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Diabetes Causation Beliefs Among Spanish-Speaking Patients

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Abstract

Purpose—The purpose of this study was to explore how the inquiry of cultural diabetes causation beliefs can improve Hispanic/Latino patient self-management.

Methods—Two semistructured focus groups were conducted with 13 Hispanic/Latinos adults diagnosed with type 2 diabetes mellitus. Prior to taking part in the group discussion, participants completed a demographic survey and the Illness Perception Questionnaire–Revised.

Results—The top 5 diabetes causation items endorsed by participants per the questionnaire included stress or worry, behavior, hereditary, diet/eating habits, and family problems/worries. The qualitative analysis revealed stress as a recurring theme for a cause of diabetes. Work stress was specifically identified as a contributor to unhealthy eating and diabetes. Most participants were aware of and believed in *susto* and referred to it as *coraje* (anger). Participants believed that asking patients about their diabetes causation beliefs and emotional status can help health professionals (1) better understand the patient and (2) identify and prioritize diabetes treatments. Participants also indicated that the role of doctors is important and the encouragement that they give to patients is clinically and spiritually valued.

Conclusions—Stress was identified as a cause of diabetes in addition to unhealthy diets and heredity. Asking patients about diabetes causation beliefs and emotional status may help prioritize treatment and management goals.

The 2015 *Morbidity and Mortality Weekly Report* on the health status of US Hispanics/Latinos illustrates that this group continues to face substantial disparities in type 2 diabetes mellitus prevalence and outcomes.¹ The prevalence of type 2 diabetes mellitus among Hispanics/Latinos ranges from 14% to 16%, compared to 6% for non-Hispanic whites.¹ This

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group is also nearly 3 times more likely to experience diabetes-related complications, disability, and mortality.^{1–4} Hispanics/Latinos further face disparities in receiving quality care as put forth by the American Diabetes Association.⁵ For instance, as compared with non-Hispanic whites, they are less likely to receive standard clinical information, examinations (eg, A1C test, foot and eye examinations), and referrals to specialists.^{6–10} These disparities contribute to treatment nonadherence, delayed health care use, and overutilization of acute emergency care.^{10–14}

Given that the Hispanic/Latino population is one of the largest and fastest-growing ethnic minority groups in the United States, more culturally and linguistically competent treatment services are needed to improve diabetes outcomes in this group.^{10,15} Among health care delivery system leaders and stakeholders, there is consensus that cultural competence training among health professionals is one strategy for reducing health disparities and ensuring that marginalized racial/ethnic populations receive “equitable, effective, and culturally appropriate clinical care.”^{10,16,17} Thus, the Institute of Medicine, US Agency for Healthcare Research and Quality, US Department of Health and Human Services Office of Minority Health, and Association of American Medical Colleges (AAMC) recommend that health professionals enhance their cultural competency by “understanding and responding effectively to the cultural and linguistic needs brought by the patient to the health care encounter” and “valuing diversity, self-assessment, managing dynamics of differences, acquiring and institutionalizing knowledge, and adapting to diversity and the cultural contexts of individuals served.”^{10,17–20} To evaluate health professionals’ cultural competence, the AAMC established 5 domains to be used as an assessment tool for cultural competence training in medical education curricula (Table 1).²⁰ This research is guided by 2 of the cross-cultural clinical skill assessments in domain V of the AAMC tool—specifically, health professionals’ (1) knowledge of differing values, cultures, and beliefs and (2) communication skills.

Enhancing the cross-cultural clinical skills of health professionals is particularly important because they are one of the primary sources of diabetes information for Hispanics/Latinos.²¹ The communication and provision of diabetes information via a positive provider-patient clinical interaction are also important because they increase patients’ satisfaction, health knowledge, adherence to medical advice, and engagement in self-care behaviors and improve glycemic control.^{6,13,22–25} Among Hispanics/Latinos, however, these improvements are most likely to occur when diabetes information or medical advice is provided by culturally competent health professionals.^{13,14,23,26–30} Consequently, innovative ways of communicating and delivering diabetes information in a culturally competent manner are needed.

