

Diabetes self-management: Perspectives of Latino patients and their health care providers[☆]

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Abstract

Lifestyle modification programs tailored to experience, culture, psychosocial characteristics, and world-view can improve knowledge, self-care behaviors, and glucose control among Latinos with diabetes. Few data exist, however, on improving diabetes self-management among Latinos. In addition, views and practices of practitioners caring for these patients have received little attention.

Objective: This study describes findings from qualitative research to inform the refinement of self-management interventions tailored to Latino patients with type 2 diabetes.

Methods: Two practitioner focus groups assessed perceptions of patients' knowledge, attitudes, and behaviors. Four patient focus groups examined knowledge, beliefs, practices, barriers, and facilitators. Data were transcribed and subjected to content analysis.

Results: Thirty-seven patients seeking care at a community clinic participated, along with 15 health care practitioners. Important knowledge gaps regarding diabetes causation and self-management were identified. Negative attitudes towards self-management were common among patients. Key facilitators included strong religious faith and support of medical practitioners. Families both facilitated and prevented adoption of self-management practices.

Conclusion: This study provides unique insights into the knowledge, attitudes, practices, and perceived barriers facing Latino patients and their providers regarding diabetes self-management.

Practice implications: Study findings underscore the need to develop tailored programs for this population and to train practitioners on their implementation.

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1. Introduction

Differences in access to medical care do not fully explain the disparities between Latinos and whites who have diabetes [1], as glycemic control is poor even among Latinos receiving

treatment [2]. Another factor explaining these differences may be the limited success of traditional provider-directed intervention models among Latinos [3]. Such approaches frequently use individually-oriented theories that fail to recognize the importance of family values and socio-cultural beliefs [4]. Empowerment programs that emphasize patients' role in disease management have been proposed, but supporting data are limited for Latinos [5–7].

Studies have demonstrated the efficacy of lifestyle-based diabetes modification programs [8–11]. Tailoring programs to experience, culture and other characteristics has improved

[☆] For more information on the Reflective Practice section please see: Hatem D, Rider EA. Sharing stories: narrative medicine in an evidence-based world. *Patient Education and Counseling* 2004;54:251–253.

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diabetes management among Latinos [11,12]. The major subgroups that make up Latinos are Mexican Americans, Puerto Ricans, and Cubans. Each of these groups represents a culturally distinct subpopulation. The prevalence of diabetes and its risk factors (diet and other health practices, income, health status, and health outcomes) can differ in these populations [13–15]. Both nationally, and in the state of Massachusetts specifically, Puerto Ricans have higher rates of diabetes than Mexican Americans or Cubans [15–17].

Despite this, few data exist for Puerto Rican populations, the largest Latino group in the northeast US [11,17–21]. In addition, views and practices of health care providers caring for Puerto Rican patients with diabetes have received little attention. This paper describes findings from qualitative research to inform tailoring of diabetes self-management programs for Latino, particularly Puerto Rican, patients.

2. Methods

2.1. Design

Four patient and two practitioner focus groups were conducted following Institutional Review Board approval. Focus groups have been used successfully to explore diabetes self-management among Latinos [18,22,23] and to examine providers' perspectives regarding the management of patients with multiple risk factors [24] and with Latino patients specifically [4].

2.2. Setting and study participants

The study was conducted at the Health Center in Holyoke, Massachusetts. Holyoke has the third highest proportion of Latinos in Massachusetts [25]. Latinos represent 41.4% of the population in Holyoke; of these, 88.2% identify themselves as Puerto Rican [26]. More than three-quarters of the Latino population in Holyoke live below the Federal poverty level and the poor health, as determined by health indicators, is disproportionately present in the Latino population of the city [25].

Holyoke Health Center is a state-licensed 501(c)(3) organization that has provided medical and dental care to Medicaid and indigent populations in Holyoke since 1970 [25,27]. More than 16,000 people visit the Health Center annually; 90% of which are Latino and all of whom who live at or below the poverty level [25,27]. The Health Center treats over 1300 diabetes patients annually, 98% of which are Latinos with Type 2 diabetes [28].

Patients were identified using a patient database. Selection criteria included a diagnosis of type 2 diabetes, currently receiving treatment at the Health Center, being of Latino descent, and being 30–79 years old. Patients were recruited via telephone by Health Center staff using a standardized protocol. Approximately 20 patients were invited to participate in each group. Invitation letters were sent to all

primary care providers and staff (both hereafter referred to as practitioners) who routinely care for patients with diabetes.

