(Suppl. 132), 132S-138S.
- Lopez-Class, M., & Jurkowski, J. (2010). The limits of self-management: Community and health care system barriers among Latinos with diabetes. *Journal of Human Behavior in the Social Environment*, 20, 808-826.
- Mauldon, M., Melkus, G. D., & Cagganello, M. (2006). Tomando control: A culturally appropriate diabetes education program for Spanish-speaking individuals with type 2 diabetes mellitus—evaluation of a pilot project. *The Diabetes Educator*, 32(5), 751-760.
- McCloskey, M., & Flenniken, D. (2010). Overcoming cultural barriers to diabetes control: A qualitative study of Southwestern New Mexico Hispanics. *Journal of Cultural Diversity*, 17(3), 110-115.
- Merriam, S. B. (1998). *Case study research in education: A qualitative approach*. San Francisco: Jossey-Bass.
- National Institute of Health (NIH) (2011). Advances and emerging opportunities in diabetes research: A strategic planning report of the diabetes. Mellitus Interagency Coordinating Committee (NIH Publication No. 11-7522). Washington, D.C: US Government Printing Office.
- Norris, S. L., Nichols, P. J., Caspersen, C. J., Glasgow, R. E., Engelgau, M. M., Jack, Jr. L., . . . The Task Force on Community Preventative Services. (2002). Increasing diabetes self-management education in community settings: A systematic review. *American Journal Preventative Medicine*, 22(4S), L39-66.
- Oomen, J. S., Owen L. J., & Suggs, L. S. (1999). Culture counts: Why current treatment models fail Hispanic women. *The Diabetes Educator*, 25(2), 665-675.
- Padilla, Y. C., & Villalobos, G. (2007). Cultural responses to health among Mexican American women and their families. *Family and Community Health*, 30(Suppl. 1, No1S), S24-S33.

- Peña-Purcell, N., Boggess, M., & Jimenez, N. (2011). An empowerment-based diabetes self-management education program for Hispanic/Latinos: A quasi-experimental pilot study. *The Diabetes Educator*, 37(6), 770-779.
- Perez-Escamilla, R. (2010). Health care access among Latinos: Implications for social and health care reforms. *Journal of Hispanic Higher Education*, 9(1), 43-60.
- Philis-Tsimikas, A., Fortmann, A., Lleuva-Ocana, L., Walker, C., & Gallo, L. C. (2011). Peer-led diabetes education programs in high-risk Mexican Americans improve glycemic control compared with standard approaches. *Diabetes Care*, 34, 1926-1931.
- Philis-Tsimikas, A., Walker, C., Rivard, L., Talavera, T., Reimann, J. O. F., Salmon, M., Araujo R. (2004). Improvement in diabetes care of underinsured patients enrolled in Project Dulce: A community-based, culturally appropriate, nurse case management and peer education diabetes care model. *Diabetes Care*, 27(1), 110-115.
- Rosal, M. C., Goins, K. V., Carbone, E. T., & Cortes, D. E. (2004). Views and preferences of low-literate Hispanics regarding diabetes education: Results of formative research. *Health Education & Behavior*, 31(3), 388-405.
- Rosal, M. C., Olendzki, B., Reed G. W., Gumieniak, O., Scavron, J., & Ockene, I. (2005). Diabetes self-management among low-income Spanish-speaking patients: A pilot study. *Annals of Behavioral Medicine*, 29(2), 255-259.
- Scollan-Koliopoulos, M., Schechter, C. B., Caban, A., & Walker, E. A. (2012). Hispanic acculturation, psychosocial functioning, and routine support for diabetes management. *The Diabetes Educator*, 38(5), 715-722.
- Sixta, C. S., & Ostwald, S. (2008). Texas-Mexico border intervention by promotores for patients with type 2 diabetes. *The Diabetes Educator*, 34, 299-309.
- Taylor, S. E. (2009). *Management in chronic illness*. In *Health Psychology*, 7th ed. Boston: McGraw Hill.
- Thackeray, R., Merrill, R. M., & Neiger, B. L. (2004). Disparities in diabetes management practice between racial and ethnic groups in the United States. *The Diabetes Educator*, 30(4), 665-675.
- Truong, M., Paradies, Y., Priest N. (2014). Interventions to improve cultural competency in healthcare: A systematic literature review. *Health Services Research*, 14:99, 1-17.
- Vincent, D. & Pasvogel A., & Barrera, L. (2007). A feasibility study of a culturally tailored diabetes intervention for Mexican Americans. *Biological Research Nursing*, 9(2), 130-141.

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