Culture-Centered Approaches

There are many strategies for attaining cultural competence; one approach is to understand how the disease process is conceptualized within a culture and how that influences a patient’s theory about his or her disease etiology, prognosis, and outcome.³¹ This approach, known as *culture centered* in the health communications literature, may be particularly useful when working with Hispanics/Latinos because there is a historical cultural belief that

strong or negative emotions, such as stress, can cause diabetes.^{32–34} This belief is known as *susto*, or “fright sickness,” and for Hispanics/Latinos who hold this belief, it in turn may play a role in how type 2 diabetes mellitus self-management is approached.^{31–34} Although many Hispanics/Latinos continue to believe that stress causes diabetes, health professionals primarily believe that the causes of diabetes are grounded within a biomedical framework (eg, genes, obesity).^{35–37} Bridging both perspectives is an example of how health professionals can take steps toward achieving cross-cultural competence.^{10,17–20}

There is extensive research regarding cultural-centered health beliefs such as *susto* and the importance of culturally competent health professionals; however, the framework for integrating health beliefs and attaining cultural competence remains sparse and unclear. To address this gap, a mixed-methods study was conducted to (1) identify diabetes causation beliefs among a group of Hispanics/Latinos with diabetes and (2) explore how the inquiry of these beliefs by a health professional can improve patient self-management. A structured survey and 2 focus groups were conducted to elicit Hispanic/Latino patient perspectives on diabetes causation beliefs and how this information might benefit health professionals in prioritizing and establishing diabetes management goals. We propose that Hispanic/Latino patients believe in the concept of *susto* and that they would support the integration of this belief into their interactions with health professionals.

Research Design and Methods

Design

In this study, a mixed-method approach was used to capture a numeric observation of participant diabetes causation beliefs and contextualize these data with participants’ words and insight into why and how these beliefs may be useful for health professionals. Mixed-method research integrates the use of quantitative and qualitative methodologies to draw on the strengths of each and corroborate convergence of findings.³⁸ Together, researchers and health professionals from Virginia Commonwealth University’s (VCU’s) Collaborative Care Diabetes Pharmacotherapy Program, Department of Family Medicine and Population Health, and CrossOver Healthcare Ministry designed a study that embedded, within focus groups, a short questionnaire to objectively assess the diabetes causation beliefs of Hispanic/Latino patients with type 2 diabetes. The focus groups were conducted to qualitatively capture Hispanic/Latino perspectives on culture-centered diabetes causation beliefs, such as *susto*, and to identify how inquiry of these beliefs can enhance health professionals’ cross-cultural clinical skills. The study procedures and protocol were approved by the VCU’s Institutional Review Board.

Sample and Setting

Participants were recruited from CrossOver Healthcare Ministry, a free health clinic that services residents in the greater metropolitan Richmond, Virginia, area. Over the past decade, the region has seen a 200% growth in the Hispanic/Latino population, which now represents 6% of its population.³⁹ CrossOver is the primary source of health care for this population, and approximately 50% of the clinic’s clients are Hispanic/Latino. The lead author (J.B.C.) recruited eligible clinic clients as they waited for their scheduled clinic

appointments. The study participants were recruited per the following inclusion criteria: adults 30 years, Hispanic/Latino origin, and a diagnosis of type 2 diabetes mellitus. Participants also responded to recruitment flyers posted at both clinic sites. A total of 13 Hispanics/Latinos with diabetes participated in the study, and written informed consent was obtained from each participant.

The study was conducted at 2 of the CrossOver Healthcare Ministry clinics. The clinic collaborates with VCU's Department of Pharmacotherapy and Outcome Science in leading the Diabetes Intensive Care Program to better service the needs of its culturally and linguistically diverse indigent clients. The program provides enhanced diabetes team-based care with a holistic approach to patient care. Pharmacists, interpreters, and the diabetes team work with patients to help them overcome barriers typically encountered in the free clinic setting, such as access, educational adherence, monitoring, and the attainment of treatment goals.