2.3. Data collection

Patient group objectives included assessing: (1) diabetes-related knowledge; (2) beliefs and attitudes regarding diabetes self-management; (3) current self-management practices; and (4) perceived barriers and facilitators to practice of self-management behaviors. Practitioner group objectives were to assess: (1) diabetes self-management instructional strategies; (2) perceived patient barriers and facilitators to adopting self-management strategies; (3) experiences supporting patients' self-management strategies; and (4) beliefs and attitudes regarding patients' abilities to manage their diabetes. These objectives informed development of moderator's guides with open-ended questions and specific probes.

Participants' views may differ depending on their age and/or gender; therefore, groups were segmented as much as possible to enhance participation. In addition, we wanted to ensure adequate representation of men and younger adults because in our experience these groups tend to be more difficult to recruit. This approach enabled us to explore issues in detail and provided opportunities for themes to emerge that are unique to gender and age.

Focus groups lasted 1.5–2 h each. All discussions were audiotaped, and the staff session was videotaped. Practitioner sessions were conducted in English; however, because Health Center staff informed us at the beginning of our study that the majority of their Latino population, particularly adults, had limitations with English, patient groups were conducted in Spanish. An experienced moderator guided each discussion, and a note-taker was also present. Two native Spanish speakers (OIB and a colleague) moderated all patient groups. Two individuals (ETC, MIT) alternated moderator and note-taker roles for the practitioner groups. All participants provided written informed consent.

2.4. Data analysis

Data from patients were analyzed first, and therefore guided the analytical process. Audiotapes from the patient focus groups were transcribed verbatim in Spanish by the moderator (OIB), who also provided a detailed summary report in English. Native-speaking authors hand coded the data and conducted a preliminary content analysis based on methodologies described by Rubin and Rubin [29]. More specifically, a topical analysis was performed using the most salient issues discussed in the groups. After organizing the data by topic, participants' experiences were identified that reflected each area. The project team then discussed key observations until consensus was reached about the main findings and conclusions. In order to facilitate analysis and identification of key themes, the translation was kept as close as possible to the authentic Latino ways that

participants used to express their ideas and opinions. Notes and comments from the co-moderator, who brought expertise in diabetes, cultural competence, and community health, also added depth to the analysis.

Audiotapes from practitioner groups were transcribed verbatim by a professional transcriptionist. Each moderator coded her own data, which were then reviewed by the notetaker. Analysis by the project team was facilitated by handwritten notes and the staff videotape as well as the moderator's guides, which provided a structured framework to systematically review the findings. Data were examined both individually and within the context of other focus groups by all authors to identify patterns and themes. To achieve convergent validity in our conclusions, multiple people reviewed the data from each session independently.

3. Results

Thirty-seven patients and 15 practitioners participated in focus group sessions (see Table 1). All patients identified themselves as Puerto Rican, except one man from Colombia and one woman from the Dominican Republic. Length of time in the US varied from recent arrival to many years. On average, patients were in their mid-fifties. Older patients had less education (4.4 years) compared to younger patients (9.6 years). Patients in this study had diabetes for an average of 7.6 years, and mean HgA1c (based on last available measure before the focus groups), was 7.2. All patients had two or more co-morbid conditions (range 2–8). The most common conditions were hypertension (87.9%) and obesity (86.2%), followed by dyslipidemia (66.7%) and depression (46.4%). Most patients (93.8%) were on Medicaid and/or Medicare. These data are consistent with both the general patient population at the Health Center and of Holyoke as a whole [25].

The eight staff participants included medical paraprofessionals, nurses, educators, and outreach workers. The seven primary care providers included physicians, physician

assistants, and nurse practitioners. Practitioners averaged 5 years of employment at the Health Center. One provider was Puerto Rican and one was Mexican-American; all practitioners except one spoke Spanish. Because of the large number of Hispanics with limited language skills, the Health Center employs mostly bilingual personnel; 122 (80%) of the 153 staff speak Spanish and all members of the Diabetes Self-Management team are bilingual [25].

3.1. Diabetes-related knowledge

Participants expressed a wide range of impressions about diabetes and its causes, including a perceived susceptibility due to ethnicity and heredity (see Table 2). Most participants viewed diabetes as an inevitable consequence of being Puerto Rican and could identify one to as many as 15 people in their immediate families with the disease. Controllable factors, such as diet (sugar and starches) were also mentioned by patients, who believed they had diabetes because of what they ate. Patients in one group (FG #4) named caffeine and pork as specific factors contributing to the development of their disease. Stress was also identified by patients in all four focus groups as a cause of diabetes, with the belief that the more anxious one was, the more chance one had to contract the disease or worsen its symptoms.

