PERCEIVED STRESS AND COPING IN MEXICAN-AMERICANS WITH TYPE 2 DIABETES

by

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A Thesis Submitted to the Faculty of the COLLEGE OF NURSING
In Partial Fulfillment of the Requirements For the Degree of MASTER OF SCIENCE In the Graduate College THE UNIVERSITY OF ARIZONA

2007
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ACKNOWLEDGMENTS

I would like to thank my thesis chair, Dr. Deborah Vincent, for her patience and support throughout this process. I would also like to thank the members of my thesis committee, Dr. Kathleen May and Dr. Terry Badger.

My special thanks to my family, friends and colleagues for their support and encouragement through all these years. I would like to express my gratitude for the patience and understanding they afford me as I pursue the passions in my life. Without them, my accomplishments would not be possible.
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ABSTRACT

The purpose of this study was to describe perceptions of stress and coping styles in Mexican-American adults with type 2 diabetes. The specific aims were to: (1) describe perceived stress for Mexican-American adults with type 2 diabetes; and, (2) describe how Mexican-American adults with type 2 diabetes cope with stress.

This study is a secondary analysis of data from an original qualitative study. Three of the six transcripts from the original study were analyzed using content analysis, resulting in 348 thematic units. Content analysis was used to group the thematic units into 17 researcher derived subcategories.

Results of this investigation show that Mexican-Americans with type 2 diabetes perceive themselves as having a lot of stress. Stress causes them to feel bad both physically and psychologically. Family and cultural norms are the most common sources of stress for Mexican-Americans with type 2 diabetes. In spite of the challenges, there is hope. Participants feel they can cope with type 2 diabetes with the help of family, friends and their healthcare providers.

Stress is a common experience in people with chronic illnesses. The perceptions of stress and coping styles in Mexican-Americans with type 2 diabetes is a little researched area. Learning more about this experience in the Mexican-American population may provide relevant information for diabetes educators and may also guide strategies to improve health outcomes.
CHAPTER ONE

INTRODUCTION

Obesity related illnesses such as diabetes mellitus have placed a burden of increasing magnitude on the healthcare system in the United States and around the world. Stress is an unavoidable aspect of modern life, affecting all physical and psychological human conditions. This study examines perceptions of stress and coping in Mexican-Americans with type 2 diabetes. Findings are based upon research with participants in the Focus Group Study of Mexican-Americans with type 2 diabetes (Vincent, Clark, Zimmer, & Sanchez, 2006). Chapter One includes a discussion of the background, significance of the problem, a purpose statement, and specific aims.

Background

Diabetes is a significant cause of morbidity and mortality in the United States. According to the (Centers for Disease Control and Prevention [CDC], 2005) the prevalence of diabetes among people aged 20 years or older in the United States in 2005 was 20.6 million, or 9.6% of the population. Complications of diabetes include: cardiovascular disease, blindness, renal disease, neuropathies, sexual dysfunction, hypertension and abnormalities of lipoprotein metabolism (CDC). Diabetes was the sixth leading cause of death in the United States in 2002, and overall statistics show that the risk for death among people with diabetes is about twice that of people without diabetes of similar age (CDC). Because of the prevalence of this disease and its devastating complications, it is critical that healthcare professionals continue to pursue ways to address diabetes as a major public health challenge.
The two main types of diabetes are type 1 and type 2. Type 1 diabetes develops when the body’s immune system destroys insulin producing pancreatic beta cells. To survive, people with this type of diabetes have to take exogenous insulin. The onset usually strikes children and young adults, but can occur at any age (CDC, 2005). Although the cause of type 1 diabetes is unknown, 85-90% of those diagnosed have autoantibodies to islet cells, insulin, or glutamic acid, all of which cause destruction of the beta cells (ADA, 2006b). There are multiple genetic predispositions and some environmental factors related to this autoimmune destruction of beta cells, all of which are still poorly defined (ADA, 2006b).

Type 2 diabetes accounts for 90% to 95% of all diabetes. It usually begins as insulin resistance, which indicates that the cells do not utilize insulin correctly, leading to an insulin secretory defect (ADA, 2006a). Risk factors include: older age, obesity, family history, history of gestational diabetes, sedentary lifestyle, and race/ethnicity (CDC, 2005). The preferred method of diagnosing type 2 diabetes is with the use of a fasting (no caloric intake for 8 hours) plasma glucose level. A result of 126 mg/dl or greater on at least two tests, performed on different days, provides a definitive diagnosis (ADA, 2006a). This study addresses only those with type 2 diabetes.

Problem and Significance

The total prevalence of diabetes in the United States in all age groups for the year 2005 was 20 million people, or 9.6% of the entire population (CDC, 2005). Compared with whites, there is an increased prevalence of diabetes among minority groups, which include Asians, African Americans, Hispanics, Native Americans and Pacific Islanders (Jovanovic &
Harrison, 2004). Mexican-Americans, the largest Hispanic/Latino subgroup, are 1.7 times more likely to have diabetes than non-Hispanic whites (CDC). There is a strong correlation between the development of diabetes and a high percentage of visceral adiposity found in American minority groups (Jovanovic & Harrison). The high percent of visceral adiposity may be correlated with a shift toward a sedentary lifestyle, and the consumption of a high fat diet, both common occurrences in modern industrialized societies. Sedentary lifestyles and high fat diets have been associated with obesity at early ages (Jovanovic & Harrison). Furthermore, the prevalence of diabetes-related complications, such as blindness and amputations, is 50 to 100% higher in African Americans and Hispanics than in whites. It is not apparent that diabetes-associated complications are related to biological differences, but rather with differences in access to medical care and self-management of diabetes (Jovanic & Harrison).

In the state of Arizona, nine percent of the adult population reports being told that they have diabetes (Ciocazan, Ramirez, Joshi, Vensor, & Viera, 2005). Based on the Department of Economic Security [DEA] population projections for 2005, this translates to at least 519,061 Arizonans with diabetes (DEA, 2006). The high prevalence of diabetes is correlated with 25.2% of Arizona’s population being Hispanic/Latino (Ciocazan, et al.). In Arizona, diabetes ranks fifth among the leading causes of death among Hispanics/Latinos. A striking fact that highlights the prevalence of diabetes in the Mexican-American Hispanic population is demonstrated in the Mexico-United States border town of Douglas. More than three quarters of that town’s population self-identify as Mexican-American and the rate of diabetes is 18.3 percent. (Ciocazan, et al.).
The Behavioral Risk Factor Surveillance System (BRFSS) cross-sectional telephone survey results of 195,005 adults, comparing 1991 data to 2001, demonstrates a continuing increase of obesity and diabetes in both sexes, all ages, races, educational levels, and smoking levels. Based upon these statistics alone, discussing obesity rates in the United States should be a priority for policy makers (Mokdad, et al., 2003).

The estimated diabetes-related healthcare costs for both direct and indirect expenses, such as disability, work loss, and premature mortality in the United States in the year 2002, were $132 billion (CDC, 2005). The high prevalence of obese children and adults across the United States from 1987 to 2002 has lead to a subsequent rise in obesity-related illnesses such as diabetes. In turn, there is a concomitant rise in spending to treat these obesity related illnesses due to the expanded menu of medical treatments now available (Thorpe, 2005). In the state of Arizona alone, the total direct medical costs for diabetes during 2004 were $3 billion (Ciocazan, et al., 2005). Considering this increase in healthcare costs for diabetes and the prevalence of diabetes in the Mexican-American population, it is clear that this issue poses a significant challenge to our healthcare system throughout the United States and especially in the state of Arizona.

Stress and Type 2 Diabetes

*Stress and Disease*

High levels of stress may lead to significant negative effects on health. Prolonged stress results in the production of hormones that activate the sympathetic nervous system and results in the release of epinephrine. This increased production of epinephrine by the sympathetic nervous system, sometimes called the “fight or flight” response, inhibits
insulin and stimulates glucagons. As epinephrine and glucagon levels are elevated during stress, hepatic glycogenolysis and gluconeogenesis are promoted and insulin secretion is suppressed. These combined effects increase the concentration of blood glucose (Sherwood, 2004). The stress response may be very detrimental to people with diabetes and may further promote the development of this disease, or worsen the complications of those that have it.

**Mexican-Americans, Family, and Stress**

Three major influences on self-care practices in patients with type 2 diabetes are the practitioner/healthcare system, the community, and the family (Wen, Sheperd, & Parchman, 2004). For the Mexican-American patient, the family is considered the primary support group. *Familism* is the set of norms related to family values in this culture (Wen, et al.) and may be described as giving family needs greater priority than individual needs (Wells, Cagle, & Bradley, 2006). This cultural value may have a positive influence on diabetes management if the patient’s family is included in all aspects of promoting health and wellness. Many decisions for the Mexican-American patient are made by the family and lack of family support can result in poor self-management behaviors (Wen, et al.). If the family is not supportive of the lifestyle changes necessary for people with diabetes, these changes may not continue (Thackeray, Merrill, & Neiger, 2004).

*Machismo*, a Mexican-American cultural influence, can affect healthcare practices, and is considered a positive attribute of masculinity, honor, and accountability. Machismo leads the man to be the representative of the family outside of the home, in the
areas of community and economic security (Aranda, Castaneda, Lee, & Sobel, 2001). Machismo supports family survival, but may prevent a Mexican-American male from expressing pain or disclosing an illness due to him seeming weak or unable to care for his family (Wells, et al., 2006). Being able to provide adequately for his family may reduce stress and the effects of stress on his health also.

Explanatory models of disease and access to healthcare services may also influence diabetes self-management in Mexican-Americans. Explanatory models are the stories people construct in order to make sense of their disease within the context of their culture (Jezewski & Poss, 2002). These stories are based on beliefs and values and are directly related to a patient’s behavioral response to their diabetes (Jezewski, & Poss). Once a healthcare provider can elicit these exploratory models from a patient, they will be able to make an assessment of the patient’s perspectives of their illness, thus allowing for the development of a treatment plan that optimizes self-management for the patient (Jezewski & Poss).