Quantitative and Qualitative Methods

Participants first completed a brief set of questions about sociodemographic characteristics, ethnic background, diabetes status, and causation beliefs. The surveys were provided in English and Spanish, based on participant preference, and the focus group facilitator and note taker assisted anyone who requested help in completing the survey (eg, unable to fill in responses due to vision loss or arthritic hands). Participants' diabetes causation beliefs were assessed via the Illness Perception Questionnaire–Revised (IPQ-R), which includes a list of 20 diabetes causal items.⁴⁰ The IPQ-R items include an equal distribution of various diabetes causes—including

- behavioral causes (eg, smoking, alcohol, behavior, diet/eating habits),
- socioenvironmental causes (eg, environmental pollution, germs/viruses, poor medical care in past, overwork),
- fatalistic causes (eg, chance or bad luck, God's will, punishment from God),
- psychological causes (eg, stress/worry, emotional state, family problems/worries), and
- biological causes (eg, aging, altered immunity, heredity).

Participants were asked to endorse the diabetes causes via a Likert scale (strongly agree, agree, disagree, or strongly disagree), and the responses were then recoded into a dichotomous variables (strongly agree/agree and disagree/strongly disagree). SPSS 21 statistical software was used for the quantitative analysis. The data collected from the IPQ-R were analyzed after both focus groups convened and were not used to inform the focus group discussions.

Focus Group Methodology

Upon completion of the surveys, the facilitator proceeded with the focus group discussion. A semistructured interview guide was developed with key concepts of Leventhal's illness representation model (ie, illness identity, timeline, consequences, causes, and controllability)

and was used to facilitate the discussion.⁴¹ The focus group procedures, questions, and probes are presented in Table 2. Focus group methodology is a valuable approach because it is structured to obtain insight of a wide range of views and experiences (ie, from >1 person's perspective). It is also a flexible approach that allows for inquiry of new or divergent knowledge about a topic. The group discussion approach provides the opportunity for individuals to contrast their experiences and opinions with others in similar circumstances (ie, diabetes).³⁸

The focus groups were offered on weekday evenings and convened in each clinic conference room. The duration of each focus group was approximately 2 hours, and each was audio recorded. The audio was professionally transcribed within the week after the focus groups had taken place. The first focus group conducted included the 11 expected participants (7 women, 4 men). The second was attended only by 2 of the expected 7 participants (both men). Both groups were similar in age, language preference, and foreign-born status. Each focus group was facilitated in Spanish by the lead author (J.B.C.), a bilingual Latina researcher, and note taking was conducted by a bilingual coauthor (D.A.). Except for the recruitment phase of the study, the facilitator had no prior relationship with the participants. Given her previous research and knowledge of cultural variations across Latin American nationalities, the facilitator was sensitive to the national diversity of the study sample. In one instance, she respected participants' autonomy by pausing the audio recording when asked by a participant that a certain cultural topic not be recorded. Participants were offered a light meal, debriefed at the end of the discussion, and each given \$20 compensation for their time.

Analysis

The percentile rank of the IPQ-R items was based on number of scores in the distribution of each item. Data for the IPQ-R were missing for 1 participant. For the focus group data, the first author (J.B.C.) and a certified interpreter (B.C. [a research assistant]) translated the transcriptions from Spanish to English. Inductive grounded theory analysis was used to analyze themes, and J.B.C., the third author (D.A.), and B.C. independently coded the Spanish transcripts. During the first analytic meeting, J.B.C., D.A., and B.C. compared, discussed, and agreed on common focus group discussion themes. J.B.C. defined and organized codes and reconvened the coders for a final analysis of overarching themes and codes. Last, specific quotes were identified to represent the qualitative themes. The rankings of the IPQ-R items were used to corroborate themes that emerged in the qualitative focus group analysis.

Results

Among the 13 participants, the average length of diabetes diagnosis was 10 years. Among those who provided an A1C value, the average value was 8.3% (67.2 mmol/mol), and 56% of participant values were >7% (53 mmol/mol). The majority of participants were foreign born and of Latin American descent, reported <12 years of education, and were not employed during the time of the focus group (Table 3). The top-ranked IPQ-R diabetes causation items were *stress or worry*, *my own behaviors*, *hereditary—it runs in my family*, and *diet or eating habits*.