Most patients had some knowledge of and/or personal experience with diabetes-related complications and could name various co-morbid conditions, including heart disease, hypertension, high cholesterol, gangrene, and vision, kidney, and liver problems. When one patient (in FG #3) asked how many had had their vision affected by diabetes or had "leg problems", all participants in the group raised their hands.

3.2. Beliefs and attitudes regarding diabetes self-management

Patients expressed a perception of limited capacity to manage their diabetes citing the ongoing difficulty of

Table 1
Demographic characteristics of Latino patients with diabetes

	Younger women (n = 8)	Younger men (n = 10) ^a	Older women (n = 10) ^a	Older men (n = 9)	Total (n = 37)
Focus group (no.)	1	2	3	4	–
Age (years)	47.4 ± 4.4	44.1 ± 6.9	63.3 ± 7.6	65.4 ± 7.3	55.1 ± 11.5
Education (years) ^b	10.3 ± 2.4	8.9 ± 3.9	4.4 ± 4.4	4.5 ± 2.9	7.0 ± 3.4
Years with diabetes ^c	7.0 ± 4.8	6.5 ± 8.6	9.3 ± 6.3	7.7 ± 4.7	7.6 ± 6.2
Hemoglobin A1c ^d	7.3 ± 2.2	7.4 ± 1.5	6.9 ± 0.8	7.2 ± 0.8	7.2 ± 1.3
Body mass index (BMI) ^e	35.1 ± 5.8	29.6 ± 4.4	35.2 ± 9.3	32.7 ± 7.0	33.1 ± 7.0
Insurance status ^f	75% Insured	100% Insured	100% Insured	100% Insured	93.8% Insured

Note: All data were obtained from medical records unless otherwise noted; all values represent the mean ± standard deviation (S.D.).

^a Groups 2 and 3 included one older woman and one older man, respectively, which were excluded from estimations of demographic characteristics.

^b Based on self-reported data from eight subjects in groups 1, 2, and 4, and five subjects in group 3.

^c Based on data from six subjects in group 1, seven in group 2, and nine in groups 3 and 4.

^d Based on last available measure before the focus group from eight subjects in group 1; ten in groups 2 and 3; and nine from group 4.

^e Based on last available measure before the focus group from six subjects in group 1, seven in groups 2 and 4, and nine in group 3.

^f Based on data from eight subjects in groups 2 and 3, and seven in groups 1 and 4. Insurance included Medicaid, Medicare, or both.

Table 2
Representative quotes from patients and providers

Themes	Patients	Providers
Diabetes-related knowledge		
Causes	<p>“We’re all born with diabetes. Among Puerto Ricans particularly, diabetes runs in the blood.” (FG4)</p> <p>“In my case, the diabetes, I believe is from excess of stress. I am too much of a nervous person, I worry.” (FG1)</p> <p>“[I] used to eat lots of sweets.” (FG1)</p> <p>“Pork meat is a poison to people with diabetes. . .[so is] caffeine.” (FG4)</p>	
Complications	<p>“... I suffered a heart attack as a consequence of the sugar ... and my husband was also diabetic. He lost his vision, his kidneys were damaged and he needed dialysis. He also had gangrene and had a leg amputated.” (FG3)</p>	
Beliefs and attitudes regarding diabetes self-management	<p>“...old habits, way of life, of not having breakfast...to change habits is difficult.” (FG2)</p> <p>“...sometimes you follow a diet wishing to lose some weight but you don’t achieve it.” (FG1)</p> <p>“I get depressed, very sad, because I want to control diabetes and would like to lose weight. I do my best...” (FG1)</p>	<p>“... I tell patients that diabetes... is something that can be controlled ... working together you can live a pretty normal, healthy life...” (FGA)</p> <p>“I think they can understand the concepts of checking their finger or doing the diet. Whether or not they can do the diet, do the exercises [is unknown].” (FGB)</p> <p>“It would take a revolutionary act [for patients] to eat well and exercise.” (FGB)</p>
Self-management practices	<p>“test your sugar” (FG3)</p> <p>“take the medications every day” (FG2)</p> <p>“do your exercise” (FG1)</p> <p>“eat healthy meals” (FG2)</p> <p>“check your feet” (FG4)</p> <p>“...this [goal-setting] is like a New Year’s resolution, but you don’t follow it, and ... you say: ‘ah, I’m no longer interested in doing this’ and then you continue with the same [bad habits].” (FG2)</p> <p>“... each of us has his own way... to control diabetes. I am a person that likes to eat. Lately, I have tested high and now I am trying to eat a little less... Also I try to control my weight.” (FG4)</p> <p>“I went to the classes [offered by the Health Center].” (FG1)</p>	<p>“When patients come in, we do what we can. Are they doing finger sticks? Did they have an eye appointment in the last year... a foot exam in the last 6 months... every visit we check this.” (FGA)</p> <p>“... some patients might not understand goal-setting. You give them the paper. What is goal-setting? Really ask, ‘What are the goals?’ ... you can read it off to them—this is a goal—but do they really understand? Probably just a little.” (FGB)</p> <p>“I think most of them [patients] do understand it [goal-setting], it is just how to get started.” (FGA)</p> <p>“It takes [patients] a long time to accomplish just one goal... say 10 pounds if they can lose it in 3 months. That is a whole lot. It could take them 6 months and they don’t always do that...” (FGA)</p>
Perceived barriers		
Culture	<p>“... my wife, she gives little importance to my illness. I feel she helps with the needs of my disease very little. She cooks foods that I am not supposed to eat and if I do not eat them she says that she is not going to prepare food for me again.” (FG2)</p> <p>“I don’t eat fried food. But my children want fried food.” (FG4)</p>	<p>“... [it’s] more typical among people who are still glued in traditional Puerto Rican culture not expect to be in control of their lives. Their families ... employers, and their government [are] in control, so there is not the desire to be in control.” (FGB)</p>
Structural/environmental factors	<p>“... respiratory problems, leg problems, hypertension, and problems with stairs don’t let me walk.” (FG3)</p>	<p>“... they have so many other things going on... substance abuse, depression, abuse, or they really have a hard time controlling their sugar or blood pressure.” (FGA)</p>