A descriptive qualitative study was performed by Poss and Jezewski (2002) using Kleinman’s explanatory model as a framework. The purpose of the study was to develop a culturally specific explanatory model of patients with type 2 diabetes from the perspective of the Mexican-American individual living in El Paso County, west Texas, along the United States-Mexico border. Mexican-Americans (18 women, 4 men) with type 2 diabetes were interviewed and followed up with focus group discussions. The perceptions from Mexican-Americans with type 2 diabetes were discussed with regard to cause, symptoms, treatment, and social significance. Results showed that the biomedical
view of patients with type 2 diabetes alone does not enable providers to care for their
clients, control the symptoms, or prevent complications from this chronic disease
(Jezewski & Poss). Health professional’s knowledge of explanatory models, analyzed by
eliciting traditional Mexican viewpoints, can guide improvements in educational
programs and the development of more effective self-management skills for Mexican-
American patients with diabetes (Jezewski & Poss).

Surveillance System and found that disparities exist in diabetes management practices
among racial/ethnic groups in the United States. Limited access and utilization of
healthcare services in the Mexican-American population may be associated with a lack of
health insurance and/or a primary care provider (Thackery, et al.). Many Mexican-
Americans do not have a primary care provider because, as a culture, they are generally
loyal to one provider and, if he/she leaves the area, the patient will stop going for care.
Limited access to healthcare may also be related to the challenge of verbal and printed
communication barriers within this population (Thackery, et al.). This disparity should be
emphasized with attempts made to provide for better verbal and printed educational
information in the language of those on the receiving end.

*Mexican-American’s Perception of Stress*

Perceived stress with regard to health was measured in Mexican citizens living in
the United States, Mexican-Americans, and non-Hispanic Whites in a study by Farley,
Galves, Dickson, and Perez (2005). Although perceived stress did not vary significantly
by cultural group, coping styles did vary (Farley, et al.). Perception of stress was not
found to vary among these groups with the presence or absence of medical problems or with age. Coping styles did vary, with Mexican immigrants seeming to process stress in more beneficial ways than the other two groups (Farley, et al.).

The relationships among stress, coping resources, social support, and psychological well-being in Mexican-American men and women were observed by Aranda, et al. (2001). It was determined that both men and women experienced stress but in different contexts (Aranda, et al.). For the women studied, the sources of stress and social support were from the family and marital domains. Sources of stress for men came from work and lack of support from relatives outside the household. Another finding was that avoidance coping, such as cognitive avoidance, resignation, and emotional discharge, was associated with depressive symptoms for both the men and women (Aranda, et al.). Avoidance coping methods have been regarded as very practical responses to the multiple stressors that Mexican-Americans tend to experience, such as, discrimination, victimization, acculturation stress, and missed opportunities (Aranda, et al.).

Although there are specific stressors that are common in the Mexican-American culture, stress is not unique to their culture. There is the well known physiologic “fight or flight” response to acute stress in the human body. The hormonal response to acute stress initiates sympathetic nervous system stimulation, causing increased epinephrine secretion, which in turn inhibits insulin secretion and stimulates glucagons secretion. Both of these effects cause an elevation in blood glucose levels (Sherwood, 2004).

For the person with diabetes, dealing with the disease itself may cause increased and chronic stress in their lives, as they attempt to regulate diet and exercise, take
medications, and keep their blood sugars at an optimal level. Although there is strong circumstantial evidence that long term or chronic exposure to psychosocial stressors has an impact on pathologic conditions, there is no definitive cause and effect relationship (Sherwood, 2004). One consideration in how long term or chronic daily stress affects glycemic control is that dealing with stress may simply interfere with the ability to self-manage diabetes appropriately (Lloyd, Smith, & Weinger, 2005).

Purpose

The purpose of this study was to describe perceptions of stress and coping styles in Mexican-American adults with type 2 diabetes. The specific aims were: (a) describe perceived stress for Mexican-American adults with type 2 diabetes; and, (b) describe how Mexican-American adults with type 2 diabetes cope with stress.

Summary

Chapter One provides an overview, background and discussion of the significance of Type 2 diabetes in the United States. Additionally, the prevalence and impact of diabetes among Mexican-Americans is presented. The importance of cultural norms and their effects on diabetes in the Mexican-American population are also presented. Perceived stress in the Mexican-American population and the impact it has on type 2 diabetic management is discussed.
CHAPTER TWO

REVIEW OF LITERATURE

This chapter presents a review of the literature germane to stress and type 2 diabetes in Mexican-Americans. The related literature includes: a discussion of the prevalence and complications of the disease, an overview of the pathophysiology of diabetes, glucose metabolism and stress, stress in the Mexican - American culture, general coping mechanisms, and coping with type 2 diabetes in the Mexican - American.

Prevalence and Complications

Diabetes continues to be a major health concern in the United States. The increased prevalence of this disease from 1990 to 2000 correlates directly with the U. S. obesity epidemic (Mokdad, et al., 2003). In 2002, the American Diabetes Association reported that 17 million Americans or 6.2% of the population had diabetes (Hirsh, 2002), and just three years later, in 2005, there were a reported 20.5 million people with diabetes, or 9.6% of the population (CDC, 2005). Diabetes is the leading cause of adult blindness (12,000-24,000 new cases each year), end-stage renal disease (more than 114,000 cases of diabetes related dialysis or transplants in 1999), and non-traumatic extremity amputation (82,000 diabetes-related amputations between 1997-1999). Heart disease is the leading cause of death in people with diabetes (Hirsh). Corresponding healthcare costs for diabetes are estimated to exceed $98 billion per year (Hirsh). Sedentary lifestyles and high fat diets within modern industrialized societies are believed to promote obesity at an early age. There is a strong correlation between the development of diabetes and higher than normal visceral adiposity in these American minority groups.
(Jovanovic, 2004). The risk of diabetes is twice as high in Hispanic adults as in non-Hispanics Whites, and there is a 50-100% higher incidence of diabetes-associated complications such as retinopathy and amputations in this minority group (Jovanovic).

Pathophysiology of Diabetes

In this study the author addressed type 2 diabetes, which is the form that accounts for 90-95% of those with diabetes. Patients with type 2 diabetes have either insulin resistance, defined as resistance to the effects of insulin on glucose uptake, metabolism, or storage, or an insulin secretory defect (Kumar, Abbas, & Fausto, 2005). Both of these conditions lead to an insulin deficiency (ADA, 2006). Individuals with insulin resistance have a lower than normal uptake of glucose in muscles and adipose tissue and an inability to suppress hepatic gluconeogenesis (glucose formation from proteins or fats); (Kumar, et al.). In people without diabetes, insulin and glucagon have opposing regulatory effects (Kumar, et al.). But in people with type 2 diabetes, there is an inability of the body to counteract glucagon production because of the lack of useful insulin which leads to a build up of glucose in the blood (hyperglycemia).

Close glycemic control in all patients with diabetes involves keeping the blood glucose concentration as close to normal as possible (fasting 70-110) (Ferri, 2004). Close glycemic control may delay the onset and slow the progression of complications such as, retinopathy, nephropathy, and neuropathy (Diabetes Control and Complications Trial [DCCT], Research Group, 1995). The benefits of maintaining close glycemic control were tested in the Diabetes Control and Complications Trial, which was a multi-center, randomized, controlled clinical trial conducted on 1,441 people with type 1 diabetes.
Subjects were followed from 1983 until 1993 (DCCT Research Group, 1995). A 35-70% delay in the onset of retinopathy, nephropathy and neuropathy was found with the use of intensive therapy, or close glycemic control in patients with type 1 diabetes (Diabetes Control and Complications Trial [DCCT] Research Group, 1993). The researchers concluded that although this study was conducted on patients with type 1 diabetes the results may apply to people with type 2 diabetes because chronic hyperglycemia, regardless of cause, is associated with the presence and/or progression of the microvascular complications (DCCT, 1993). Reducing the devastating complication of diabetes will help control the major effects this disease has on individuals, the healthcare system, and society as a whole.

Glucose Metabolism and Stress

The majority of studies on the body’s response to stress and its effects on blood glucose levels all suggest that the stress response results in elevated blood glucose levels. There are two types of stress to consider: acute and chronic. The body’s response to acute stress has an effect on blood glucose levels due to the physiologic responses of decreased insulin secretion and increased glucagon secretion (Sherwood, 2004). Long term stress and its effect on blood glucose levels in people with type 2 diabetes may be related to behavioral responses to stress that affect self management, such as a low level of physical activity, poor diet, or difficulties with medication taking (Lloyd, et al., 2005). Therefore, it is of utmost importance that the effects of long-term stress are understood by people with diabetes, family members, significant others, and healthcare providers.
The Hoorn Study tested whether chronic psychological stress was positively associated with the prevalence of type 2 diabetes (Mooy, Vries, Grootenhuis, Bouter, & Heine, 2000). The study surveyed 2,380 Caucasians between the ages of 50 to 74 without a history of diabetes about the number of major stressful life events that they had experienced over the past five years (from 1989-1992). The list of questions consisted of 10 nonwork events and four work-related events, all known to be major stressors. Study subjects answered yes or no to their exposure to things such as a serious or long-lasting illness of a child, death of a child, death of a partner, death of a relative, end of a relationship, retirement, and forced job change. An oral glucose tolerance test was done on each of the participants before they completed the questionnaire. The criteria for detecting new cases of diabetes, or previously undiagnosed diabetes were based on World Health Organization recommendations of a fasting plasma glucose greater than or equal to 7.8 mmol/l and/or 2-hr post load plasma glucose of greater than or equal to 11.1 mmol/l. Those subjects with a higher number of major stressful life events reported in the last 5 years had a greater incidence of diabetes type 2 (Mooy, et al.).