Focus Group Themes

The themes resulting from the qualitative analysis are organized and presented in order of the interview guide questions—namely, diabetes causation beliefs, *susto*/culture-centered diabetes causation beliefs, inquiry of diabetes causation beliefs, inquiry of emotional status, and strategies for helping Hispanic/Latinos manage diabetes. Participant quotes are presented to exemplify major themes and subthemes.

Theme 1: Diabetes Causation Beliefs—The results reveal that participants perceived diabetes causes to be diverse and not exclusive to one cause. For example, participants discussed a variety of causes relating to genetics, behavior, and emotions. Stress was a recurring theme throughout the discussion, and when asked to elaborate, participants identified work-stress and a “fast-paced way of life” as major contributors to diabetes.

Theme 1a: Work stress:

Male participant 10: For me I think it was hereditary, well, because my whole family, my maternal grandparents were not diabetic, but my paternal grandparents, yes. My parents were also diabetic. I think that maybe it came from heredity or because of the food and the stress within ourselves. The stress, maybe because of the stress. The pressure from work or having to work every-day to survive and all that, and that work, the work and all of that. The way of life I lead, it's more [busy].

Subthemes regarding the US food environment and culture emerged during the work-stress discussion. Participants indicated that work was time-consuming and caused them to skip meals or eat fast-food, in turn causing diabetes. In addition, a cultural comparison emerged describing that poor people's food in the Latin American country of origin is healthier than food in the United States.

Theme 1b: US food environment/culture:

Male participant 7: I get home and I say, especially with my work at times it starts at 4 in the morning and at 12 midnight I'm still out and about. And to find a meal, there isn't. We always stop ... and I eat at McDonald's or at Burger King. And then I am restricted with time. ... But at work, there is no balance at work. Like I said, I would drink a cup of coffee in [major city] when I worked there, one cup of coffee and a donut or a butter roll and until 4 in the afternoon I would not eat. If I ate something it was because I saw a Burger King or something like that. But the food and work that is ... I say the biggest cause of diabetes.

Male participant 11: I have another experience with my son. He was deported to [country of origin]. And, when he was deported, the diabetes went away. Why? Because when he was here in the United States he used to eat a lot. Since we worked in painting and everything, we would eat wherever we were, wherever we ended up ... the food: hamburgers, Chinese food, everything, right? In other words, he used to eat too much. But now that he has been deported over there, to [country of origin], there he— since there, people are poorer, food is poorer, well, apparently, the food there is poorer, but it's healthier.

Theme 2: *Susto*—Culture-Centered Diabetes Causation Beliefs—The facilitator used the prior discussion about stress as a segue to ask the group about *susto*. The majority of participants were aware of *susto*; however, most referred to it as *coraje* (anger). The concept of *susto* was perceived by one participant as having a sense of powerlessness or a poor sense of self. Participants agreed that this belief is in the mind-set of many Hispanics/Latinos, and they provided examples.

It is important to note that there was no mention of the term *susto* during the group's prior discussion about stress and diabetes. After the moderator introduced *susto*, the tone of the discussion quickly changed, as if the group was given permission to openly discuss its cultural beliefs with ease and without judgment. This shift was noted by the facilitator and the note taker.

Male participant 10: Yes, it's part of our mentality, among us Hispanics.

Female participant 12: It's what I was going to say ...

Female participant 5: *Susto* or a fit of anger [*coraje*].

Female participant 2: Yes I think that it's 100 percent because of *susto*, because of one's powerlessness.

Female participant 5: In my family we knew a young guy that always lived with my brothers and me, since we were young. My mother always would take care of him because his mother was working and all that. Well, he became part of our family. One time he was, my mother was in the house cooking like always and real quietly he came into the house through the basement that we had and then he robbed us. He stole tires, and things for the car that were my brothers, that they had saved because they went to the Navy. Well my mother heard footsteps, she heard noises, something like that. She went out, turned on the light, and she had something in her hand. Then she saw who it was. Then for her, she was very angry. That is what she told us what happened and how it happened and all of that. Then from there, she started to notice, and she then went to the doctor and that's when the diabetes came. Well, it did happen because of a very large anger [*coraje*] that she experienced.