Table 2 (Continued)

Themes	Patients	Providers
	<p>“I have [been] going for over a week without medications because of lack of money...I am hoping that the diabetes will stay well.” (FG1)</p> <p>“...there is a problem with the [glucometer] (FG1,2) ... it stops working...I went a month without testing my sugar because of that.” (FG4)</p> <p>“...workplaces are not adequate for us...it is hard to eat regularly.” (FG2)</p>	<p>“There are so many problems that make it hard for them to understand... You have to go after the main disease and try to motivate them with other people’s help.” (FGB)</p> <p>“...if you could spend 15–30 minutes for every diabetic that came in after the visit or before...you could probably accomplish a lot. But...right now, that can’t be done.” (FGA)</p>
Perceived facilitators		
Culture	<p>“My son calls me or I call him. When he doesn’t come to my house, I go to his. When I am with him I am relaxed, I am happy to spend the day with him, my daughter-in-law, and my grandchildren.” (FG3)</p> <p>“Talk over the phone [with family and friends]...” (FG3)</p> <p>“Your neighbors! They are the family, we should help each other.” (FG3)</p> <p>“The hardest thing is to have breakfast because I don’t have the habit of doing it. Then when I got diabetes, I believed that the more I would eat, the sicker I would get. But Ms. Paula [the nutritionist] taught me the importance of three healthy meals...” (FG4)</p> <p>“...and I thank God...I am no longer using insulin, I tell the doctor, prescribe it just to have it available in case, but thanks to God...I am not using it.” (FG4)</p>	<p>“Usually I ask them to bring a family member that will help with their care. I [provide instructions] and ask a family member to repeat it to them, somehow they understand it better...we speak Spanish, [but] there are a lot of words that Puerto Ricans use different[ly].” (FGB)</p> <p>“People who seem to be doing well...are in a supportive family structure, and I think a lot of times they are doing well because they are doing this for their family.” (FGA)</p> <p>“...when they think about food and they say ‘...it is my spouse that cooks.’ I tell them have your spouse help you...go with you to see the nutritionist...I tell them to get the whole family involved.” (FGA)</p> <p>“...a lot of that [desire to control the disease] is transferred...because they like their health care provider, they are real happy to have us tell them what to do...” (FGB)</p> <p>“I’ve been here 5.5 years. I have many of the same patients. It’s much easier to...push their buttons to motivate them...[compared to] the ones that first start here.” (FGB)</p>
Structural/environmental factors	<p>“...if you don’t have food, there are some churches and agencies...” (FG2)</p> <p>“...and community kitchens that distribute [food].” (FG3)</p> <p>“If [you] run out of insulin, here in the Health Center, they can help.” (FG2)</p>	

Patients: FG1, younger women; FG2, younger men; FG3, older women; FG4, older men. Providers: FGA, staff; FGB, practitioners.

breaking familiar habits and usual routines as key issues that were on their minds. Practitioners voiced concern about their patients’ confidence and abilities, but at the same time viewed the disease as a manageable condition, and communicated this perspective to their patients. They believed their patients could understand the basic concepts regarding diabetes self-management, such as finger sticks and diet, but also acknowledged the challenges of translating this understanding into practice. These challenges were often a point of animated discussion among patients, who described their aggravation with not being able to produce positive results with diet, physical activity, or general glucose control. Consequently, depression and unhappiness

were common themes among patients, who openly expressed frustration over expected outcomes.