The effects of laboratory-induced stress on blood glucose in type 2 diabetes was tested in another study by Goetsch, VanDorsten, Pbert, Ullrich, and Yeater, (1993). Fifteen women and seven men with type 2 diabetes and six women and three men without diabetes, of similar age, education, and weight were recruited from a university medical center. Subjects came to the lab at least two hours after their last meal. Blood glucose levels were obtained after ten minutes of adaptation to the lab surroundings, after a five-minute baseline, and then after five minutes of stressful imagery or threat of
electric shock. Blood glucose levels rose significantly in the subject with type 2 diabetes, ranging from 1.9-38% during threat of electric shock. Blood glucose trended upward during imagery, but did not reach significance. The researchers suggest that some subjects may have had difficulty maintaining the imagery and blood glucose declined when the subjects were not actively engaged in stressful imagery. Subjects without diabetes did not demonstrate an increase in blood glucose in response to either stressor condition. This suggests that people with type 2 diabetes may be prone to producing more glucagon in responses to stressors secondary to a heightened sensitivity to catecholamine’s (Goetsch, et al.).

The concept of being prone to a heightened sensitivity to catecholamine’s would be problematic for people with type 2 diabetes because, in response to acute stressors, the body’s sympathetic nervous system is stimulated, which in turn stimulates the secretion of the catecholamine epinephrine. The effects of epinephrine secretion lead to further insulin inhibition and an increase in glucagon production, all of which add to an increased buildup of glucose in the blood (Sherwood, 2004). The response of a possible heightened sensitivity to catecholamine’s adds to the challenge that people with diabetes face in maintaining optimal glycemic control, especially in stressful situations.

The endocrine system is also mobilized in a response to stress (Sherwood, 2004). In a stressful response, the hypothalamus is stimulated to activate the CRH–ACTH–cortisol system. Cortisol breaks down fat and protein stores, expands carbohydrate stores and increases the availability of blood glucose. These increases help sustain nourishment to the brain and help provide the means for the repair of damaged tissues (Sherwood,
2004). In a person with diabetes, this response also challenges their body systems to maintain glycemic control.

Because most of these studies were performed on Caucasians, and some in countries other than the United States, caution should be exercised in any generalizing of these results to the Mexican American population. They are presented here for the interest of providers and patients with type 2 diabetes to more fully understand the potential effects of stress upon this disease.

Stress in the Mexican-American Culture

Relationships between coping style, lifestyle, and culture in Mexican-American people with type 2 diabetes are frequently discussed in the literature. A number of studies have examined the response of Mexican-Americans to physiologic and psychological stress. Aranda, Castaneda, Lee and Sobel (2001), Gaskill, Williams, Stern, Stern, and Hazuda (2000), and Black, Markides, and Ray (2003) found that individuals in the Mexican-American culture react to stressors in their lives based upon their cultural norms.

In a quantitative study by Aranda, et al. (2001), 171 Mexican American adult males and females of a lower socioeconomic group were recruited from community agencies in rural and urban areas of Pennsylvania and Los Angeles. Participants were asked to complete the Beck Depression Inventory, Hispanic Stress Inventory, Coping Responses Inventory-Adult Form, and the Dimensions of Social Support Scale. The purpose of the study was to explore the relationships among stress, coping resources, social support, and psychological well-being in Mexican American men and women (Aranda, et al.). Results suggested that the men and women did not differ significantly in
terms of the rate of depressive symptoms, but they did differ in the source and domain of their stress. Women reported family and marital issues as significant sources of stress, whereas men reported more community and economic security related stress. These differences may be related to the cultural values of marianismo and machismo. In marianismo Mexican-American women are expected to care for the family hearth, to coordinate all of the activities of the home, and to keep peace in the home environment (Aranda, et al.). In the Mexican-American culture, the man’s sense of machismo may further explain the differences in sources of stress between men and women (Aranda et al.). Machismo includes the positive attributes of masculinity, honor, and accountability that are expected of the man in order to be perceived as a good provider. The man is expected to be the representative of the family outside the home where he provides for the family in the economic and community realms (Aranda, et al.). Challenges in these areas may add to the Mexican-American males stress level. Study results also suggest that those who use avoidance coping responses (such as cognitive avoidance, resignation, and emotional discharge) to stress expressed more depressive symptoms (Aranda, et al.).

There are several limitations worth noting in this study. First, the cross-sectional nature of the study does not directly address the issue of causality. Future work should examine how coping and social support moderate the direct effects of stress on psychological well-being (Aranda, et al., 2001). Secondly, although the gender specific factors associated with depressive symptoms were tested, the complex mediating and moderating relationships related to stress-coping outcomes were not (Aranda, et al.).
A review of the San Antonio Heart Study which investigated the association between marital stress and the risk of developing type 2 diabetes in 1,887 married, non-diabetic Mexican Americans was reported by Gaskill, et al. (2000). Subjects were given the Pearlin and Schooler's 9-item scale of perceived stress questionnaire at baseline and again seven years later. The group that experienced high stress levels had a doubling of the incidence of diabetes. High marital stress emerged as a risk factor which was capable of doubling the incidence rate of diabetes. Single status (separated/divorced, widowed) was also associated with a 25% increased chance for developing diabetes type 2. These results suggest that high levels of marital stress may be a risk factor for the development of diabetes (Gaskill, et al.).

In a longitudinal study, Black, et al. (2003), interviewed 2,830 Mexican-Americans age 65 or older living in the states of Texas, Colorado, New Mexico, Arizona, and California. Interviews were conducted at baseline from 1993 to 1994, with three follow-ups, one from 1995 to 1996, another 1998 to 1999, and a final interview from 2000 to 2001. At each data collection point, subjects were screened for the development of macro vascular complications (including cardiovascular complications, stroke, and kidney disease), micro vascular complications (including nephropathy, neuropathy, retinopathy, and amputations), functional disability, and mortality. Findings provide compelling evidence that the combination of having diabetes and depression has a synergistic effect on adverse health outcomes in older Mexican-Americans (Black, et al.). The investigators agreed that there is clinical importance to this study because there is effective treatment available for both depression and type 2 diabetes.
These studies highlight the vital importance of learning and understanding the causes and responses to stress in the Mexican-American culture. Treatment outcomes may be more successful when cultural norms are included in the development of treatment plans.

**Coping Mechanisms in People With Type 2 Diabetes**

All patients with chronic illnesses are challenged with living with their disease and incorporating all aspects of it into their lifestyles. The stress of dealing with disease crosses all cultures and individuals’ lives. As healthcare providers and educators, the ultimate goals of therapy and education should be optimal metabolic control, prevention of acute and chronic complications, and a high quality of life, while keeping costs within reason (Weerdt, Visser, & Veen, 1989; Norris, Lau, Smith, Schmid, & Engelgau, 2002).

Studies conducted by Weerdt, et al. (1989), Ismail, Winkley, and Hesketh-Rabe (2004), and Thorne, Paterson, and Russell (2003) reveal important insight into how patients with type 2 diabetes cope with their disease. Weerdt, et al., and a group of researchers from the Netherlands reviewed the literature with regard to diabetic education studies, their determinants of self-care behavior, and the results of diabetes education programs. Their goal was to find a common theme to integrate the results of the various studies and provide a theoretical framework for future research (Weerdt, et al.). The results of their review provided the following list of factors to consider when addressing self-care behaviors: (a) knowledge of diabetes and its management; (b) level of anxiety and stress; (c) health locus of control; (d) attitude toward diabetes and its management; (e) social environment; and, (f) demographic variables (Weerdt, et al.). Their findings suggest that many studies have shown anxiety and stress as having a destabilizing effect on metabolic control, and very low as well as very high anxieties were associated with poor
metabolic control (Weerdt, et al.). Self-confidence and knowledge seem to be the common themes that allow an individual to have lower anxiety levels in regard to their diabetes management.

A meta-analysis was conducted of 25 randomized controlled trials of psychological therapy to improve diabetes control in people with type 2 diabetes and assess the effectiveness of these therapies (Ismail, et al., 2004). Psychological therapies consisted of counseling, cognitive behavior therapy, and psychodynamic therapy. The techniques classified as behavioral therapy were relaxation, activity scheduling, problem solving, goal setting, contract setting, cognitive restructuring, and stress management. Those receiving the psychological therapy were compared to control group trials in which patients received usual care, education, waiting list or attention controls. Results showed the people receiving psychological therapies had significantly better glycemic control with an absolute difference of 0.76% in glycated hemoglobin. Psychological therapy was also associated with lower psychological distress, but did not appear to affect weight or blood glucose concentration. Some limitations of the meta analysis were that most of the studies originated in the United States where health insurance influences resources, studies were done as long as 20 years ago, and there was no particular attention paid to cultural differences among participants. The researchers concluded that including psychological treatments in diabetes control can be an effective approach, but the type of therapy and the subgroup that would benefit the most are not clear (Ismail, et al.).

A qualitative secondary analysis, utilizing the data sets from two primary studies, was performed by Thorne, et al., (2003). The researchers explored what those living with a chronic illness believed to be effective chronic illness self-care decision making. Findings from this
study could then be used to develop self care management support strategies. The primary studies involved subjects with a long-standing diagnosis of four specific chronic diseases: type 1 diabetes, type 2 diabetes, HIV/AIDS, and multiple sclerosis (MS). In the primary study, data were collected over the course of a 12-month period.

The researchers found aspects about diabetes that are unique compared with other chronic diseases such as: (a) medications and lifestyles may have to be managed to the extent that this attracts the attention of others; (b) usually people with diabetes look “normal” and behave “normal” unlike someone with MS or even HIV/AIDS; and, (c) people with diabetes are faced with making daily decisions that may have an immediate impact on their well being, such as an acute low blood sugar reactions, or long term impacts such as maintaining optimal blood sugar control to prevent the devastating complications from their disease. All participants reported being overwhelmed with the intensity of decision-making about self-care when they were first diagnosed with their chronic disease. People with diabetes reported that food restrictions lead to the most impact on their social interactions. All participants learned about the highly regimented and restrictive food guidelines needed to medically manage their disease (Thorne, et al.).

