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**Attitudes of Mexican American Women Regarding  
Type 2 Diabetes Mellitus and Its Management**

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**Abstract**

Latinos are twice as likely as the general population to have diabetes. Hispanic women with diabetes are medically underserved. The purpose of this study was to examine Mexican American women's attitudes about type 2 diabetes and its treatment. A convenience sample of 43 Mexican American women, > 18 years of age, and residing in Northern California participated in this descriptive/exploratory non-randomized survey conducted in February and March 2003. The Diabetes Attitude Scale was used to measure the attitudes of Mexican American women about type 2 diabetes and its treatment. Results supported the beliefs that health care professionals needed special training to care for clients with diabetes; that people with diabetes have a serious disease; and that controlling blood glucose levels reduces complications of diabetes.

## Introduction

Type 2 diabetes mellitus, also known as non-insulin dependent DM, is a devastating chronic disease that affects more than 14 million Americans (American Diabetes Association, 1998). Type 2 diabetes is ranked as the fourth leading cause of death by disease in the United States (American Diabetes Association, 2000). More than 70 % of people with type 2 diabetes die of macrovascular disease (myocardial infarction and stroke) related to uncontrolled hypertension and uncontrolled lipid disorders. Other macrovascular complications of type 2 diabetes include renal failure, blindness, and lower extremity amputations (O'Connor, Spann, & Woolf, 1998). No one knows the exact cause of type 2 diabetes. It is more likely to occur in those who are overweight, have high blood pressure, are over 40 years old, have a family history of diabetes, or are members of certain ethnic groups (O'Connor, 1998).

It is estimated that in the United States, type 2 diabetes can be present for as long as 9 to 12 years before initial clinical diagnosis (Harris, Eastman, & Lewis, 1999). Macrovascular disease quietly progresses during this time, causing 5-10 % of these clients to have proteinuria at the time of diagnosis (Burke et al., 1999). Clients with type 2 diabetes have high rates of hypertension, dislipidemia, and obesity. This is the major reason for their 2 to 4 fold higher rates of cardiovascular disease (Clark et al., 2000).

The health of minorities, i.e., infant mortality, life expectancy, and self-reported health status, is worse than that of the non-Hispanic, White population (Lee & Estes, 2001). Type 2 diabetes affects African Americans, Hispanics, and American Indians in disproportionate numbers relative to Whites. The prevalence of type 2 diabetes mellitus among Mexican Americans is 2 to 3 times higher than in the general population (Hunt, Pugh, & Valenzuela, 1998). It is estimated that 1.3 million Latino adults are affected (Lipton, Losey, Giachello, Mendez, & Girotti, 1998). Despite these alarming numbers, Hispanic people are not receiving successful treatment for the disease primarily because

of the lack of a culturally appropriate treatment model. Presently, the available models fail to recognize barriers such as language, economics, family values, and cultural beliefs (Oomen, Owen, & Suggs, 1999).

People diagnosed with type 2 diabetes encounter many challenges depending on their socioeconomic status (i.e., occupation, income, education, race, and ethnicity). Socioeconomic status, race, and ethnicity are thus considered to be the major personal, social, biological, and environmental determinants of health (Lee & Estes, 2001). According to Oomen et al. (1999), Hispanic women are among the most medically underserved population in the US. This group experiences higher rates of disease, receives less preventive care, and has less access to health education and healthcare services than non-Hispanic whites.

The purpose of this descriptive/exploratory non-randomized study was to examine attitudes of Mexican American women aged 18 years and older about type 2 diabetes and its management. Culturally specific information can assist in the assessment of programs and individual management plans for these women, thereby optimizing their health promotion.

### **Operational Definitions**

For the purpose of this study, the term Mexican American refers to those individuals who reside in the United States who trace their ancestry to Mexico. Mexican Americans are also commonly known as Hispanics, Latinos, Chicanos, Xicanos, Mexicanos, La Raza, and Mex-Americans (Encarta Encyclopedia, 1998).

### **Literature Review**

Cultural beliefs and traditions affect every aspect of life among Hispanics. Included is the perception of health and illness, disease management, treatment options, and relationships with health care providers (Fishman, Bobo, Kosob, & Womeodu, 1993). Shaman, spiritualists, and herbalists provide traditional and personalized services,

such as religious and native folk cures for a variety of traditional ailments (Spector, 2000). Alternative treatments using native herbs, aloe (savilas), cactus (nopalitas), or garlic are common in some Mexican communities. According to Quatromoni et al. (1994), the practice of using bitter substances such as grapefruit skins and lemon juice was thought to reduce blood glucose levels.

