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A Systematic Review of Research on Culturally Relevant Issues for Hispanics With Diabetes

Arlene Caban, PhD

Elizabeth A. Walker, DNSc, RN, CDE

From the Albert Einstein College of Medicine, the Bronx, New York.

Correspondence to Arlene Caban, PhD, Albert Einstein College of Medicine, Department of Medicine/Endocrinology, 1300 Morris Park Avenue, Mazer Room 208, Bronx, NY 10461 (caban@aecom.yu.edu).

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Purpose

The purpose of this review is to provide a description of current research on culturally relevant issues among Hispanics subgroups with diabetes throughout the United States.

Methods

A search of 2655 abstracts was conducted using Medline, PubMed, and Psychlit. Sixty articles were identified, and 33 were reviewed.

Results

Most studies focused on Mexican Americans, and little is known about the unique and shared health beliefs of different Hispanics subgroups within the United States. Personal models of illness varied across groups and were influenced by levels of acculturation. Definitions and treatments for *susto* varied considerably: Puerto Ricans did not identify it as a cause of diabetes. Patients' thoughts about God and diabetes differed, and little is known about how these thoughts affect diabetes self-management. There is also limited research on Hispanics' use of *curanderos* (folk healers) for diabetes-related care, and only some participants reported using alternative treatments in conjunction with standard medical care. There is limited evidence that fatalistic thinking is unique to Hispanic culture, and its relationship to diabetes self-management remains unclear.

Conclusions

More research is needed to determine how cultural factors influence Hispanics' approaches to diabetes self-management. Clinicians and educators would benefit from exploring cultural belief systems with patients, as they may enhance the patient-provider relationship and serve as tools in identifying appropriate treatment strategies.

A recent report by the Centers for Disease Control and Prevention (CDC) report the prevalence rates of diabetes among Hispanic groups residing in California, Florida, Illinois, Texas, and the New York/New Jersey area. Using data from the Behavior Risk Factor Surveillance System, the CDC found that age-adjusted prevalence rates for diabetes were double among Hispanics compared to non-Hispanic whites, and these differences varied by region.¹ Rates of diabetes among Hispanics were lowest in Florida (7.2%) and greatest in California (10.9%) and Puerto Rico (10%). The authors attributed these regional disparities to genetic, social, and cultural factors, as well as lack of access to good medical care.¹

Much of the psychosocial and cultural literature has limited or inconsistent information about Hispanics with diabetes. A dearth of research is available, although many researchers have identified cultural factors as important to consider when designing culturally appropriate clinical and behavioral interventions.²⁻⁵ Because much of the research in this area has targeted Mexican American populations in the western and southern central United States, more information is needed to determine whether these cultural issues are unique or shared across different Hispanic subgroups. Greater awareness of the diversity within the Hispanic community will help researchers and clinicians better tailor their interventions for their patient populations. It will also reduce the likelihood that information available on Mexican American groups will be generalized to other Hispanics who may have different cultural perspectives about living with diabetes.

Therefore, the purpose of this review is to provide a more comprehensive description of current research in this area and to evaluate existing information on culturally relevant issues among Hispanic subgroups with diabetes throughout the United States. Studies conducted in the western, central, south central, and eastern United

States are compared and are focused on the following themes: patient's understanding of diabetes, *susto* (a scare or fright) as a perceived cause of diabetes, perspectives about God and living with diabetes, the use of folk healers, the use of alternative treatments, and fatalism.

Methods

A search was conducted of 2650 abstracts in Medline (n = 1061), PubMed (n = 1502), and Psychlit (n = 87), reviewing the earliest abstracts on record to those available until June 2005 using the following search terms: *Hispanic and diabetes*, *Hispanics and religion and diabetes*, *alternative treatments and diabetes*, *God and diabetes*, *spiritual beliefs and diabetes*, *prayer and diabetes*, *fatalism and diabetes*, *curanderos and diabetes*, and *susto and diabetes*. For the purposes of this review, only published research studies were reviewed if they were conducted in the United States, were available in English, focused primarily on Hispanics with diabetes, and enrolled individuals older than 18 years. Review articles and epidemiological studies were largely excluded, unless they were directly relevant to the themes that were part of this review. Reference lists were perused, and 5 additional studies were identified and reviewed.