People with diabetes thought that their physicians were generally not well informed about the “real-life” of living with their disease and tended to give impractical, text-book driven advice. Therefore the people with diabetes sought out specialist physicians or diabetes nurse educators who were more practical in their advice in dealing with real-life situations. Despite the commitment they had to living a healthy lifestyle, most participants said their lives still required spontaneity, fun, pleasure and freedom in order to be fulfilling. Self-care decision making for them was seen as an ongoing process in which conscious decisions may be made to ignore or
violate healthy practices at times to take part in valued activities. These self-care decisions appear to be a healthy way for people with chronic diseases, such as diabetes, to reduce the stress of dealing with their disease long term. Thus, self-care decision-making is an ongoing and unique process for each individual and each chronic disease (Thorne, et al.).

There is a common theme among studies and articles investigating how people with type 2 diabetes cope with their disease and all of the ramifications of it. This common theme is that individuals need to be provided with the necessary information to handle their disease. All information needs to consider cultural, environmental, family, and other outside influences. Most individuals are interested in learning the optimal self-management techniques which they will tailor to their unique lifestyles.

Coping with Type 2 Diabetes in the Mexican-American Culture

There are unique considerations when dealing with the Mexican-Americans with diabetes. Healthcare providers need to keep the importance of family support and the differences in gender roles in the Mexican-American culture in mind when formulating treatment plans for this population.

Multiple studies evaluating knowledge and health beliefs and behaviors effects on self-care management in Mexican-Americans with type 2 diabetes have been conducted. Brown, Villagomez, Segura, Barton, and Hanis (2000), Hunt, Pugh, and Valenzuela (1998); and Wen, Shepard, and Parchman (2004) have exhibited similar results.

A descriptive study designed to examine the relationship between diabetes-specific family support and other psychosocial factors with regard to diet and exercise self-care behaviors in older Mexican-Americans with type 2 diabetes was used by Wen,
et al., (2004). They described previously established factors of the social environment that affect self-care practices in patients with type 2 diabetes, as the practitioner/health system, community/work environment and the patient’s family. Of these, the family is the least studied (Wen, et al.). One hundred sixty subjects completed surveys during face-to-face interviews.

Symptom barriers for exercise due to arthritis and pain were evaluated. Having the time to exercise was one of three most frequent barriers. The researchers speculate that because the sample was predominantly female, it is possible that this barrier may be due to the role of women as caregivers in the family (Wen, et al., 2004). The stereotypical role of the female in the Mexican American culture is that of the “caregiver” and “homemaker.” These women are expected to take care of others before themselves (Hunt, et al., 1998).

Diet may be a barrier in this group, because many participants felt that making a change in their diet, or attempting to make it healthier, would require them to eat meals that are different from other family members, and it is difficult for them to give up traditional foods (Wen, et al, 2004) The importance of celebration with food is a priority in the Mexican American culture. Any occasion—births, birthdays, religious holidays, official and unofficial holidays, and anniversaries of deaths is seen as a time to celebrate with food and enjoy the companionship of family and friends (Purnell, & Paulanka, 2003). Because food is a primary form of socialization in this culture, people with diabetes have additional challenges in adhering to a prescribed diet. Healthcare providers should seek creative ways to assist these individuals with dietary programs.

Exercise and diet barriers may be explained by the set of cultural norms or values related to familism. This value is related to the importance of family and is often described as family
members generally pulling together, with primary and secondary relatives supporting the family member in need. In general, this practice has a positive effect on family functioning, but it may become negative due to extended obligations to others jeopardizing the integrity of the nuclear family (Hanson, 2001). Of importance to healthcare providers is the concept that many decisions, including those in regard to an individual’s healthcare, may be made by the family. In the Wen, et al., (2004) study a higher level of perceived family support and greater self-efficacy was associated with higher reported levels of diet and exercise self-care. Therefore it is vital that family members are included in education and medical decision making as often as the patient would like (Purnell, & Paulanka, 2003).

Interviews of 51 self identified Mexican Americans with type 2 diabetes to explore behavioral factors that affect self care was reported by Hunt, et al., (1998). Results of this study suggest that patients were trying to control their diabetes, but were unable to do so completely. Key factors influencing treatment choices were the belief in the power of modern medicine, the desire to act and feel “normal”, the desire to avoid physical symptoms, and limited economic resources (Hunt, et al.). These patients juggled their treatment choices to attempt to keep their disease under control. This seems like a reasonable approach, as family and family activities are a very crucial part of these patients’ lives. Quality of life issues mixed with disease control make type 2 diabetes very challenging for most people.

A randomized wait-control group intervention study of 252 people in Starr County, Texas was conducted. The purpose of this project was to describe metabolic control, knowledge, and health beliefs of Mexican-Americans with type 2 diabetes (Brown, et al., 2000). The interventions consisted of 3 months of weekly instruction (2 hours per week) on nutrition, home
glucose monitoring, exercise, and other topics relevant to diabetes self-care, and 9 months of biweekly support group sessions to promote behavioral changes (Brown, et al.). Female subjects reported lower beliefs of control and social support for diet than male subjects. The investigator also explains the importance of including empowerment strategies for Mexican-American women in intervention plans, and this empowered role must be accepted by the family to ensure success for the patient. Assisting Mexican-American women with empowerment may be the most effective strategy in their development of feelings of control over the management of their chronic illness (Brown, et al.).

Stress, coping mechanisms, and self-management interventions were studied by Vincent, et al., (2006) and Farley, et al., (2005) with compelling results. Although the impact of stress on type 2 diabetes is well documented, self-management interventions often do not include stress management techniques. This point is supported by findings of a focus group study by Vincent, et al. A theme that emerged was of feeling more stressed since being diagnosed with diabetes and not knowing how to cope with those feelings. Participants also stated that diabetes increased their stress level because they did not always have the self-management tools they needed. They wanted to learn techniques for managing stress and decreasing stressful situations (Vincent, et al.). The researchers concluded that there was a need for emphasizing the effects of stress on glycemic control and learning techniques to maintain optimal glycemic control should be included in all self-management diabetes education programs (Vincent, et al.).

A comparison was made of stress, stress coping strategies and health-related quality of life in two Hispanic groups, Mexican citizens living in the United States,
Mexican-Americans, and a group of Non-Hispanic Whites. All subjects received care at a rural migrant/community health center in an agricultural town of 7,000 in the Midwest. Results suggest that (Farley, et al., 2005), as a group, Hispanics face particularly stressful life situations. Many are immigrants from Mexico who enter the United States without legal documentation, and the experience of immigration itself can be extremely stressful. Many of the immigrant’s social support systems are left in Mexico. According to this study, the major issues facing Hispanics in the United States are: (a) lower socioeconomic status than non-Hispanic Whites; (b) language and cultural barriers may cause difficulty in accessing needed services, such as medical care; (c) Hispanics are the least likely group to have health insurance; (d) acculturation may lead to greater stresses and psychosocial problems; and, (e) many Hispanics in the United States whether native born or immigrants report a perception of discrimination (Farley, et al).

The “Hispanic Health Paradox” states that in spite of all of their stressors, Hispanics tend to have better health than non-Hispanic Whites (Farley, et al., 2005). Because stress coping styles can reverse the negative effects of stress on health, an explanation for this paradox may be that Hispanics employ healthier stress-coping styles than non-Hispanic Whites. These researchers found that Mexican Immigrants seem to process stress in a more beneficial way than do non Hispanic Whites and Mexican-Americans. Perceived stress did not vary significantly by age or culture, but it did vary by stress coping style. Coping styles such as disengagement, self-blame, denial, substance use, and self-distraction were associated with higher levels of perceived stress than active coping, humor, positive reframing, and acceptance. Overall, this study supported the
paradox that Hispanics as a group reported better physical and mental health-related quality of life than non-Hispanic Whites (Farley, et al.).

The validity of the “Hispanic Health Paradox” was argued by Hunt, et al., (2002). These researchers analyzed 830 individuals that had taken part in the San Antonio Heart Study (SAHS). The study subjects were first identified as having diabetes, either when enrolled at baseline (N=538) in the SAHS, or on follow-up examination (N=302). A status follow-up on mortality was done on average 10.5 years after enrollment. There were three ethnic groups among the subjects consisting of U.S. born Non-Hispanic Whites, U.S. born Mexican-Americans, and Mexican born Mexican-Americans. The results showed the hazard of all-cause cardiovascular mortality appearing higher in the U.S. born Mexican-American group, although not statistically significant (Hunt, et al., 2002). In the past, sociocultural factors have been used to explain the “Hispanic Health Paradox”, but in the opinion of these researchers, it may be more related to inaccurate data collection methods such as ethnic miscalculations and incomplete ascertainment of deaths. Therefore, the validity of the “Hispanic Health Paradox” is still in question, and more research is needed on this topic.

Definition of Terms

Stress: a specific response by the body to a stimulus, such as fear or pain that disturbs or interferes with the normal physiological equilibrium.

Perception: an impression or sensation of something.

Coping Mechanism: routine method of facing or dealing with a problem or difficulties.
Emotional Discharge: outwardly expressing emotions, such as; crying, laughing, trembling.

Cognitive Avoidance: to keep away from with the use of mental processes such as perception, memory, judgment, and reasoning as contrast with emotional and volitional processes.

Resignation: an accepting, unresisting attitude.