Language, religion, and economic factors also play a role in diabetes management (Hunt et al., 1998; Lipton et al., 1998; Oomen et al., 1999). Delay in seeking treatment can be the result of several factors: language barrier, the religious concept of fatalism, financial limitations, immigration status, and the absence of acute physical symptoms. For low social economic status diabetics, working and earning a living remains a higher priority than active disease management. A strong feeling of pride and self-reliance (dignidad) may also prevent families from accepting free medicine (Lipton et al., 1998).

Other cultural aspects affecting care include (a) excessive respect for medical personnel, particularly among first generation clients. This prevents clients from asking questions or clarifying medical instructions. According to Lipton et al. (1998), clients nod affirmatively out of politeness; (b) personalismo, a mutually trusting relationship between the provider and the client is a way of enhancing adherence to treatment when working with Latinos (Lipton et al., 1998); and (c) solidarity among family members, collectivism - sacrificing one's needs for the good of the group. The family can be a positive influence by encouraging health promotion efforts and providing emotional support and valuable insights into the client's self-care (Engel, Shamoan, Basch, Zonszein, & Wylie-Rossett, 1995). However, the family can also be seen as negative especially among women who are the traditional caregivers of the family, and whose health care attitude needs are secondary to the good of her family (Brown, Garcia, Kouzekanani, & Hanis 2002; Lipton, et al., 1998; Oomen et al., 1999).

Culturally appropriate lifestyle interventions for people affected by type 2 diabetes appear to be understudied in California. No research articles were found that examined culturally appropriate lifestyle interventions of self-care for clients with type 2 diabetes. The only available data were from a cross-sectional study (Karter, Ferrera, Darbinian, Ackerson, & Selby, 2000) that examined self-monitoring of blood glucose (SMBG) practice patterns and barriers. Over 44,000 adults with pharmacologically treated diabetic clients from the Kaiser Permanente Northern California Region responded to a health survey with an 83% response rate. This study concluded that considerable gaps persisted between actual and recommended SMBG practices among these clients from this large managed care organization. A somewhat reduced SMBG frequency in subjects with linguistic barriers, some ethnic minorities, and subjects with lower education levels suggest the potential need for targeted, culturally sensitive, multilingual health education. The somewhat lower frequency of SMBG among subjects paying higher out-of-pocket expenditures for strips suggests that removal of financial barriers by providing more comprehensive coverage for these costs may enhance adherence to recommendations for SMBG. The method or instrument used for this survey is unknown. It assesses self-monitoring of blood glucose and financial barriers to self-care practice, but does not assess behavioral factors affecting what clients with type 2 diabetes do for self-care and why they do it.

Womack (1993) studied 80 American Indians and Alaska Natives patients with diabetes. These participants believed in the health care team approach to care; that health care professionals needed special training; and controlling blood glucose levels would result in fewer complications. Hunt et al. (1998) concluded that as clients try to control their type 2 diabetes, they adapt self-care behaviors to the exigencies of their everyday life, even when they do not follow treatment recommendations. The context of clients' lives, including their economic, educational, and cultural circumstances, can determine

how the generalized principles of type 2 diabetes management are implemented. Samuel-Hodge et al. (2000) found that influences on diabetic self-management behaviors of African-American women can be best understood from a sociocultural and family context. Therefore, interventions to improve self-management of type 2 diabetes in this population needed to recognize the influences of spirituality, general life stress, multi-care-giving responsibilities, and the psychological impact of diabetes. Glasgow et al. (1997) revealed in their study that diabetic patients felt that type 2 diabetes was a serious disease and that their self-management activities would control their diabetes and reduce the likelihood of long-term complications. Anderson et al. (1995) indicated that patient empowerment is an effective approach to developing educational interventions for addressing the psychosocial aspects of living with diabetes. Furthermore, patient empowerment was conducive to improving blood glucose control.

Bernal et al. (2000) examined factors associated with increased diabetes self-efficacy among insulin-requiring Hispanic adults with type 2 diabetes mellitus. A cross-sectional survey design was used to obtain self-reported data on a nonrandom sample of 97 insulin-requiring Hispanic adults with type 2 diabetes. The Insulin Management Diabetes Self-Efficacy Scale (IMDSES) was translated into Spanish and administered with a demographic questionnaire by trained bilingual/bicultural interviewers in each respondent's own home. Factor analysis of the IMDSES revealed four subscales that corresponded with major diabetes self-care management behavior. Respondents gave low to average self-efficacy ratings on their ability to manage all aspects of their disease. Behavior that required problem solving in changing circumstances received the lowest scores. Attending diabetes classes and having home nursing visits were associated with and increased sense of self-efficacy, particularly as it related to diet and insulin. English-speaking ability was associated with general sense of self-efficacy in managing diabetes care. Therefore, the model tested was able to explain modest levels of self-efficacy,



especially in two of the most important diabetes management areas, insulin and diet management.