Of the 2655 citations, 60 articles were identified that met the search criteria. Of these 60, 33 were included in this review and 26 of the 33 were thoroughly evaluated. Twenty-seven were excluded for the following reasons: they were not conducted with Hispanics in the United States, the study focused only on providers' perceptions, and/or the study focused on women at risk for gestational diabetes. Table 1 provides an overview of the studies chosen for this review and includes information about their sample size and study design.

Results

The following topics were evaluated: understanding the experience of diabetes, *susto* (scare or fright) as a perceived cause of diabetes, perspectives about God and living with diabetes, use of folk healers in diabetes care, the use of alternative treatments, and fatalism.

Understanding the experience of diabetes. Researchers have used semistructured individual interviews and surveys to learn more about the ways Hispanics understand their experience with diabetes.⁶⁻⁹ Chesla and colleagues⁷

(text continues on p. 589)

Table 1

Summary of Research Studies by Region

Reference	Sample Size/Ethnicity	Language	Study Design	Location
Western United States				
Chesla et al (2000) ⁷	Convenience sample (N = 192) 116 European Americans, 76 Central and Mexican Americans	Spanish/English*	Interviewer-administered semistructured interview with open-ended and fixed-choice questions	San Francisco, California
Najm et al (2003) ²⁴	Convenience sample (N = 525) 176 non-Hispanic whites, 167 Hispanics [†] , 182 Asians	Spanish/English/ Vietnamese*	Cross-sectional, interviewer-administered survey	Orange County, California
Carranza and LeBaron (2004) ²¹	Convenience sample (N = 76) 76 Mexican Americans	100% Spanish	Cross-sectional, interviewer-administered survey	Northern California
Coronado et al (2004) ¹¹	Convenience sample (N = 42) 42 Mexican Americans	100% Spanish	6 focus groups with open-ended questions	Yakima Valley and Skagit Valley, Washington
Central United States				
Anderson et al (1998) ³²	Convenience sample (N = 42) 42 Hispanics [†] (most of Mexican Heritage)	Primarily Spanish (some focus group members bilingual and made comments in English)	4 focus groups with structured, open-ended questions	Detroit, Michigan
Zeilmann et al (2003) ²⁶	Convenience sample (N = 186) 102 non-Hispanic whites, 84 Hispanics [†]	Primarily English (indicated that interpreter available if needed)	Cross-sectional, interviewer-administered survey developed by the researchers	Albuquerque, New Mexico
Giachello et al (2003) ³¹	Community sample (N = 522) 128 focus group participants (with providers and residents), 394 survey respondents, 273 non-Hispanic blacks, 52 non-Hispanic whites, 69 Hispanics [†]	1 Spanish-language focus group No information on language of survey provided	14 focus groups and a telephone survey	Southeast Chicago, Illinois

(continued)

Table 1 (continued)

Reference	Sample Size/Ethnicity	Language	Study Design	Location
Schoenberg et al (2004) ³⁰	Convenience sample (N = 80) 20 African Americans, 20 Hispanics (Mexican descent), 20 Native Americans, 20 rural whites	No information on language of interview provided	Individual interviews with semistructured questions and primary standardized questionnaire	Ohio (referenced in results but location of enrollment unclear)
South central United States				
Schwab et al (1994) ³³	Convenience sample (N = 199) 199 Mexican Americans	27% Spanish 55% English 18% both	Cross-sectional, interviewer-administered survey	Southern Texas
Brown et al (1998) ²⁸	Random recruitment from database (N = 63) 63 Mexican Americans	100% Spanish	Cross-sectional, physiological measures and culturally tailored survey	Starr County, Texas
Hunt et al (1998) ⁸	Convenience sample (N = 49) 49 Mexican Americans	Spanish/English*	Cross-sectional, open-ended individual interviews	San Antonio and Laredo, Texas
Brown et al (1999) ¹³	Community sample (N = 247) 247 Mexican Americans	100% Spanish	Focus groups, pilot study, and randomized clinical investigation	Starr County, Texas
Hunt et al (2000) ⁹	Convenience sample (N = 43) 43 Mexican Americans	53% Spanish 46% English	Cross-sectional, open-ended individual interviews	San Antonio and Laredo, Texas
Alcozer (2000) ¹⁰	Community sample (N = 20) 20 Mexican Americans	No information on language of interview provided	Secondary analysis of 2-3 open-ended individual interviews	Texas
Jezewski and Poss (2002) ¹²	Convenience sample (N = 25) 25 Mexican Americans	100% Spanish	Open-ended individual interviews and 3 focus groups	El Paso County, Texas
Poss and Jezewski (2002) ¹⁷	Convenience sample (N = 22) 22 Mexican Americans	100% Spanish	Open-ended individual interviews and 3 focus groups	El Paso County, Texas