Male participant 10: We lived in a farm, I am from the country. Me and my uncle, we had some properties. So some people came to invade our properties and, um, my uncle wanted to remove them, we went to remove them. And one of those people shot at him, but the bullet didn't hit him, right? It hit the horse and at that moment the [horse] fell over dead. My uncle from that fright [*susto*], that impression from—in other words the fright [*susto*] he was left in coma ... shock. So when they took him to the hospital they cured the shock and everything. Fifteen days later he was diagnosed with sugar, as a consequence of the fright [*susto*].

Theme 3: Inquiry of Patients' Diabetes Causation Beliefs—There was consensus among participants that medical doctors and health professionals could benefit from asking patients about diabetes causation beliefs. Inquiring about beliefs, whether cultural or not,

was thought to help the doctor understand the patient and prioritize approaches for treating the patient.

Male participant 4: I think it helps the doctor to better understand the person he's dealing with and be easier for him to diagnose it, easier for him to treat it. That's the key to a little bit of understanding between the doctor and the patient. He'll know how—he'll know better how to treat it, you know?

Female participant 8: I think that if the patient does answer it was the stress or it was my diet, I think that, you know, those—[in] that case, yeah, they could be helped. It could help with the stress. They could be helped with the diet, you know? Now, that they inherited it, they can't do anything about that. But, yeah, they can help you to control whatever it is you think caused it, you know?

Theme 4: Inquiry of Patients' Emotional Status—Participants also agreed that medical doctors and health professionals should ask about the emotional status of patients with diabetes, and they provided examples of how this can benefit a patient with diabetes. A subtheme about the value of doctors also emerged during this discussion. The majority of patients believed that the role of doctors was an important one and the encouragement that they give to patients is valued, from both a treatment perspective and a spiritual perspective.

Male participant 13: Yes it's important because they can plan or maybe because all of the sudden a patient who is depressed arrives and has depression and they don't ask how are they going to know. ... So that affects some too. Then they should ask.

Theme 4a: Spiritual value of a medical doctor:

Male patient 10: Yes, I believe that the doctors they can encourage one with the diabetes and they give you a lot of attention. I am very grateful to God before anything that till today I have my sugar controlled. I am a diabetic, but controlled. And Dr [name omitted], he's a blessing, he is a blessing from God. He knows my body like my mother, who had me, right? Because with whatever little thing, he attends to me, he gives me a lot of encouragement with my emotional problems. He sent me to a counselor, I have a specialist for my problem with my urinary tracts. I have attention, I have all the attention from that doctor. Yes, he is aware of my health.

Female patient 5: Well yes because that way they can tell how you really feel. And you can express yourself. Then they can balance and know how to treat you. Or maybe give some medications, or they can move toward that The encouragement from the doctor to someone who is diabetic, or another illness, it does not matter which one ... stimulates one's spirit and one's being and everything that comes from you. Because yes it motivates you and you take it with you.

Theme 5: Collective Family Diabetes Management—Other Strategies for Helping Hispanics/Latinos Manage Diabetes—Family was viewed as an important component for helping Hispanics/Latinos manage their diabetes. Preparing family members for how to live with a person who has diabetes was the primary theme that emerged when

participants were asked about other helpful strategies for managing diabetes. In addition to suggestions such as providing information and group sessions about how to manage diabetes, the majority of patients felt that some type of family orientation or preparation was necessary for helping Hispanic/Latino patients manage diabetes.

Male participant 13: I think that it would be good to have a group meeting with more people so that they can understand what it's like to have the disease. ... My father was diabetic and I put myself in his path. I never informed myself, it was not very important for me. But it is very important, also to have a group meeting like this to get [more information] about things.