Ruggiero et al. (1997) explored several questions about diabetes self-management: a) What do individuals report being told to do? b) What are their self-reported levels and patterns of self-care? and c) Are there differences on self-reported self-management recommendations and levels across various subgroups? Mailed surveys were returned by 2,056 individuals (73.4% response rate). Of the total, 13.4% had IDDM, and the remainder had NIDDM with 65% of the NIDDM group using insulin. Findings revealed that there were significant differences on reported self-management recommendations across different subgroups. Comparisons on level of self-management across diabetes type revealed significant differences for diet and glucose testing. Differences were also found in self-management levels for a number of individual characteristics, including age, working status, and type of insurance, along with knowledge of diabetes self-management and complications trial findings. These findings provided important information on perceived self-management recommendations and the specific self-management levels and patterns in individuals with diabetes.

Brown (1999) reviewed the diabetes education literature that emerged over the previous 20 years and reported the continued effectiveness of diabetes education and behavioral interventions in improving psychosocial and health outcomes. Price's (1993) qualitative study reported a diabetes self-management model (DSMM) that affirmed the experience and effort of learning self-management and recognized the importance of individualized regimen developed from personal experiences and perceptions of what "works for me."

### **Theoretical Perspective**

Corbin and Strauss' (1991) trajectory framework for chronic illness management was chosen for this study. This model was developed to increase understanding of the

problems associated with chronic illness and its management. Diabetes management fits well when studied from the perspective of the trajectory framework.

For example, if a person has an accurate projection (including accurate and clear information on how to attain optimal blood glucose control and avoid long-term complications), the level of certainty would possibly influence a person to plan management behaviors according to that projection. On the other hand, if this person was uncertain about his/her ability to make effective day-to-day management decisions or was uncertain about his/her ability to shape the course and outcome of the illness, it is less likely that he/she would be able to develop and carry out an effective scheme. Uncertainty about the manageability of an illness or lack of guidance on how to manage the situation would make it difficult to make an accurate projection. Uncertainty may result in less optimal management strategies, poorer blood glucose control, and greater numbers of complications.

### **Methodology**

A descriptive/exploratory non-randomized design was used utilizing a survey questionnaire called: "The Third Version of the Diabetes Attitude Scale (DAS-3)". This tool was developed by Anderson et al. in 1998 and was designed to measure attitudes about diabetes. The DAS-3 consists of five subscales related to diabetes and the care of diabetes. The five DAS-3 subscales and the meaning of each, as interpreted by Anderson et al. (1998) are as follows. *Special Training* assessed the respondents' attitude about the need for health care professionals to have special training in teaching, counseling, and behavior change techniques to care for patients with diabetes; *Seriousness of Type 2 Diabetes* assessed the respondent's attitude about the seriousness of type 2 diabetes; *The Overall Value of Tight Glucose Control in Diabetes Care* assessed the respondent's attitude about whether the potential benefit of tight glucose control is justified in terms of the cost to the clients; *Psychosocial Impact of Diabetes on Clients* assessed the

respondent's attitude toward the psychosocial impact of diabetes on the lives of people with the disease; and *Attitude Toward Client Autonomy* assessed the respondent's attitude about whether clients should be the primary decision makers regarding the daily self-care of their diabetes.

A descriptive study involving a sample of 50 Mexican American women with diabetes was conducted using the DAS-3 instrument described above. Of the 50 clients asked to participate in the study, 43 (86 %) completed the questionnaire, and although participation was voluntary, respondents were provided a monetary incentive for completing the questionnaire.

Data were collected 2 days a week during February and March 2003 at a neighborhood health center in San Jose, California. Participants were required to be Mexican American women and at least 18 years or older.

The DAS-3 was administered. Each client had the questionnaire verbally explained to her by the researcher. Each subject was given a printed explanation of the study including its purpose, the type of information sought, how much time was required for participation, and the confidentiality of their responses.

### **Limitations of the Study**

The limitations of this study were the small sample size and the geography limited to Northern California. These attitudes may not be applicable to Mexican Americans living elsewhere. The study sample did not include male participants or participants who were not actively seeking care. In the future, it might be useful to study male clients only and clients who do not seek health care.

### **Results**

The demographic characteristics of the 43 female participants in the study are shown in Table 1 and Table 2. The mean age of participants was 56 years. Of the 43 women, 56% (n=24) did not graduate from high school, 21% (n=9) were high school

graduates, and 23% (n=10) attended some college or completed college degrees. Seventy-seven percent of the women were over 40 years of age when diabetes was diagnosed and 67 % reported having relatives with diabetes.

(TABLE ONE AND TWO)

Respondents were asked if they had experienced any of several common complications that occur frequently in clients with Diabetes. Responses are presented in Table 3.