(continued)

Table 1 (continued)

Reference	Sample Size/Ethnicity	Language	Study Design	Location
Rivera et al (2002) ²⁵	Convenience sample (N = 547) 70 non-Hispanic whites, 282 US-born Hispanics [†] , 153 non-US-born Hispanics [†] , 18 other, 24 not identified	Spanish/English*	Prospective observational study, interviewer- administered surveys developed by the researchers	El Paso County, Texas
Poss et al (2003) ²⁹	Convenience sample (N = 22) 22 Mexican Americans	100% Spanish	Open-ended individual interviews and 3 focus groups	El Paso County, Texas
Benavides-Vaello et al (2004) ²⁷	Convenience sample (N = 40) 40 Mexican Americans	100% Spanish	6 focus groups with structured, open-ended questions	Starr County and Hidalgo, Texas
Eastern United States				
Zaldivar and Smolowitz (1994) ¹⁴	Convenience sample (N = 104) 45 Dominicans, 37 Puerto Ricans, 8 Cubans, 8 Ecuadorians, 2 Hondurans, 4 Latinos born in New York	Spanish/English*	Cross-sectional, interviewer- administered survey based on a preexisting survey	New York, New York
Quatromoni et al (1994) ²²	Convenience sample (N = 34) 34 Caribbean Latinos (mostly Puerto Rican)	100% Spanish	4 focus groups with open-ended questions	Boston and Cambridge, Massachusetts
Adams (2003) ⁶	Convenience sample (N = 13) 9 Puerto Ricans, 2 Cubans, 1 Central American, 1 Mexican	100% Spanish	Individual interviews with 1 open-ended question	Southern New England, Connecticut
Multicenter studies				
Higginbotham et al (1990) ²³	National sample (N = 3623) 3623 Mexican Americans	61% English 39% Spanish	Cross-sectional survey from Hispanic Health and Nutrition Examination Survey study	Southern United States

(continued)

Table 1 (continued)

Reference	Sample Size/Ethnicity	Language	Study Design	Location
Weller et al (1999) ¹⁹	Convenience sample (N = 161) 40 Guatemalans, 40 Mexicans, 41 Mexican Americans (93% born and educated in United States), 40 Puerto Ricans (100% born in Puerto Rico)	75% Spanish 25% English	Cross-sectional, semistructured individual interviews with open-ended questions and symptom checklists	Esquintla, Guatemala; Guadalajara, Mexico; Edinburg, Texas; Hartford, Connecticut
Weller and Baer (2001) ¹⁸	Convenience sample (N = 161) 40 Guatemalans, 40 Mexicans, 41 Mexican Americans, 40 Puerto Ricans	Spanish/English*	Cross-sectional, semistructured individual interviews with open-ended questions and symptom checklists	Esquintla, Guatemala; Guadalajara, Mexico; Edinburg, Texas; Hartford, Connecticut
Weller et al (2002) ²⁰	Convenience sample (N = 119) 38 Guatemalans, 40 Mexicans, 41 Mexican Americans (90% born in United States)	66% Spanish 26% English 8% English and Spanish	Cross-sectional, semistructured individual interviews with open-ended questions and symptom checklists	Esquintla, Guatemala; Guadalajara, Mexico; Edinburg, Texas

*Did not provide the percentage of Spanish/English speakers.
†The ethnic composition of the Hispanic population was not clearly defined.