3.3. Self-management practices

Feedback from practitioners revealed a strong commitment to communicate key self-management messages to their patients at each visit. They acknowledged how difficult and time-consuming diabetes is to control for many of their patients. Participants, for their part, were able to recite numerous specific self-management strategies regarding personal hygiene, diet, exercise, and use of medications.

When asked about the use of goal-setting as a specific self-management strategy, practitioners explained that newly diagnosed patients receive a packet with a list of goals from which to select their preference. Some practitioners viewed goal-setting as a tool for monitoring health care interventions and for self-care. Not all practitioners believed their patients understood the concept of goal-setting and therefore not all used the goal-setting form. Instead, some preferred to work with patients on highest priority needs at the time of each visit. During patient visits, practitioners talked about the importance of focusing on comprehension of defined concepts (e.g., finger stick) or on achievement of specific long-term diet or exercise outcomes.

When patients were asked if they had learned to set goals as a way to manage their disease only one person in FG #2 appeared aware of the concept, and quickly dismissed it as an ineffective approach, referring to it as “...like a New Year’s resolution you don’t follow.” When asked how they monitor their disease (without setting goals), patients indicated that they managed in their own way. One man in FG #4 was motivated to make self-imposed changes in his eating behaviors; others joined group classes or sought guidance from individuals at the Health Center.

3.4. Perceived barriers

Explanations for lack of self-control related to dietary and physical activity behaviors included both cultural and structural factors related to individual, family, and environmental constraints.

3.4.1. Culture

Practitioners attributed their patients’ external locus of control to high levels of dependency and conformity. They identified their patients’ perception of having little or no control over their lives as a key barrier in the management of their disease. This lack of control was equated with being “glued in traditional Puerto Rican culture”, which neither demanded nor expected such control.

Participants in all focus groups spoke of the challenges of changing dietary behaviors while keeping their spouse or children happy. The centrality of the family and the dominance of females in meal preparation roles position these challenges as significant obstacles in the daily management of a chronic disease among Puerto Ricans.

3.4.2. Structural/environmental factors

Practitioners identified patients’ multiple co-morbid conditions and resulting health complications as significant barriers to their care. Some of these problems may be viewed as expected consequences of the disease, such as hypertension; others, however, stem from psychological issues, addictive behaviors, or socioeconomic hardships resulting in less-than-optimal living conditions. Another related barrier cited by practitioners that emerged as a sub-theme was

patients’ limited understanding of information due to compromised cognitive capacity from their physical and psychological problems.

Patients also talked about the many other medical conditions they had, which prevented them from being able to manage in their daily lives. Financial constraints were also common themes among participants, which impeded their ability to get adequate medications and healthful foods. Another barrier, mentioned in three of the focus groups, was the ongoing problem patients had with their glucometer not functioning properly.

Practitioners cited as a barrier the lack of time they had to spend with their patients. Patients also identified time constraints as a barrier, but within the context of their work environment, and not having adequate time to eat regularly.

3.5. Perceived facilitators

Cultural and structural issues related to individuals, their families and their environment were also identified by patients and practitioners as factors that facilitated the care and management of diabetes. As previously noted, support from family emerged as both a barrier and facilitator to self-management.

3.5.1. Culture

Turning to others in times of need was a recurrent theme in all patient focus group discussions. Participants talked about the collective strength they draw from their family and friends when feeling sad or depressed, and the benefits they experience from talking and spending time with others. Families were seen by practitioners as facilitators to self-management, and family involvement was identified as an important factor in enhancing patients’ comprehension and motivation.

Practitioners expressed a strong personal commitment to encourage patients’ self-management practices and acknowledged their role in the lives of their patients. This was particularly true among practitioners who had long-standing relationships with individual patients and felt a strong connection to them and their families. Patients also acknowledged the support they receive from practitioners to address their ongoing needs and challenges.

One factor mentioned by patients, but not by practitioners, was the important role of spirituality and faith in the lives of these individuals. Patients often attributed positive behaviors to God’s assistance and talked about the strength and comfort they received from saying prayers and giving thanks for God’s guidance.

3.5.2. Structural/environmental factors

At first, when asked which community resources and medical and social services patients were aware of to assist people with diabetes, there was a lack of understanding regarding the intent of the question. When the moderator reworded the question to ask: “When you have problems, in

case of an emergency, where do you go to or who do you ask for help?” several key factors emerged. In addition to family and friends, who represented the first line of assistance, a number of community or soup kitchens and church groups were mentioned to go to for food. Patients also talked about free supplies and services that the Health Center provided for those in need.