Male participant 11: It is very important for the people who are living with that person ... if the family has a little class on how to deal with it, that is very important. Because I know that my parents have diabetes but I don't know how to handle it.

Male participant 10: The family is very important ... because the family needs to prepare itself. ... So to have an orientation for the family also.

Conclusions

The main findings of this study reveal that the Hispanic/Latino study participants perceive stress to be an important contributing factor for the development of type 2 diabetes mellitus. Although the findings also reveal that heredity and an unhealthy diet were perceived to cause diabetes, the concept of stress or negative emotions emerged as a significant direct and indirect link to the onset of diabetes. The data from the IPQ-R confirm the prominent themes that emerged from the focus group discussions. Second, results from this research reveal that inquiring about patients' diabetes causation beliefs and emotional status are perceived by Hispanic/Latino study participants to be strategies that improve the patient-provider relationship and assist health professionals with establishing diabetes self-management goals for Hispanic/Latino patients. Last, the study findings highlight the importance of preparing and educating family members of Hispanics/Latinos with type 2 diabetes mellitus, because they are viewed as a collective and integral part of the management process.

The findings of this study support the extensive research regarding stress, or *susto*, as a common diabetes causation belief among Hispanics/Latinos.^{31–34} Our study also provides a unique patient perspective on how the inquiry of diabetes causation beliefs and patients' emotional status can be used as a strategy for enhancing health professionals' cultural competence by improving (1) their knowledge of cultural beliefs and (2) their skill in facilitating collaborative patient-provider communication. These skills align with the AAMC cultural-competence assessment domains.^{10,17–20} Given that the American Diabetes Association suggests that a patient-centered communication style is an important strategy for improving patient care, inquiring about diabetes causation beliefs or emotional status can be a critical first step for engaging Hispanics/Latinos with type 2 diabetes in collaborative goal-setting discussions as related to self-management.⁵ Likewise, inquiring about Hispanics/Latinos' diabetes causation beliefs and emotional status can be a communication entry point for identifying "patient preferences" or sociocultural barriers to care.⁵

The qualitative results of this study also illustrate how the inquiry of patients' diabetes causes can uncover social environments that act as barriers for self-management. For example, one participant's ability to eat healthy was impeded by his inability to have a regular eating schedule or access to healthy food options. Health professionals can also gain insight into a patient's social environment when asking about cultural beliefs, such as *susto*. For example, the stories about *susto* causing diabetes shed light on emotionally distressing circumstances that can cause patients to disengage or that can become barriers for diabetes self-care activities.

The purpose of this study is not to discount the efforts of those health professionals who do their best to offer quality care within the constraints of systemic health care challenges (ie, limited time and resources for indigent ethnic minority groups) but rather to highlight the value that Hispanic/Latino patients entrust in their health care professionals and to identify culturally centered strategies that can assist health professionals in identifying patient barriers and motivators for self-management engagement. Limitations of this study include a purposive convenience sampling strategy, a small sample size, the potential of researcher bias, and the lack of generalizability of the findings. In addition, the embedded IPQ-R about diabetes causation beliefs may have influenced participants' perspectives and the focus group discussion. As is the nature with qualitative studies, strengths of this study include capturing the rich personal perspectives of Hispanic/Latinos with type 2 diabetes mellitus.

In conclusion, inquiring about Hispanics/Latinos' diabetes causation beliefs or emotional status is one strategy that can bridge the gap in both cultural competence and health communications research. There is an urgent need to address disparities in type 2 diabetes mellitus clinical outcomes for the growing Hispanic/Latino population. The qualitative results presented in this article describe the benefits of asking about diabetes causation beliefs and the potential implications of this knowledge on improving a health professional's understanding of the patient and his or her needs. Clinics with a long history of serving Hispanic/Latino populations are an important resource for understanding how the relationship between a health professional and Hispanic/Latino patients can be improved. In this case, CrossOver Healthcare Ministry's collaborations and diabetes care team approach, which focuses on holistic care, helps to generate innovative ways to enhance services and culturally tailored care. By asking Hispanic/Latino patients with type 2 diabetes mellitus about their cultural diabetes causation beliefs and emotional status, health providers can be better equipped to respond to patients' cultural beliefs and preferences and tailor diabetes care in a culturally competent manner. Safety net clinics that care for a high percentage of Hispanic/Latino patients can also benefit in improving patient engagement and outcomes by implementing inquiry of diabetes causes and emotional status in routine patient health assessments.