evaluated differences in patients' "personal models," or ways individuals understand their experience, by comparing European with Mexican and Central Americans residing in San Francisco, California. Disease models differed among these groups. Mexican and Central Americans placed greater emphasis on symptoms of diabetes (ie, fatigue) and less on biological characteristics of diabetes (ie, high blood glucose). In contrast, European Americans, especially women, offered more biopsychosocial explanations.⁷ The Mexican and Central Americans who provided biopsychosocial explanations tended to be more acculturated and had higher levels of education. European Americans focused largely on lifestyle changes, while Mexican and Central Americans placed greater emphasis on managing fatigue and mood symptoms.⁷

A qualitative study conducted by Hunt et al⁸ through clinics in San Antonio and Laredo, Texas, found that 93% of Mexican Americans attributed the cause of diabetes to genetics and/or poor diet. Within this group, approximately 70% incorporated personal narratives in their causal stories. They connected their development of diabetes to lifestyle factors, such substance use, alcohol consumption, smoking, and not getting enough rest. They also attributed causes of diabetes to the death of a family member, trauma to the body, or the direct effects of taking medication.⁸ Some participants perceived diabetes as a punishment or retribution for previous self-indulgence. Those who connected the onset of diabetes to personal behaviors tended to be more active in seeking treatment than those who attributed the onset of diabetes

to external factors.⁸ Level of glucose control appeared to have no relationship to patients' causal stories, and it did not influence whether patients actively sought treatment of diabetes.⁸ Similar studies conducted with Mexican American populations in Texas and Washington State showed that biological and lifestyle factors were also frequently identified as possible causes of diabetes.¹⁰⁻¹²

In a study conducted by Alcozer¹⁰ with Mexican American women, definitions of diabetes were based on patients' understanding of the illness and perceptions of its severity. Terms such as *borderline* or *glucose intolerance* were defined as having "sugar in one's urine," which was perceived as less severe than having diabetes. Having diabetes meant there was "sugar in the bloodstream." They also expected that their experiences with diabetes would resemble those of previous generations in their families who had encountered serious complications, shortened life span, and death.¹⁰ While they reported engaging in self-management behaviors, they did not readily identify ways of preventing or minimizing their risks of complications.^{9,10} Participants also believed that insulin caused diabetes complications. Similar findings were observed among Mexican American men and women residing in Starr County, Texas.¹³

The aforementioned studies evaluated Hispanic populations residing primarily in the western or south central United States. There is less information on Hispanics residing on the East Coast. Among these studies,^{6,14} similar themes emerged, although the sample sizes were too small to be conclusive. For example, a study by Adams⁶ on Hispanic women with type 2 diabetes in Connecticut found that women associated personal and stressful life events with their diagnosis of diabetes. Similar to Hunt et al's⁸ findings, Mexican Americans believed that a solitary stressful event, such as a car accident, could result in the development of diabetes.^{6,8} One finding that differed is that Hispanic women in the Connecticut sample also identified long-term stressors, such as providing years of caregiving to a sick or disabled family member, as a cause of diabetes.⁶ Emotional and lifestyle factors were also associated with the development of diabetes for Hispanics surveyed in New York City.¹⁴ More than half of the 104 survey respondents answered positively when asked if they believed they developed diabetes because they were nervous or ate too many sweets in childhood.¹⁴ No other qualitative or survey studies were found that evaluated the experiences of Hispanics with diabetes on the East Coast. Therefore, little is known about how groups on the East Coast compare to other Hispanic and/or non-Hispanic groups with diabetes in the United States.

Susto as a perceived cause of diabetes. The importance of evaluating cultural differences across Hispanic subgroups in the United States is evident in studies evaluating susto as a cause of diabetes. Susto, by its traditional definition, is a folk illness caused by a scare or emotionally traumatic event that results in "soul loss" and induces a state of anxiety, insomnia, appetite loss, and social withdrawal.^{15,16} A qualitative study conducted by Jezewski and Poss¹² in El Paso, Texas, assessed Mexican Americans' explanatory models for type 2 diabetes. Participants identified susto (scare or fright), unhealthy lifestyle, and heredity as primary causes of diabetes.¹² The Mexican Americans interviewed in El Paso did not view susto as an illness but as a condition that preceded the diagnosis. For these participants, a scare or strong emotion (happiness or anger) occurred prior to the diagnosis of diabetes. Their definition deviated from more traditional definitions of susto.¹² Some variability was also noted across these respondents regarding what constituted symptoms of susto.¹⁷ Treatments for susto included prayer and/or "sweeping" the body with herbs and other substances. The researchers attributed the differences in descriptions and treatments for susto to participants' integration of more biomedical models of disease as they gained greater exposure to Western systems of care and had less contact with their primary country of origin.¹⁷