4. Discussion and conclusion

4.1. Discussion

This qualitative study provides insight about beliefs, attitudes and behaviors of Latino patients and their practitioners regarding diabetes self-management. These findings confirm previous reports regarding patient knowledge and attitudes [18,20,21,23]. All study participants demonstrated some knowledge about diabetes and self-management, although misunderstandings regarding causation were identified across all ages and educational levels.

Patients in this study expressed a perception of limited capacity to manage the emotional, environmental, and economic factors that challenge diabetes control. Given that Heisler et al. [30] found that patients' assessment of their diabetes self-management significantly correlated with glycemic control, this lack of confidence should be addressed in an intervention context. Empowerment models, which can help raise confidence, have shown promise with Latinos [5–7] and deserve further exploration.

Two key facilitators of diabetes self-management emerged: family support and religious faith. Support of medical practitioners was also noted. Several researchers have recommended that diabetes self-management education among Latinos consider the family context [31–33]. Equally important was the potential for traditional gender roles to constrain patients' ability to make healthful changes. Male patients' ability to make dietary adjustments can be impacted by women's traditional dominance in the kitchen and household. Conversely, female patients' self-care can be restricted by their sense of duty to meet family needs first, particularly in food selection and preparation. This finding reflects previous research on the dual nature of family in diabetes care and education among Latinos [22]. Gallant reported a modest positive relationship between social support and chronic disease self-management, especially diabetes, but also noted the negative influences on self-management that social network members can have [34]. The importance of family as a facilitator appeared to be perceived accurately by practitioners in this study. Recognizing the family as a potential barrier was not acknowledged by practitioners within the context of cultural roles, however. This discrepancy provides a potential avenue for tailoring of self-management interventions to diverse family situations.

As reported among other minority populations [35], religiosity was deeply rooted in the daily life of Puerto Ricans

and the cultural fabric of their community. Dominant themes included the importance of spirituality and how general socially-induced stress and multi-caregiving responsibilities interfere with disease management. This is in keeping with a study of Latino adults that emphasized integration of spirituality into the concept of healthy living [36]. Practitioners in this study did not recognize this emphasis on religion in patients' locus of control, a gap that is illuminating and provides another promising tailoring opportunity in clinical interventions. It is also unclear if practitioners fully understood the distinction between patients' reactions to high levels of socioeconomic hardships and other stressors and attributed adherence to traditional cultural values.

The most significant finding of this study was the apparent disconnect between practitioners' approach to guiding diabetes self-management and state-of-the-art thinking from efficacy research. Perhaps influenced by their reported time limitations, practitioners emphasized long-term, general goals for “diet” and “exercise” (terminology reflected in patients' language) rather than short-term, tailored goals for healthy eating and physical activity. They emphasized giving instructions and information rather than counseling patients on realistic goals and progressive lifestyle changes. Efficacy trials are conducted under ideal conditions, and results of such trials have not translated well into clinical practice [37]. Guidelines are needed to implement lifestyle-based diabetes self-management programs in clinical and community settings to improve long-term results [38]. Effectiveness studies therefore represent an urgent research need. Practitioners expressed interest in receiving such information, so new protocols may be well received. Practitioners' reported time constraints remain a concern, however.

Another apparent incongruence between practitioners and patients was in their views about quality of life with diabetes. Practitioners expressed confidence that patients could live “normal lives” with the disease and reported communicating this belief to patients. Patients, however, did not equate the considerable effort and planning required for self-management with a normal, i.e. disease-free, life. Interventions should address this difference in perception.

The opportunity to compare and contrast patients' and practitioners' views is a strength of this study. The small sample size is a limitation, although exploratory efforts typically rely on even smaller samples. Data on literacy, health literacy level, and learning preferences would have provided further insight into this population's needs. Probing into the acceptability of a collectivist (family-oriented) approach to goal-setting and preferred approaches for practitioners to assist patients in developing effective self-management practices would also have been useful.

Finally, during patient focus groups, one of the moderators [OIB] observed that participants tended to be very agreeable and accept what others said. This may have been a result of the Latino culture and its emphasis on respect [39]. However, this behavior did not appear to prevent individuals from openly expressing their ideas and honest opinions.