Summary

The review of literature included research on prevalence, pathophysiology and complications of type 2 diabetes, glucose metabolism and stress, stress in the Mexican-American culture, coping mechanisms in people with type 2 diabetes, and coping in Mexican-Americans with type 2 diabetes. There has been an increased prevalence in the United States in diabetes over the past 20 years with no downward trend. Close glycemic control will delay the progression of complications from type 2 diabetes. It is suggested that the body’s response to stress results in elevated blood glucose levels. In the Mexican-American culture the sources of stress may vary by gender, and depression and marital stress may lead to higher prevalence or more severe complication rates for those with type 2 diabetes. The common theme among people with type 2 diabetes is the importance of being provided with adequate information and education about their disease. Adequate information and education will allow for the utilization of optimal coping strategies. Finally, findings from some studies revealed that Mexican-Americans may appear to have a very stressful life but their coping styles and lower perceived stress may allow them to tolerate their situation better than non-Hispanic Whites.
CHAPTER THREE

METHODS

Chapter Three is a description of the methods and materials that were used to conduct the study, including information on research design and sample, protection of human subjects, subject recruitment, data collection, instruments, data analysis plan and trustworthiness.

Research Design

The design for this study was a qualitative descriptive design using secondary data analysis. The data analytic method was content analysis of data from the original study titled, “Using Focus Groups to Develop a Culturally Competent Diabetes Self-management Program for Mexican–Americans” (Vincent, Clark, Zimmer, & Sanchez, 2006). In this secondary data analysis, data gathered in the original study was analyzed to address the specific aim of describing perceived stress and coping styles in Mexican-Americans with type 2 diabetes. An inductive process of content analysis revealed thematic units of text that were meaningful, such as sentences or parts of sentences that to identify unique themes. The themes were then grouped by commonalities into subcategories. The subcategories were coded into categories based upon shared meaning related to the major concepts of stress and coping under which they fit. This process enabled the investigator to extract themes from the text to identify certain concepts related to stress and/or coping with stress that are recurrent throughout the data but may be expressed differently by different people.
Secondary analysis is a form of research in which the researcher takes previously collected and analyzed data from one study and reanalyzes the data for a secondary purpose (LoBiondo-Wood & Haber, 2006). Secondary analysis can involve the use of single or multiple qualitative data sets, or mixed qualitative and quantitative data sets. The approach may either be employed by researchers to re-use their own data, or by independent analysts using previously collected qualitative data sets (Heaton, 1998). Limited opportunities for conducting primary research and costs of qualitative work have prompted researchers to use data available to them. It has been suggested that secondary analysis is a more convenient approach for particular groups of researchers, including students (Heaton).

*Research Design - Original Study*

The original Mexican-American Type 2 Diabetes Focus Group study used a design that was qualitative and descriptive in nature in order to describe those factors that facilitate or hinder diabetes self-management programs (Vincent, et al., 2006). Specifically, the preferences and recommendations from the study participants were used to elicit suggestions to develop culturally competent diabetes self-management programs. A moderator’s guide was developed for use in conducting the 90-minute focus group sessions. The utilization of the focus group method for the original study was optimal, because the focus group format is well suited to collecting information from underserved populations, such as poor or ethnic minorities (Benavides-Vaello, et al., 2004). Oral communication through personal conversations is preferred and considered to be more
personable, respectful and congruent with the Mexican-American culture rather than data collection through written surveys (Benavides-Vaello, et al.).

Sample

The sample for this study consisted of Latino men and women with type 2 diabetes ($N = 14$) ranging in age from 27 to 73 ($M = 53$) who were interviewed in the original Mexican-American Type 2 Diabetes Focus Group study (Vincent, et al., 2006). Data from three of the four patient groups in the original study was used for this study. The patient groups used were: the English speaking women’s group and the English and Spanish speaking men’s groups.

Sample - Original Study

Participants of the original Mexican-American Type 2 Diabetes Focus Group study were Latino men and women with type 2 diabetes ($N = 20$) and their caregivers ($N = 20$) who attended a community health clinic in a large metropolitan area of the Western United States. Eligible participants in the original study were between the ages of 18 and 70 years. Patient participants had to have been diagnosed with type 2 diabetes for at least one year, and had to self identify as Latino, Hispanic, Chicano, Mexican, Mexican-American, or American of Mexican decent. Family caregiver participants could be of any ethnic background. Care giving for a person with diabetes was defined as providing physical, emotional, and/or financial support such as transportation, meal preparation, and assistance with medication. Participants were assigned into one of six focus groups, each lasting approximately 90 minutes. Four of the focus groups consisted of people diagnosed with type 2 diabetes and the other two were composed of family caregivers.
The four patient groups were subdivided into two groups of men and women. The groups were further subdivided by preferred language, with two thirds of the total number of participants preferring to participate in English speaking groups. Fifty-five percent of the patient participants had an eighth grade education. Forty-five percent had completed the twelfth grade. Income ranged from < $20,000 in 63% of participants to > $40,000 in 6% of participants. Eighty-four percent of the participants were married, 16% were widowed, and none were single or divorced. Latino ethnicity was ascertained by asking potential participants if they self-identified as Latino, Hispanic, Chicano, Mexican, Mexican-American, or American of Mexican ethnic background (Vincent, et al., 2006).

Protection of Human Subjects

This secondary analysis of the Focus Group Study was reviewed and approved by the IRB of the University of Arizona Health Sciences Center of the University of Arizona. Participant confidentiality was maintained through de-identified computer summaries of raw data from the focus group interviews.

Protection of Human Subjects – Original Study

The original study, the Mexican-American Type 2 Diabetes Focus Group study, was reviewed and approved by the institutional review board (IRB) of the University of Colorado Health Sciences Center, of the University of Colorado, on July 8, 2003. Permission from the researcher of the original study was obtained to conduct this secondary analysis.
Data Collection

Data collection for this study was obtained by secondary data analysis. Three of six de-identified transcripts from the original study were analyzed. The three transcripts chosen for analysis were the three patient group transcripts that were available. The three transcripts were from focus group interviews from the original study that were audio taped and transcribed. The three groups were: the Spanish speaking men’s group (3 subjects), the English speaking men’s group (2 subjects), and the English speaking women’s group (9 subjects). Transcripts were reviewed and analyzed for content by the investigator, and the emerging findings were reviewed with the primary investigator of the original study periodically to ensure the credibility and accuracy of the interpretations.

Data Collection – Original Study

Data collection for the Mexican-American Type 2 Diabetes Focus Group study was accomplished by team members’ observations, field note collections, and tape recordings of the focus group sessions, which were facilitated by a bilingual, Latina team member. A moderator’s guide was developed for the conduction of the focus group sessions by two members of the study team. The guide was then reviewed and approved by the entire research team. The expertise of the study team members was ensured by the principal investigator’s (D.V.) clinical expertise with Mexican-Americans with type 2 diabetes. The co-investigator (L.C.) provided expertise in focus group methodology and question development and had worked with the Mexican-American populations for more than 10 years. The focus group moderator (L.Z.) was experienced in working with
Mexican-American focus groups, and (J.S.) a bilingual and bicultural master’s prepared nurse practitioner added clinical and cultural expertise (Vincent, et al., 2006).

The open-ended interview questions from the Moderator’s Guide were as follows:

1. What makes it easier for you to take care of your diabetes?
2. What makes it hard or challenging for you to take care of your diabetes?
3. What can you tell me about being Latino and having diabetes? Is there something different or special in terms of the culture or the family?
4. If a program could be development that was designed especially for Latinos with type 2 diabetes, what would it look like?
5. What about using technology such as videotapes? What else would you like in a program?
6. What are your recommendations for getting Latinos involved in such a diabetes self-management program? Consider everything that has been said tonight. Is there anything that anyone would like to add?

Team member debriefing sessions took place immediately after each focus group and again at subsequent team meetings in which the accuracy of the transcripts was verified. At the debriefing sessions, the focus group interview content was read and reviewed by the research team members looking for symbolic domains of meaning, within domains, and relational patterns and themes. The researchers developed codes from the focus groups and met to discuss code definitions and the application of codes to all focus group transcripts. Code families were then developed to cluster similar codes and address the research questions. Then consensus was reached on the refinement of
categories and themes. All members of the research team read and approved drafts of the transcripts. Then the transcripts were imported into Atlas/Ti software. Analysis of the demographics was conducted using SPSS version 11.5 (Vincent, et al.).

Instruments

With the secondary data analysis used in this study, the investigator was the primary instrument for data collection, performing content analysis of session transcripts. No other instruments were necessary. The data collection instrument for the original study was the Moderator’s Guide.

Data Analysis Plan

For the purposes of this study, the data from the Mexican-American Diabetes Type 2 Focus Group study were used to meet the specific aim of this study which was to explore perceived stress and coping styles in Mexican-Americans with type 2 diabetes. A secondary data analysis was performed specifically with the use of content analysis. The most suitable unit of analysis is the use of whole interviews or observations that are large enough to be considered a whole, but small enough to keep a central meaning during the analysis process (Graneheim & Lundman, 2004). Creating categories is the core feature of qualitative content analysis. A category is a descriptive level of content that can be seen as an expression of the understanding of the content of the text. Finally, a theme, which is a thread of an underlying meaning seen throughout the content, is developed (Graneheim & Lundman). Hsiu-Fang and Shannon (2005) agree that content analysis is a method primarily used in qualitative research. They describe content analysis as a research method used for the subjective interpretation of the content of text data through
systematic classification with the use of coding, which leads to the identification of patterns or themes (Hsiu-Fang & Shannon).