Coronado et al's¹¹ qualitative study with Mexicans residing in Yakima County, Washington, found that participants also attributed susto to the development of diabetes, in addition to environmental and genetic factors. Susto (as fright) was not the only cause. Any extreme emotional state such as *coraje* (anger), *tristeza* (sadness), and *gusto* (joy) could contribute to the onset of diabetes. Participants in the focus groups also identified the following risk factors: consuming foods high in sugar and fat, weight gain, and sedentary lifestyle.¹¹ Many participants provided detailed accounts of traumatic life experiences that preceded their diagnosis. For many, the time frame between the event and the diagnosis was generally months apart.¹¹ Previous research evaluating Mexican Americans' ideas about susto as the cause of diabetes suggests that the time frame between the precipitating factor and diagnosis of diabetes is not fixed. The identified antecedent may occur several days or years before the time of diagnosis.¹⁷

Weller and Baer's¹⁸ study also measured beliefs about susto across different Hispanic populations: Puerto Ricans in Connecticut; Mexican Americans in south Texas; Mexicans in Guadalajara, Mexico; and Guatemalans in rural Guatemala. Many respondents endorsed causes of diabetes that were consistent with a biomedical model. In

contrast to the other groups, Spanish-speaking Puerto Ricans assessed in Connecticut were born and educated in Puerto Rico and had the greatest personal experience with diabetes by virtue of knowing someone with diabetes or having developed diabetes. Puerto Ricans in this study did not recognize *susto* as an illness or identify it as a cause of diabetes.¹⁹ Mexicans interviewed in Guadalajara were more likely to identify emotional causes for the development of diabetes compared to other groups, including Mexican Americans interviewed in Texas.^{18,19} For Hispanic groups in Mexico, Texas, and Guatemala, there was some agreement regarding causes and symptoms of *susto*, but not all participants in these groups described it as an illness, and there was some variability in explanations regarding its treatment.²⁰ This lack of consensus regarding symptoms and treatment of *susto* was also reported in Poss and Jezewski's¹⁷ study. In addition, current descriptions of *susto* appear to be inconsistent and differ from earlier definitions provided in the research literature.^{11,15-17,20} Belief in *susto* as a cause of diabetes may also not be related to patients' perceptions of adherence to specific diabetes self-management behaviors.²¹ Weller and Baer's¹⁸ study is the only study that evaluated *susto* as a perceived cause of diabetes among Hispanics who were not Mexican American.

Perspectives about God and living with diabetes. While it is commonly known that Hispanic culture places a strong emphasis on religious belief and spirituality, few studies have evaluated how a belief in God affects Hispanic patients' approaches to diabetes self-management. In the south central United States, qualitative studies conducted with Mexican Americans found that participants believed God and prayer played a role in diabetes self-management.^{9,13} In Hunt et al's⁹ study, most participants believed the role was indirect and enabled them to cope with their feelings about the disease. Others believed that God had a more profound role in their illness. Nevertheless, these beliefs did not interfere with their accessing needed medical care and treatment of diabetes.⁹

Similar themes were identified in studies with Hispanics in the eastern United States. These studies generally had small sample sizes, and data were collected primarily through the use of qualitative methods. Results from focus groups conducted with a largely Puerto Rican population in Boston showed that some participants viewed diabetes as caused and controlled by God, while others believed that God gave them the strength to cope with their illness.²² In a qualitative study⁶ conducted with Hispanic women in