4.2. Conclusion

This qualitative study provides unique insights into the knowledge, attitudes, practices, and perceived barriers facing Latino patients and their health care providers regarding diabetes self-management. The findings add to the literature on strategies to address a disease that requires complex management and is taking a considerable toll in this population. These strategies will inform the development of future lifestyle-based interventions aimed at promoting active patient self-management of diabetes, a critical component of current treatment models to improve care outcomes in this population. Findings from this study also identified a number of opportunities for further research and practice, including the need to tease out the distinction between cultural factors and structural conditions in self-management of diabetes.

4.3. Practice implications

Focus group data from this study revealed a number of discrepancies between patients and providers that may help elucidate why current diabetes self-management models do not fully address the needs and priorities of Latino patients. Several elements of care reported by patients that were not adequately reflected in current treatment approaches in this population included the central role of family in goal-setting, religious faith, socially-induced stress, and perceptions of quality of life. Practitioners' tendency to focus on longer-term, more directive goals rather than short-term lifestyle factors was also noted. Recent studies recognize the importance of these factors in this population [7]. Therefore, a reasonable next step is to develop guidelines to educate practitioners on how to adopt a comprehensive approach to diabetes self-management. This approach would incorporate tailored short-term goals that involve the family and community resources in developing healthful eating and physical activity habits, and recognize the role of religious faith to improve patients' self-confidence, behavioral capability, and promote their overall quality of life.

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References

- [1] Harris MI. Racial and ethnic differences in health care access and health outcomes for adults with type 2 diabetes. *Diabetes Care* 2001;24:454–9.

- [2] Brown JB, Harris SB, Webster-Bogaert S, Wetmore S, Faulds C, Stewart M. The role of patient, physician and systemic factors in the management of type 2 diabetes mellitus. *Fam Pract* 2002;19:344–9.
- [3] Oomen JS, Owen LJ, Suggs LS. Culture counts: why current treatment models fail Hispanic women with type 2 diabetes. *Diabetes Educator* 1999;25:220–5.
- [4] Lipton RB, Losey LM, Giachello A, Mendez J, Girotti MH. Attitudes and issues in treating Latino patients with type 2 diabetes: views of healthcare providers. *Diabetes Educator* 1998;24:67–71.
- [5] Lorig KR, Ritter PL, Gonzalez VM. Hispanic chronic disease self-management: a randomized community-based outcome trial. *Nurs Res* 2003;52:361–9.
- [6] Garvin CC, Cheadle A, Chrisman N, Chen R, Brunson E. A community-based approach to diabetes control in multiple cultural groups. *Ethn Dis* 2004;3:S83–92.
- [7] Kieffer EC, Willis SK, Odoms-Young AM, Guzman JR, Allen AJ, Two Feathers J, Loveluck J. Reducing disparities in diabetes among African American and Latino residents of Detroit: the essential role of community planning focus groups. *Ethn Dis* 2004;3:S27–37.
- [8] Diabetes Prevention Program Research Group. The Diabetes Prevention Program: reduction in the incidence of type 2 diabetes. *New Engl J Med* 2002;346:393–403.
- [9] UK Prospective Diabetes Study (UKPDS) Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet* 1998;352:837–53.
- [10] Norris SL, Engelgau MM, Narayan KM. Effectiveness of self-management training in type 2 diabetes: a systematic review of randomized controlled trials. *Diabetes Care* 2001;24:561–87.
- [11] Rosal MC, Olenzki B, Reed GW, Gumieniak O, Scavron J, Ockene I. Diabetes self-management among low-income Spanish-speaking patients: a pilot study. *Ann Behav Med* 2005;29:225–35.
- [12] Brown SA, Garcia AA, Kouzekanani K, Hanis CL. Culturally competent diabetes self-management education for Mexican Americans: The Starr County border health initiative. *Diabetes Care* 2002;25:259–68.
- [13] Hajat A, Lucas JB, Kington R. Health outcomes among Hispanic subgroups: data from the National Health Interview Survey, 1992–95. *Adv Data* 2000;25:1–14.
- [14] Loria CM, Bush TL, Carroll MD, Looker AC, McDowell MA, Johnson CL, Sempos CT. Macronutrient intakes among adult Hispanics: a comparison of Mexican Americans, Cuban Americans, and mainland Puerto Ricans. *Am J Public Health* 1995;85:684–9.
- [15] Flegal KM, Ezzati TM, Harris MI, Haynes SG, Juarez RZ, Knowler WC, Perez-Stable EJ, Stern MP. Prevalence of diabetes in Mexican Americans, Cubans, and Puerto Ricans from the Hispanic Health and Nutrition Examination Survey, 1982–1984. *Diabetes Care* 1991;14:628–38.
- [16] Diabetes Disparities Among Racial and Ethnic Minorities. AHRQ Publication No. 02-P007. Rockville, MD: Agency for Healthcare Research and Quality; November 2001. [accessed 20 October 2006 at <http://www.ahrq.gov/research/diabdisp.htm>].
- [17] Tucker K, Bermudez O, Castaneda C. Type 2 diabetes is prevalent and poorly controlled among Hispanic elders of Caribbean origin. *Am J Public Health* 2000;90:1288–93.
- [18] Rosal MC, Goins KV, Carbone ET, Cortes DE. Views and preferences of low-literate Hispanics regarding diabetes education: results of formative research. *Health Educ Behav* 2004;31:388–405.
- [19] Rosal MC, Carbone ET, Goins KV. Use of cognitive interviewing to adapt measurement instruments for low-literate Hispanics. *Diabetes Educator* 2003;29:1006–17.
- [20] von Goeler DS, Rosal MC, Ockene JK, Scavron J, De Torrijos F. Self-management of type 2 diabetes: a survey of low-income urban Puerto Ricans. *Diabetes Educator* 2003;29:663–72.
- [21] Brunt MJ, Milbauer MJ, Ebner SA, Levenson SM, Millen BE, Quatromoni P, Chipkin SR. Health status and practices of urban Caribbean Latinos with diabetes mellitus. *Ethn Dis* 1998;8:158–66.