*Intercoder Reliability*

This researcher's process of establishing intercoder reliability for this secondary analysis study involved the independent identification of thematic units, themes, and subcategories. Reliability is concerned with consistency, accuracy, precision, stability, and reproducibility. A reliable measure is one that can reproduce the same results if the behavior is measured again using the same process (LoBiondo-Wood & Haber, 2006, p. 345). Selecting every tenth thematic unit, the researcher systematically selected 10% of the thematic units from the total 348 units found in the content analysis for use in establishing intercoder reliability. The thesis chair and a thesis committee member experienced in content analysis independently coded the same thematic units into subcategories and categories to evaluate consistency with the researcher's coding. The thesis chair and committee member used category and subcategory names and definitions that the researcher provided. Using the definitions the coders matched each thematic unit with a category or subcategory. To establish the reliability of the coding, the researcher calculated percent agreement between the researcher coding and the two other sets of coding by dividing the number scored correctly by the two other coders by the total number of thematic units evaluated. A predetermined level of 0.80 was used as the level of agreement of reliability (LoBiondo-Wood & Haber, 2006, p. 346) of the two other coders' results and those of the researcher. Coding of the data met the predetermined of acceptable intercoder reliability with results of 0.85 and 0.80 respectively.
Trustworthiness

Guba’s model describes four general criteria for evaluation of research from a qualitative perspective. Those criteria are: credibility, transferability, dependability, and confirmability (Krefting, 1991). These criteria were used to assure the trustworthiness of this study.

Credibility is an assessment of the believability or credibility of the research findings from the perspective of the members or study participants (Krefting, 1991). In the original study credibility was checked by all research team members meeting immediately after each focus group and at subsequent team meetings to assure that the accuracy of the transcripts was verified. For this study, credibility was accomplished by peer debriefing of this researcher’s thinking process and discussion of findings with the thesis chair.

Transferability refers to the degree that findings can be transferred or generalized to other settings, contexts, or populations (Krefting, 1991). The report of this study’s results from 14 interviews with Mexican-Americans with type 2 diabetes provided a varied and thorough description of representative of people with diabetes.

Dependability is comparable to reliability, that is, the consistency of observing the same finding under similar circumstances (Krefting, 1991). For this study, dependability was evaluated by the thesis chair’s review of the data from interview, through theme analysis, the development of themes and subcategories, assignment to major categories, and reporting of final results.
Confirmability refers to the extent that the research findings can be confirmed or corroborated by others (Krefting, 1991). An audit trail was made available to the thesis chair to help assure that the interpretation of data reflected the meanings gleaned from the original study with Mexican-Americans with type 2 diabetes.

The findings of the study were reviewed, clarified, and approved by the principal investigator’s University of Arizona College of Nursing Thesis Committee.

Summary

This chapter gives a description of the methods that were used in this qualitative research study. A qualitative research design using a secondary data analysis of open-ended interview questions from the original Mexican-American Type 2 Diabetes Focus Group study was used. The specific aim of this study was to describe perceived stress and coping styles in Mexican-Americans with type 2 diabetes. This information may provide information to health care providers and people with diabetes and may provide a basis for further study of perceived stress and coping of Mexican-Americans with type 2 diabetes.
CHAPTER FOUR

RESULTS

Chapter Four includes an overview of the results of data analysis of Mexican-Americans with type 2 diabetes interviews, summaries of content analysis of the Mexican-Americans with type 2 diabetes interviews in relation to the research questions, operational definitions of categories and subcategories, and examples of thematic units’ characteristic of the themes in each subcategory.

Overview of Results of Interviews

Using content analysis, 348 thematic units relevant for the concept of stress and coping were extracted from three focus group interviews with Mexican-Americans with type 2 diabetes. Commonalities among thematic units were further analyzed and were grouped under five main categories derived from interview questions from the original study (Vincent, et al., 2006). Under the concept of stress three categories emerged. Those categories are: ‘Burdens of Managing Disease’, ‘Family and Culture’, and ‘Feeling Bad’. The two categories that emerged under the concept of coping are: ‘Internal Influences’ and ‘External Influences’. The concepts and categories are outlined in Table 1.

Further analysis of the thematic units resulted in seventeen inductively derived researcher-developed subcategories. Results of the analysis are presented for each of the five categories and seventeen subcategories.
<table>
<thead>
<tr>
<th>Major Concepts</th>
<th>Categories</th>
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<tbody>
<tr>
<td>Stress</td>
<td>Burdens of managing disease</td>
</tr>
<tr>
<td></td>
<td>Family and culture</td>
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<tr>
<td></td>
<td>Feeling bad</td>
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<tr>
<td>Coping</td>
<td>Internal influences</td>
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<td></td>
<td>External influences</td>
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</table>
Concept: Stress

The bad parts of diabetes were a dominant part of the discussion in the focus group interviews. The concept of ‘Stress’ consisted of three categories: ‘Burdens of Managing Disease’, ‘Family and Culture’, and ‘Feeling Bad’. Definitions for the concept of ‘Stress’ and categories are provided in Table 2. Participants used words such as stress, burden, and challenges frequently. By far, the bad parts of diabetes were the topics participants talked about the most. The largest number of thematic units contributed to the subcategories under the concept of stress. Specific challenges for Latinos elicited a lively discussion among the participants. These discussions helped explain the perceived stress that Mexican-Americans with diabetes deal with on a daily basis. The categories, subcategories and themes under the concept of stress are outlined in Table 3 and definitions are provided in Table 4.

Category 1: Burdens of Managing Disease

The category of ‘Burdens of Managing Disease’ consists of four subcategories: ‘Things Supposed to Do’, ‘Lack of Information and Resources’, ‘Financial Challenges’, and ‘Medications’. (See Table 3.) This category contains the subcategories that provide details from the participants about their perceptions of the most challenging aspects of living with diabetes.

The subcategory of ‘Things Supposed to Do’ when you have diabetes contains the themes: ‘Finger Sticks and Blood Sugars’, ‘Exercise’, and ‘Diet’. (See Table 3.) The theme ‘Finger Sticks and Blood Sugars’ indicated that having to do daily or multiple daily finger sticks to monitor blood sugars were very distressful for most participants. In
### TABLE 2. Definitions of Concept of Stress and Categories

**Concept:**

*Stress* – Perceived tension or strain in an individual’s life related to their physical, mental, emotional and environmental surroundings.

**Categories:**

*Burdens of Managing Disease* – Perceived challenges borne with difficulty for people with type 2 diabetes such as performing daily finger sticks, eating healthy and financial issues.

*Family and Culture* – Influences of family, friends and culture in an individual’s life that can be perceived as challenging in dealing with type 2 diabetes.

*Feeling Bad* – Physical feelings such as fatigue, nausea or pain, and psychological feelings such as anger, frustration, or embarrassment that may be experienced by people with type 2 diabetes.

*Internal influences* – The ability of an individual to positively influence the effects of type 2 diabetes on their lives such as expressing positive thoughts, exercising, and creating strategies to help others, especially new diabetics.

*External influences* – Outside sources that may positively influence the effects of type 2 diabetes on individuals with type 2 diabetes such as educational seminars, financial support and help from family and friends.
<table>
<thead>
<tr>
<th>Categories</th>
<th>Subcategories</th>
<th>Themes</th>
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<td>Burdens of Managing</td>
<td>Things Supposed to Do</td>
<td>Finger sticks and Blood sugars</td>
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<td>Disease</td>
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<td>Exercise</td>
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<td>Lack of Information and Resources</td>
<td>Diet</td>
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<td>Financial Challenges</td>
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<td>Medications</td>
<td>Hassles of getting Meds</td>
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<td>Family and Culture</td>
<td>Traditional Foods</td>
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TABLE 4. Definitions of Subcategories

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<th>Description</th>
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<tbody>
<tr>
<td>Things Supposed to Do:</td>
<td>Things that people with type 2 diabetes have to do to take care of themselves that may cause them stress, such as: multiple daily blood sugar finger sticks, regular exercise, and eating a healthy diet.</td>
</tr>
<tr>
<td>Lack of Information and Resources:</td>
<td>Inadequate education and opportunities for education that a person with diabetes might experience</td>
</tr>
<tr>
<td>Financial Challenges:</td>
<td>The additional costs that a person with type 2 diabetes may incur to manage their disease, such as: healthy foods, medications, and medical supplies.</td>
</tr>
<tr>
<td>Medications:</td>
<td>The oral and injectable medications needed to manage type 2 diabetes.</td>
</tr>
<tr>
<td>Traditional Foods:</td>
<td>Foods common to a particular culture such as: tortillas, chills, and beans in the Mexican-American culture.</td>
</tr>
<tr>
<td>Stress from Family:</td>
<td>Issues within a family that patients feel cause them anxiety and depression, especially common in the Mexican-American culture where family is of utmost importance.</td>
</tr>
<tr>
<td>Cultural Beliefs:</td>
<td>Those things within a group of similar inheritance that shape thoughts and behaviors based on traditions.</td>
</tr>
<tr>
<td>Physical:</td>
<td>Pertaining to the human body</td>
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<tr>
<td>Psychological:</td>
<td>Pertaining to the mind.</td>
</tr>
</tbody>
</table>
an answer to the interview question, “What else is part of the misery?” examples of responses were; “checking your blood sugar” (B5) and “poking my finger, I think everyone hates that” (B1). were examples of responses. There were discussions about the availability of new equipment that would eliminate having to do finger sticks. “Don’t they have a new tester where they just poke you like that, and it just…I’d like to have one of those. Finger, it gets old after a while” (A10a). One woman expressed the sentiments of many: “I wish there was an easier way that didn’t hurt so much” (B138). Balancing the blood sugar was a problem for some. “Yeah, trying to find the balance where you can have, it’s either too high or too low. Trying to find a balance. I think that was kind of the roughest thing for me” (BA6a).

Knowing they should be exercising regularly seemed to haunt participants. The theme ‘Exercise’ included the following examples of thematic units: “I fall short on that one” (A22), and “I used to go, I used to go a lot, and I know I should go more” (B108b). When talking about the importance of exercise, the women voiced concerns: “It’s not safe to walk by yourself anymore” (B342). “Yeah, you can’t” (B343). “You have to take guns and everything else (laughing)” (B344). “Yeah, it’s a dangerous world out there” (B345). Walking can be an affordable form of exercise, but unfortunately this may not be an option for many of the participants because of the safety factors involved. Lack of safe and convenient places to walk may add to the challenges of walking as an affordable means of exercise. On a positive note, there were also life enhancing things about exercise that participants experienced. These will be discussed under the coping concept.
Many participants discussed the challenges of maintaining a healthy diet, providing the theme of ‘Diet’. “I started out pretty good. I lost a lot of weight, and then doing real good. Eating a lot of, lot of salads and a lot of turkey, and then birthday cake came around, and I kind of fell off the wagon” (B27a). “Well it’s nice to learn stuff---- cook. But that kind of gives everybody an idea. You get flustered” (B404). Sometimes it was lack of knowledge that added to the challenge. “They never told me that fried stuff--- and I know they do” (B268). “Yeah, you also gotta watch what foods you mix. Like last Thanksgiving, I didn’t know you weren’t supposed to mix potatoes and gravy and corn, because all turns into sugar” (B52).