Connecticut, God was viewed as an external source of support for diabetes. For Dominican and Puerto Rican populations with diabetes surveyed in New York City, 81% of respondents indicated that God controlled their diabetes, 55% indicated that priests were helpful in controlling diabetes, and 9% sought assistance from a spiritualist.¹⁴ Some participants reported that they turned to God first when managing problems related to diabetes, but these respondents tended to be older Hispanic women. Seventy-eight percent of participants believed that diabetes was part of God's will, and 28% perceived their diagnosis as a punishment from God.¹⁴ Believing that diabetes is part of God's will was a theme that also emerged in the Boston study,²² and perceiving diabetes as a punishment from God was a finding in the Connecticut study.⁶ It is unclear whether these perspectives are also shared by Mexican Americans in the south central United States or those residing on the West Coast, although results from a qualitative study in Texas by Brown and Hanis¹³ suggest that some Mexican Americans may also perceive diabetes as part of God's will.

Use of folk healers in diabetes care. Although it is believed that some Hispanics with diabetes integrate Western and alternative medical approaches, little research is available that evaluates the use of folk healers in diabetes care. Several studies assessed the use of *curanderos* (faith healers) in primarily Mexican American populations residing in the central, western, and south central United States.²³⁻²⁶ Unfortunately, not all of these studies provided detailed background information about the study participants' country of origin,²⁴ and only 2 studies refer to patients with diabetes.^{24,25} The rates of *curandero* use varied across these studies and ranged from 1% to 8%.²³⁻²⁵ In Higginbotham et al's²³ study, 4.2% of participants consulted not only *curanderos* but also other practitioners of folk medicine. The largest use of *curanderos* reported was 8%, and it was found in a study assessing ethnic elderly persons.²⁴ Despite this high rate, the researchers stated that home remedies were most frequently used as complementary treatment of diabetes and that *curanderos* were generally not consulted for diabetes-related care.²⁴

Qualitative interviews with Mexican Americans in San Antonio and Laredo, Texas, had similar findings.⁹ All participants had diabetes, and none had consulted *curanderos* for diabetes treatment, although a very small number had consulted *curanderos* for other medical problems. When asked, many participants communicated a preference for medical providers over *curanderos* and used standard

medical treatments with greater frequency than alternative approaches.⁹

The use of alternative treatments. The use of commercial and herbal products to treat a variety of medical and physical illnesses has gained greater popularity and visibility over the past 20 years. While it is known that many Hispanics use alternative treatments for a variety of different diseases, most studies evaluating the use of alternative treatments have small convenience samples, qualitative study designs, and some contradictory findings.

Among the studies conducted in the south central United States, Hunt and colleagues⁹ found that while 84% of Mexican Americans knew that some Hispanics used herbs to treat disease, more than one third did not provide names of specific herbs. Among those who did, nopal (prickly pear cactus), aloe vera, and nispero (loquat or Chinese plum) were referred to most frequently.⁹ Nopal and nispero are locally available in south Texas and used by some, with very limited frequency, to lower blood glucose levels. Approximately 9% of participants interviewed used herbs regularly, while greater numbers of participants expressed doubts about their efficacy and were concerned about their potential for side effects.⁹ Participants did not appear to substitute alternative treatments for their medical care. In fact, they observed that those who were less active in their medical treatment tended to have little interest in pursuing any type of treatment, while those who pursued alternative approaches tended to be more involved in treatment and were interested in exploring all available options.⁹ Similarly, a qualitative study with Mexican American women in Texas found that although they knew of alternative remedies used by previous generations to treat diabetes, they did not adopt these approaches despite believing they might be helpful.¹⁰

This contrasts findings from studies by Brown et al of Mexican Americans in Starr County, Texas, who integrated home remedies with their prescribed diabetes medications.^{13,27,28} In addition, individual interviews and focus groups conducted with Mexican Americans in El Paso, Texas, revealed that almost all participants integrated standard medical and alternative methods.^{17,29} Similar to the findings in San Antonio and Laredo, Texas, nopal was the herb most commonly used for alternative treatments.^{9,12} In addition, focus group participants stated that Mexican Americans who adopted more American cultural values were less likely to use home remedies than those who were more traditionally minded.¹⁷

Another study conducted in El Paso, Texas, referenced advertisements in a local Spanish-language newspaper promoting the use of urine as a method of vaccinating against the development of diabetes.²⁵ Two participants in the study had considered injecting their urine as a treatment of diabetes, and 2 participants had already been using urine treatment as a topical agent and intranasally for other problems.²⁵ In this study, participants with fewer than 6 years of education were less likely to use any complementary and alternative approaches (herbalists, massage therapists, and/or herbal remedies) compared to those with 17 or more years of education. Interestingly, use of herbal and home remedies alone were greatest among those with fewer than 11 years of education.²⁵ Of all herbal and home remedies reported, chamomile and aloe vera were used most frequently to treat different health problems.²⁵ Because of the lack of statistical power, meaningful comparisons could not be made between the Hispanics and non-Hispanic whites in this study.