(TABLE THREE)

Table 4 shows the number and percentage of participants who responded positively (“strongly agree” or agree) to the five DAS-3 subscales.

(TABLE FOUR)

Ninety-five percent of the study participants believed that health care professionals needed special training to care for patients with diabetes. Only 63% percent believed that people with diabetes have a serious disease, and remarkably, only 30% believed that controlling blood glucose levels significantly reduced complications of diabetes. Each subscale in the DAS-3 had several questions that reflected attitudes/beliefs about that subscale. These data were based on the persons for whom more than one-half of items in four out of the five subscales were positive. Of interest, 65% of women believed that diabetes had a negative impact upon their lives. In addition, 61% believed that clients should be the primary decision makers regarding the daily self-care of diabetes.

Pearson Product-Moment Correlations were used to establish the degree of association between the five subscales (Table 5). The correlations ranged from a high of 0.72 (special training and value of tight control) to a low of -0.15 (value of tight control and psychosocial impact of diabetes). The strongest positive correlation was found between subjects who believed that professionals who provide health care to people with

diabetes need special training ( $r=.72$ ,  $P<.01$ ) and subjects who believed that controlling blood glucose levels would result in fewer complications of diabetes. Most subscales (3 of 5) were moderately positively correlated between 0.40 and 0.70.

(TABLE FIVE)

**Summary**

The results of this study indicate that educational efforts aimed at management of diabetes are needed in this particular ethnic sample. Misconceptions about the seriousness of diabetes among Mexican American women persisted. Ninety-five per cent of women studied believed that health care professionals needed special training to care for clients with diabetes. Only 63 % of women studied believed that people with diabetes have a serious disease. Thirty percent believed that controlling blood glucose levels considerably reduces complications of diabetes.

Health care providers treating Mexican American women with type 2 diabetes need to be aware that cultural values may lead to differential care and treatment in order to provide a culturally competent approach. Of interest, results from this study showed similar findings to Womack, (1993). Results from both studies indicated special training was needed for health care providers. However, this study revealed slightly increased negative attitudes regarding seriousness of diabetes and patient autonomy.

Health care professionals require understanding of the cultural context in which clients conduct their self-management practices, and awareness that cultural values may lead to differential care and treatment. These values play a major role in health decisions regarding the care given to adult members of various ethnic subgroups. Client education and client self-care are essential to the prevention and delay of diabetes' serious and long term complications. Client's beliefs and attitudes about wellness, illness, and health care greatly influence how individuals will respond to health promotion information.

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Table 1.

**Demographic characteristics of the study sample, N=43.**

<b>Characteristics</b>	<b>Percent of sample</b>	<b>n</b>
<b>Sex:</b>		
Female	43.0	43
<b>Type of diabetes:</b>		
Type 1	4.7	2
Type 2 using insulin	18.6	8
Type 2 not using insulin	76.7	33
Had diabetes patient education	55.8	24
<b>Educational Level:</b>		
Some college or college degree	23.3	10
High school graduate	20.9	9
Less than high school	55.8	24
<b>Age of Onset of Diabetes:</b>		
Before or equal to age 40	23.3	10
After age 40	76.7	33
<b>Family History:</b>		
Relatives with diabetes	67.4	29
No relatives with diabetes	30.9	13

**Table 2.****Demographic characteristics of the study sample, N=43.**

<b>Characteristics</b>	<b>Mean</b>	<b>Range</b>
Age	56.3	30 - 82
Weight	120.6	119-255
Height in inches	50.6	41 - 68

**Table 3.****Complications of diabetes as related by study participants, N=43.**

<b>Characteristics</b>	<b>Percentage of Sample</b>	<b>n</b>
High blood pressure	62.8	27
Eye problems	46.5	20
History of heart disease	20.9	9
Foot problems	20.9	9
Kidney problems	11.6	5
History of stroke	4.7	2

**Table 4.**

**Number (%) of patients with a majority of positive responses (defined as “strongly agree” or agree”) on the items in each of the five subscales of the DAS-3, N=43.**

<b>Participants</b>	<b>Subscale</b>	<b>Number</b>	<b>(%)</b>
	Special training	41	95.0
	Seriousness of NIDDM	27	62.9
	Control/Complications	13	30.5
	Impact of diabetes	28	65.0
	Patient autonomy	26	60.5

**Table 5.****Pearson Product-Moment Correlation between DAS-3 subscales, N=43.**

<b>Subscales</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Special Training	---	---	---	---	---
2. Seriousness of NIDDM	.42	---	---	---	---
3. Control/Compliance	.72	.21	---	---	---
4. Impact of diabetes	.43	.22	-.05	---	---
5. Patient autonomy	.31	-.24	-.15	.29	---