Under the subcategory of ‘Lack of Information and Resources’ participants often expressed that they were not given all the information they needed to proceed with a healthy lifestyle once they were told that they had diabetes. One woman specifically felt like she was in the dark. “I know. When I was diagnosed with diabetes they told me I was a diabetic, they gave me my pills and stuff and sent me home. I was like in the dark. What do I do here? They didn’t tell me what foods to eat, what foods not to eat. I was completely in the dark. I have a friend that is a diabetic, and she’s the one that has helped me” (B262a, b, and c). One man discussed his frustrations with the explanations he received at the visit where he was first told he had diabetes. “Nah uh. I didn’t spend too much. They just told me I had it and they gave me some pills” (A17). Some interesting discussion related to lack of information, such as over the counter cough medicines. “Well, I was like why am I feeling lie this, I haven’t eaten nothing? Turned out it was the medicine (cough medicine) that was causing it” (B118).
In the subcategory of ‘Financial Challenges’, the general theme expressed was that the costs incurred in living with diabetes were overwhelming for a majority of the participants. The costs of medical supplies, healthy foods, and recreation center fees were the main concerns. One of the women’s conversations went as follows: “Yeah, cause I can’t afford one (blood glucose machine)” (B23), “Yeah, but it is expensive (blood glucose machine)” (B24), “Yeah, but what’s expensive too is the strips” (B26), and “I was going to say, it’s the strips are what’s expensive” (B27). Fresh fruits and vegetables, the staples of a healthy diet are more expensive foods than others. Low-income families usually would struggle with the challenges of eating a healthy diet. One woman expressed her frustration this way: “Especially not a lot of people have a lot of money to buy some of the foods that they are supposed to eat” (B260). Recreation center fees were another challenge for some of the women who had the tendency to prefer this indoor form of exercise. “Well maybe you can get some kind of pass to the rec center for people who have diabetes, because cost is a big deal (agreement in the background)” (B347). “Sometimes you don’t have the money, you can’t go” (B348). “If you can’t pay for the membership, you can’t” (B349). “That’s expensive ($200/month for rec center fee)” (B352).

The ‘Medications’ subcategory was divided into two themes: ‘Hassles of Getting Meds’, and ‘Worries About Taking Meds’. The ‘Hassles of Getting Meds’ centered on the use of a mail order system in which prescriptions had to be written for a three month supply and arrangements to get supplies had to be made weeks in advance of needing them. For some participants each time they needed to order their medications they had
difficulties of one type or another. One woman explained the entire process of getting her prescriptions as: reaching the doctor, sending papers with signatures back and forth, receiving a 90 day supply of medicine in the mail, and then having to repeat the process over before another 90 days was up. More women replied: “It is a hassle” (B131), “It’s hard to get the medication, It’s hard” (B255), “It’s getting worse instead of better” (B256), “Yeah, but you have to wait. You have to order three months at a time” (B258a).

‘Worries About Taking Meds’ were expressed by both the men and women. Concerns about taking medications ranged from medication interactions, medication side effects, and avoiding medications with sugar in them. “Maybe it wouldn’t be if you only had one thing. Like, I have high blood pressure, I have the high cholesterol and I’m a diabetic, so it’s three things there” (B185). “You take a lot of pills and you say, well, can I mix these together? and doctor says ‘yeah, that’s fine’. And then you go hear from somebody else, you know, you shouldn’t mix that” (B181). “Nightmares” (B182). “And then I am taking pills for the prostate, high blood pressure, and depression” (C57). The men especially had concerns about the side effects of the medications. “That’s the problem. With so many illnesses that you have, well at some point your liver is going to explode” (C61). “That’s the problem. What I told you before, if you are sick, ill with four diseases, and they give you three pills to take, and you take three and three and three, well your liver will explode after a while” (C163). “There’s a greater chance that it will explode with the pills” (C164). “Well, I think so, too many chemicals” (C166). “Simply put, every hour and a half I have to take a pill. It’s like seven pills. From eight in the morning until I go to bed, it’s seven pills, and that’s every day. In the morning my
stomach is very (almost raw?) yes, that’s right, like when something is raw, or who knows what, with your stomach” (C167 and C169). Some of the women had comments about sugar in cough medicines; “You also have to watch what kinds of medicines you take too. There’s a diabetic cough medicine now” (B112). “But I still, like the cough medicine, I didn’t know, so I went in and asked the pharmacy that day if I could take any of it, and he told me that the sugar-free medicine” (B186).

In summary, the ‘Burdens of Managing Disease’ were frequent and openly expressed by the participants. Perceived frustration levels appeared to be high as participants struggled on a daily basis to find balance in living life with a complex chronic illness.

Category 2: Family and Culture

The category Family and Culture consists of three subcategories: ‘Traditional Foods’, ‘Stress from Family’, and ‘Cultural Beliefs’. (See Table 3.) Stress in dealing with family issues created a lively discussion. From the discussions it is clear that traditions and family are at the heart of the Latino culture.

There was an interesting mix of comments among the men and women participants in the ‘Traditional Foods’ subcategory. Some participants were willing to make changes in their diets, but some were not. Foods such as manteca (grease), beans, chilies, tortillas and alcohol intake were the main dietary topics among both the men and women. “Cause everything’s got manteca and everything in it. Grease” (A40). “Alcohol and food. Eating habits” (things that a new doctor coming to town should know about Latinos) (A44). “Yeah, yeah, and the alcohol. A lot of Latinos probably alcoholics too”
(A42). A man says his typical dinner is still the same. “Probably the same thing we still eat now. We still eat our beans, chili, tortillas” (A46). The women discussed their challenges also. “And as far as the cultural thing, there are different foods that we grew up with that we eat and even though we’re not supposed to eat them, for instance, sopapillas, (mmmmm- from the crowd)” (B204). “BBQ sauce you can’t have because there’s too much sugar in there” (B206). “Because, I love corn tortillas, but they told me I couldn’t have any. That they were worse than the flour tortillas” (B223). “Yeah, cause corn turns into sugar” (B226).

The subcategory of ‘Stress from Family’ got to the heart of the study in the area of perceived stress in Mexican-Americans with type 2 diabetes. The women, by far, out numbered the men with concerns about family and how this affected their stress levels. Several women expressed themselves very clearly by saying, “We are a stressful (very) people” (B328a and B332b). “Yeah I think our nationality is very…we’re very big hearted. I’m not saying we’re very big hearted people. We worry about our family. We worry about our children. I mean we are very stressful” (B202a, b, and c). The large size of families and the importance of every family member was a factor for the women. “Cause when there’s that many people in the family, there’s something going wrong with somebody at all times, you know (laughing)” (B203). “Oh yeah, (in answer to the question – “Does family makes a big difference on the stress part?”) Cause you can’t say no” (B201). “Because in Latino families there is a lot of people in your families, and there’s a lot of people that are doing different things in your families, that get you all worked up” (B191). “You got grandkids, you got nephews that need you for this, that and
the other thing. Pretty soon you are all just…” (B193). The men discussed issues surrounding family gatherings or how family members affect their lifestyles. “Discipline again I guess (talking about food at family gatherings). You got to say no” (A52). “Tell them (family members) to tone it down on weekends and holidays” (A54).

Under the subcategory of ‘Cultural Beliefs’ there was a detailed discussion by the men’s’ groups. The English speaking men mentioned *curanderas*. They made fun of anyone who used traditional remedies. These men did not know of any traditional remedies that were effective for diabetes. “Well we don’t got no *curanderas* in our neighborhood (laughing)” (A51). The Spanish speaking men were very clear that they believed in *sustos*, a severe fright or emotion that may cause diabetes. Several of the men explain their belief. “I understand that it (cause of diabetes) comes from *sustos*. Do you, who knows if you remember, or who knows if there was a time that you got really scared or that somebody scared you. Do you remember? When you were a kid, I’m referring to when you were a kid, that somebody scared you a lot? Well sometimes your people do bad things, they get, if you are working, or if you aren’t working and they make a noise so that you get frighten right, well that is the thing that I do, that I blame, that could have happened to me, the frights” (C3). “I used to get scared a lot, a lot. Even there at work, he came…and he…was coming straight at me and then…sometimes….It was a mechanic that scared me. He scared me like this. And so I flinched real bad. So I told the mechanic that he shouldn’t have scare me that way because…because I didn’t tell him how bad he scared me. And see what has happened to me? And I say that’s how it happened, man. From the frights.” (C6). A Spanish speaking man also believes that
contaminants in food or using the microwave can cause diabetes. “Yeah, I say so (agrees with woman that fertilizer causes cancer and other diseases). Later, you go, and you go home and instead of …you turn on the microwave and radiation. So much, so much” (C2a and b).

In summary, the category of ‘Family and Culture’ revealed topics that came from the heart and soul of the participants. With deep ties to family and tradition the Mexican-Americans with diabetes admitted to having many struggles and perceived areas of stress in their lives.