Another study by Schoenberg et al³⁰ conducted in Ohio comparing the use of complementary and alternative treatments among Native Americans, Mexican Americans, African Americans, and non-Hispanic whites older than 50 years found that Mexican Americans had the highest percentage of use of alternative remedies compared to other groups. Alternative treatments used for diabetes included cat's claw (*uña de gato*), plant or corn silk, aloe vera, nopal, tea made from sheep stool, and olive oil mixed with a spoonful of the participant's urine.³⁰ Mexican Americans who did not use alternative treatments were unaware of places to purchase these products and questioned their efficacy.³⁰

On the West Coast, Mexican Americans interviewed in Yakima County, Washington, reported using some different remedies from those reported in studies with Mexican Americans from the south central United States. These remedies included *starbien* (a commercial beverage) and *espina de pochote* (silk cottonwood tree).¹¹

In Chicago, a community action coalition was formed to explore ways of preventing diabetes within the community.³¹ Among their findings, 14% of Hispanics with diabetes reported using home remedies to treat their illness.³¹ In addition, Hispanics of Mexican American heritage participating in focus groups in Michigan indicated that they used alternative treatments for diabetes, especially if they were recommended by people they trusted.³²

On the East Coast, Quatromoni et al's²² qualitative study conducted in Boston had similar findings, but some

of the alternative remedies reported to reduce blood sugar levels differed from those generally reported in studies with Mexican Americans. These remedies included bitter substances such as boiled eggplant, lemon mixed with olive oil, and grapefruit juice or skins.²² In contrast to findings from other studies, preference was given to alternative remedies over standard treatments. Puerto Ricans and Dominicans interviewed were receptive to receiving information about standard and alternative treatments. Health care providers who were fluent in Spanish were seen as more credible sources of information.²² In contrast, Puerto Ricans and Dominicans surveyed in New York City denied using herbs or other folk medicine interventions to care for their diabetes. When asked whom they consulted when having a problem with diabetes, most participants indicated the physician or nurse.¹⁴

Fatalism. Fatalism, or the perception that little can be done to prevent or change one's directed course in life, can serve as a barrier to effective diabetes self-management. While some would associate fatalistic thinking with Hispanic culture, only a small number of studies have evaluated fatalistic thinking among Hispanics with diabetes. Among studies conducted on the East Coast, focus groups with a largely Puerto Rican population in Boston showed that diabetes was perceived as a chronic illness that resulted in complications over time that could not be avoided.²² Hispanics surveyed in New York City provided similar responses.¹⁴ In both studies, fatalistic thoughts emerged in the context of spirituality or deep religious faith. Fatalism was characterized differently in focus groups conducted with Hispanics of Mexican heritage in Michigan.³² For this group, the researchers connected fatalism with denial about the diagnosis of diabetes. According to the researchers, this sentiment was best summarized by the statement that if death were inevitable, at least one would die feeling satiated or "full."³²

Surveys conducted in south Texas on Mexican Americans receiving care in urban and rural settings found that participants, in general, expressed feelings of hopelessness about having diabetes and perceived diabetes as outside of their control.³³ Participants residing in rural areas had more fatalistic ideas about diabetes than did those residing in urban areas. While further assessment is required, the researchers speculated that fatalistic ideas may have influenced rural participants' motivation to learn about their illness because they were less likely than those in urban areas to request information regarding diabetes.³³

A contrasting perspective was provided by researchers who conducted focus groups on Mexican Americans with diabetes in Texas.⁹ The researchers cautioned against interpreting and describing patients' religious faith and perspectives on the use of alternative treatments as fatalistic. Rather, they emphasized the importance of understanding the context of the patients' experience and how it affects their approach to diabetes self-management. In this study, participants' religious faith played a strong role in self-management but did not interfere with their following through on provider recommendations or accessing needed medical care.⁹