- [22] Anderson RM, Goddard CE, Garcia R, Guzman JR, Vasquez F. Using focus groups to identify diabetes care and education issues for Latinos with diabetes. *Diabetes Educator* 1998;24:618–25.
- [23] Quatromoni PA, Milbauer M, Posner BM, Carballeira NP, Brunt M, Chipkin SR. Use of focus groups to explore nutrition practices and health beliefs of urban Caribbean Latinos with diabetes. *Diabetes Care* 1994;17:869–73.
- [24] Rosal MG, Ockene JK, Luckmann R, Zapka J, Goins KV, Saperia G, Mason T, Donnelly G. Coronary heart disease multiple risk factor reduction: providers' perspectives. *Am J Prev Med* 2004;27:54–60.
- [25] Uniform Data Submission (UDS). Holyoke, MA: Holyoke Health Center; 2005.
- [26] Census Bureau Data; 2000 [accessed 20 October 2006 at <http://www.census.gov/index.html>].
- [27] Holyoke Health Center Webpage [accessed 20 October 2006 at <http://www.hhcinc.org/aboutus.php>].
- [28] Patient Electronic Care System (PECS). Holyoke, MA: Holyoke Health Center; 2005.
- [29] Rubin H, Rubin I. *Qualitative interviewing: the art of hearing data*. Thousand Oaks: CA Sage Publications; 1995.
- [30] Heisler M, Smith DM, Hayward RA, Krein SL, Kerr EA. How well do patients' assessments of their diabetes self-management correlate with actual glycemic control and receipt of recommended diabetes services? *Diabetes Care* 2003;26:738–43.
- [31] Wen LK, Shepherd MD, Parchman ML. Family support, diet and exercise among older Mexican Americans. *Diabetes Educator* 2004;30:980–93.
- [32] Chesla CA, Fisher L, Skaff MM, Mullan JT, Gilliss CL, Kanter R. Family predictors of disease management over one year in Latino and European American patients with type 2 diabetes. *Fam Process* 2003;42:375–90.
- [33] Fisher L, Chesla CA, Skaff MA, Mullan JT, Gilliss CL, Kanter R. Disease management status: a typology of Latino and Euro-American patients with type 2 diabetes. *Behav Med* 2000;26:53–66.
- [34] Gallant MP. The influence of social support on chronic illness self-management: a review and directions for research. *Health Educ Behav* 2003;30:170–95.
- [35] Samuel-Hodge CD, Headen SW, Skelly AH, Ingram AF, Keyserling TC, Jackson EJ, Ammerman AS, Elasy TA. Influences on day-to-day self-management of type 2 diabetes among African-American women: spirituality, the multi-caregiver role, and other social context factors. *Diabetes Care* 2000;23:928–33.
- [36] Higgins PG, Learn CD. Health practices of adult Hispanic women. *J Adv Nurs* 1999;29:1105–12.
- [37] Peters RM. Theoretical perspectives to increase clinical effectiveness of lifestyle modification strategies in diabetes. *Ethn Dis* 2004;14: S2-17-22.
- [38] Eakin EG, Bull SS, Glasgow RE, Mason M. Reaching those most in need: a review of diabetes self-management interventions in disadvantaged populations. *Diabetes/Metab Res Rev* 2002;18:26–35.
- [39] Bassford TL. Health status of Hispanic elders. *Clin Geriatr Med* 1995;11:25–38.