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Table 1

Domains for Assessing Cultural Competence Training in Medical Education as Defined by the Association of American Medical Colleges

I.	Rationale, context, and definition
A.	Definition of cultural competence
B.	Definitions of race, ethnicity, and culture
C.	Clinicians' self-assessment and reflection
II.	Key aspects of cultural competence
A.	Epidemiology of population health
B.	Patients' healing traditions and systems
C.	Institutional cultural issues
D.	History of the patient
III.	Understanding the impact of stereotyping on medical decision making
A.	History of stereotyping
B.	Bias, discrimination, and racism
C.	Effects of stereotyping
IV.	Health disparities and factors influencing health
A.	History of health care discrimination
B.	Epidemiology of health care disparities
C.	Demographic patterns of disparities
D.	Collaborating with communities
V.	Cross-cultural clinical skills
A.	Differing values, cultures, and beliefs
B.	Dealing with hostility/discomfort
C.	Eliciting a social and medical history
D.	Communication skills
E.	Working with interpreters
F.	Negotiating and problem-solving skills
G.	Diagnosis and patient-adherence skills

Table 2**Focus Group Procedures and Questions for Discussion**

<p>Introductions</p> <p>Purpose of the study and methods (ie, audio recorded for transcription and analysis)</p> <p>Confidentiality and ensuring anonymity</p> <p>Rights as a participant</p> <p>Ground rules for the group discussion</p> <p>General questions:</p> <ol style="list-style-type: none"> 1 How did you learn you have diabetes, and how long have you had it? 2 What do you think causes diabetes, and what do you think caused your diabetes? 3 Within Latino culture, there is a health belief that negative emotions or <i>susto</i> causes diabetes; what do you think about this belief? <i>Probes:</i> What does this look like, or can someone give me an example of this? How long does <i>susto</i> generally last? What are the long-term effects? How long after the episode of <i>susto</i> does diabetes generally develop? How can negative emotions or <i>susto</i> affect the way people manage their diabetes? 4 Do you think it is important for medical doctors or health professionals to ask patients about their diabetes causation beliefs? <i>Probes:</i> How is it important? Why is it important? 5 Do you think asking patients with diabetes about their emotional status is important for helping them manage their diabetes? <i>Probes:</i> How is it important? Why is it important? 6 What do you believe are other important factors for helping Latinos manage their diabetes? <p>Conclude discussion, debrief about study, and thank participants</p> <p>Open for questions</p> <p>Remind participants of confidentiality</p> <p>Facilitator debriefs with note taker</p>

Table 3

Participant Sociodemographic Characteristics, Ethnic Identity, Diabetes Status, and Causation Beliefs (N = 13)^a

Age, y, mean $\pm$ SD ^b	54.15 $\pm$ 6.97
Women ^b	7 (54)
Education, y	
<8	5 (42)
8–12	4 (33)
>12	3 (25)
Unemployed	8 (62)
Foreign born	12 (92)
<20 y in US	7 (58)
Ethnic background	
Central American	3 (27)
Mexican	5 (46)
Puerto Rican	3 (27)
Diabetes status	
A1C, ^c mean $\pm$ SD (n = 9)	8.3% $\pm$ 2.11%
Years with diabetes, mean $\pm$ SD	10.4 $\pm$ 9.84
Top IPQ-R diabetes causation beliefs (n = 12), rank (percentile)	
Stress or worry	1 (75th)
My own behavior	2 (67th)
Hereditary—it runs in my family	3 (50th)
Diet or eating habits	3 (50th)

Abbreviation: IPQ-R, Illness Perception Questionnaire–Revised.

^aValues presented as No. (%) unless noted otherwise.

^bNo missing data.

^c67.2 mmol/mol.