Conclusions

The Hispanic population within the United States is diverse, and better controlled studies are needed to evaluate complex psychosocial and cultural issues in diabetes self-management. This research has important clinical implications because it can affect the ways in which providers interpret patients' experiences with diabetes and influence the types of recommendations or interventions they propose. While differences in culture can explain some of the themes that emerged in these studies, regional differences, differences due to lack of access to medical care, and limitations in research study design may account for some of the variability in outcomes across these studies.

In this review, some similarities existed in patients' causal understandings and experiences with diabetes. Little is known about the unique and shared health beliefs of Hispanics in different parts of the United States, and less information is available about how these groups compare to non-Hispanics who share similar psychosocial and/or socioeconomic characteristics.

With regard to *susto* as a perceived cause of diabetes, results varied considerably. In contrast to earlier studies, many did not consider it as an illness, some Hispanics did not identify it as a cause of diabetes, and there was disagreement regarding its definition and treatment.

Research evaluating perspectives on God and diabetes showed that although many Hispanics identified God as a source of support for diabetes, there were differences in patients' perceptions. Some perceived God as a source of support, others perceived God as controlling their diabetes, and others perceived their diagnosis as a punishment from God. This may have significant implications on patients' approaches to diabetes self-management.

Studies on the use of folk healers or *curanderos* in diabetes is limited but indicates that while patients consult

curanderos for some health problems, they generally do not consult them for diabetes-related care. Still, more research is needed. Additional research is also needed to evaluate the use of alternative treatments in diabetes because they vary considerably across Hispanic groups and by location. Little is known about what experiences influence patients' decisions to seek alternative care.

While fatalism is anecdotally associated with Hispanic culture, it is unclear whether this construct is unique to Hispanics or whether any marginalized group managing a chronic illness with limited access to care and resources has similar thoughts about life and death. In the few studies evaluating this construct, fatalistic thoughts differed across Hispanic groups, and their effect on diabetes self-management remains unclear.

Most studies presented in this review used local, convenience samples and relied primarily on qualitative data collection methods (focus groups or open-ended/semistructured interviews) to assess their target populations. While this may be helpful as an initial assessment, there are few subsequent studies that examine these issues with larger, more representative samples and explore within-group differences or use a comparison group. This greatly limits generalizability. This is important to consider when statements are made regarding cultural beliefs and health practices among Hispanics with diabetes because such statements may not be applicable across all Hispanic subgroups.

As the Hispanic community continues to grow within the United States, clinicians and diabetes educators will face greater challenges in both identifying and effectively addressing the various treatment needs for this community. Greater efforts are needed to discuss culturally relevant issues with patients and to evaluate the degree to which they influence patients' approaches to diabetes self-management. For example, identifying patients' deeply rooted religious beliefs about their diabetes may help facilitate a more meaningful dialogue and enable providers and patients to work more collaboratively in identifying effective treatment strategies or begin to address issues that indirectly influence patients' motivation to follow through on provider recommendations.

To date, much of the research conducted at the national level focuses on Mexican Americans. While they represent a very diverse group in the United States, they also have very different within-group cultural and migration experiences than other Hispanic groups do. In addition, Hispanics residing in urban areas may have different levels of access and needs than those in closed, rural communities. While

clinicians and educators will benefit from understanding individual perspectives about diabetes, understanding these perspectives within a larger socio-environmental context is also important as these factors can alter and change patients' perspectives over time.

In this review, most of the studies enrolled women, and therefore less is known about the perceptions of diabetes among Hispanic men. In addition, many of the studies in this review did not clearly define their target population by country of origin, nor did they indicate the primary language of their patient population (Spanish/English). If it is hoped to address gaps in knowledge about diabetes self-management among Hispanics/Latinos in the United States and achieve greater cultural competence and cultural sensitivity in clinical and educational interventions, enhanced efforts are needed to test and evaluate cultural stereotypes. Greater understanding of the health issues most salient and relevant for diabetes self-management among Hispanics must be a goal.

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