Category 3: Feeling Bad

The category ‘Feeling Bad’ consists of two subcategories: ‘Physical’ and ‘Psychological’. (See Table 3.) Feeling bad from diabetes contained the largest number of thematic units in the study. There was a general negative theme expressed about having diabetes. When asked, “Can you think of anything good about having diabetes?” the reply was, “Well, there isn’t anything good for me. Bad things, yes” (C21). A few women expressed their feelings when they were initially diagnosed with diabetes: “Yep, everything about you just went poof” (B72) and “now had to do something daily to take care of yourself” (B73b). Under the subcategory of the ‘Physical’ ways the participants felt bad were symptoms from blood sugars going high or low. Some of the quotes that demonstrate this are: “symptoms, dryness, cotton mouth, etc.” (A3a), “blurred vision sometimes” (A14a), “low blood sugar really makes me sick” (B169a), “if blood sugar 55, gets confused” (B38), and “tired, drained, can’t get out of bed” (B65). The feeling of being tired was expressed by many of the women. “You gotta watch out, and the gravy,
flour, turned right into sugar. Boy did I go into a sleep” (B53). “Sometimes I am just
tired, drained; I can’t get out of bed” (B65). “That’s what makes you go to sleep. If you
have too many of those (carbs)” B80).

The complications of diabetes were a concern for most participants. Some of the
sentiments voiced were: “Have to watch feet, they may not heal well after surgery”
(B110), “with diabetes everything gets sick, kidneys, heart, vision” (BC49), “you’re
always thinking if you go out and fall down, they are going to cut your hand or foot off”
(C94b).

In the ‘Psychological’ ways of feeling bad subcategory some of the emotions
expressed by participants were feeling mad, angry, irritated, and embarrassed. “Makes
mad when girlfriend keep reminding if I’m eating something like real sweet and stuff”
(A57 and 58). “I get angry, I get mean, My kids tell me” (B42). “Yeah me too, I get
irritated when my sugar is high” (B43). “When I’m hungry I get angry, and I know then
that I have to go eat. And then I’m ok”(B46). The men were the only ones who discussed
being embarrassed about having diabetes. Perhaps, they see having diabetes as a
weakness. “Anyone could get diabetes, but you are still embarrassed” (C146).

There was a direct link between perceived stress and feeling bad about diabetes.
Women had more comments and concerns about stress than the men. In general, the
women felt like stress played a major role in their diabetes. When asked what a doctor
should be told about stress one woman replied: “That it plays a number on your sugar
levels. You know, going up and down, so sometimes it goes up, sometimes it goes down,
so I don’t know if it has something to do with your emotions or what” (B188a and b).
When asked by the facilitator, “when you talk about stress, is it the stress of having diabetes?” All of the women answered “no”. On woman explained it further; “whole life, and get tired of poking yourself” (B68). There was frustration on the women’s part because their providers did not address the issue of stress with them. “They don’t give you nothing for stress or they never talk to you about stress” (B59). “I know, sometimes I feel like that too, and I have to go tell my doctor, hey, I need something for stress, I says, I’m tired. I don’t feel good. And I tell him, I need something done, cause I says, I just don’t feel good. And that’s when he gives me, he says Ok, Ok” (B64). Another woman talked to her doctor about feeling tired and not wanting to get out of bed. “Actually, he said it was just everything, stress, everything. Getting used to the diabetes rolled into one” (B66a). The women also agreed that they had more stress than their husbands. Husbands needed to be educated about this, and in fact the husbands were the cause of the women’s stress a lot of the time. One woman explained her feelings: “OK, and I’ll admit, husbands do stress us out, right? (laughing) I think we should like meetings with the husbands too, and explain what stress causes to a diabetic. You know, and I’ll even tell my husband, God, you are stressing me out. Leave me alone. You are causing my sugar to go up. You know. You are always stressed out. You’re stressed out for anything. Well they got to understand, you know women are a lot different than men. They don’t get stressed out like a woman does” (B328b, c and d).

Both the men and women discussed feelings of depression directly related to being diagnosed with diabetes. One man said “No, well, with this disease, you aren’t happy, because you walk around thinking if you go out and you fall down and hurt
yourself, they are going to cut off your hand or your foot. You can’t be happy anymore” (B94a and b). Having to do daily blood sugars and close scrutiny of blood sugars caused depression for some women. “I think another thing that depresses a person on diabetes too, is running your blood sugar constantly” (B158). “If you run your sugar, even three times a week, you don’t get as depressed being a diabetic because there could be one day you run it and it’s 140 and you get all excited, the next hour, two hours you run it it’s 207. And I’ve found I’m sure diabetes really depressed me cause I like eating sweets (B160a and b).

In summary, in the ‘Feeling Bad’ subcategory the concerns associated with perceived physical and psychological stress were many and varied. Participants frequently expressed their frustrations in dealing with stress because they felt that it had a direct correlation with their blood sugars and overall wellbeing.

Concept: Coping

The two categories that emerged from the content analysis relating to the concept of coping were ‘Internal Influences’ and ‘External Influences’. The categories, subcategories and themes from content analysis for the concept of ‘Coping’ are outlined in Table 5. Even though participants uncovered many negative aspects of having diabetes they also began to make suggestions on what things they could do themselves, and what their family and their communities could do to help them cope successfully. Overall, the men lead the way in making suggestions for coping. It was discovered that with the utilization of both internal and external influences many participants voiced optimism and hope for the future.
TABLE 5. Categories, Subcategories and Themes from Content Analysis for the Concept of Coping Related to Perceived Stress and Coping in Mexican-Americans with Type 2 Diabetes

<table>
<thead>
<tr>
<th>Categories</th>
<th>Subcategories</th>
<th>Themes</th>
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<tbody>
<tr>
<td>Internal Influences</td>
<td>Strategies to Handle Burden for New Diabetics</td>
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<tr>
<td></td>
<td>Exercise</td>
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<tr>
<td></td>
<td>Taking Better Care of Self</td>
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<td></td>
<td>Positive Thoughts</td>
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<tr>
<td>External Influences</td>
<td>Education</td>
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<td></td>
<td>Help with Expenses</td>
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<td></td>
<td>Provider Availability</td>
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<td></td>
<td>Supportive Relationships</td>
<td>Family and friends</td>
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<td>Others with diabetes</td>
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Category 4: Internal Influences

This category of ‘Internal Influences’ consisted of four subcategories: ‘Strategies to Handle Burden for New Diabetics’, ‘Exercise’, ‘Taking Better Care of Self’ and ‘Positive Thoughts’. (See Table 5.) The definitions under the subcategory of ‘Internal Influences’ are presented in Table 6. ‘Internal Influences’ are described as those things that participants could do from within themselves to create positive outcomes in dealing with type 2 diabetes.

In the subcategory of ‘Strategies to Handle Burden for New Diabetics’ the participants had some proactive suggestions. One of the Spanish speaking men had a positive message for new diabetics. “No, well, tell them not to worry. That this you can live with this illness. I am going to tell you that we both have it, and I am doing ok” (C50). Another man had an important message to share. “I guess just to let them know that a person can live a normal life if they stay with the program you know. If they exercise and right foods, diet. I think it can be controlled by diet if it’s diabetes 2. In fact, like I said, I was taking the glucovance, two of them, and then I had to come down to less, cause I did go on a diet after the heart attack. I had to. The hard way” (A37). A man had some advice for a friend at work that had just been diagnosed with diabetes. “Yeah, a guy just came up to me a couple of weeks ago where I work. I know a lot of people up there. He just found out he had it. I just told him to make sure you don’t eat candy or a lot of sugar because you know, that will really cause a lot of damage. Try to find a balance. Keep it not too high, not too low” (A24a and b). When the facilitator asked if information should be withheld from new diabetics there was a consensus that education is very
TABLE 6. Definitions of Subcategories

*Strategies to Handle Burden for New Diabetics:* Ways in which an individual can use their own abilities to cope with diabetes when they are first diagnosed, such as: eating a healthy diet, obtaining adequate diabetes education, and taking medications prescribed.

*Exercise:* Ways in which an individual can use their own abilities to do physical aerobic activities such as: dancing, running, walking, and circuit training.

*Taking Better Care of Self:* Ways in which an individual can use their own abilities to live a healthy lifestyle with diabetes such as: eating better, exercising, and in general, taking care of yourself.

*Positive Thoughts:* Ways in which individuals can use affirming thoughts to keep themselves motivated and away from negative feelings about having diabetes.

*Education:* Ways to utilize outside resources to receive information about diabetes.

*Help with Expenses:* Resources available to individuals to help pay for the costs of having diabetes such as: medications, glucose machines, medical supplies, and recreation center fees.

*Provider Availability:* Access to healthcare providers for appointments or advice when needed.

*Supportive Relationships:* Positive influences and help from family and friends in dealing with the challenges of coping with diabetes.
important. “I don’t think it’s good to hold information” (B96).

The women discussed the importance of knowing about foods. “Yeah, that’s what I would educate. Tell them to be, read up a lot about what foods you shouldn’t mix. What foods you can have, and shouldn’t have” (B89a and b).

One woman made a few suggestions that stood out about blood sugar checks that may help those with diabetes cope better with this task. “You know, another thing you can do to is that I found that when you work you finger and it doesn’t hurt as bad. And I found that washing your hands, rinsing em out real good, it’s not as bad as with the alcohol, cause the alcohol it does it gets your skin hard, and you find that it doesn’t hurt as bad as when you use alcohol” (B154a and b).

A suggestion on how to educate new diabetics was valuable. “Maybe you should have, what do you call it, groups that come together, of people who are new diabetics and then you have educational groups of you know, of people that have been diabetic for a while, come to the new group of people and help educate them” (B263).

In the subcategory of ‘Exercise’ the Spanish speaking men had a lively conversation about the benefits of exercise in coping with diabetes. Participants suggested the use of walking, running, and dancing for exercise. “I walk” (C24). “I walk in the morning” (C25). “They say that walking is good for you, but it’s better to run. That you feel your heart beat harder. Between walking and running, I run three miles almost every day” (C26a and b). “That’s good, that’s good(dancing)” (C120). “That’s the truth, dancing is very good for those things (exercise)” (C121). “When it’s ugly out, snowing or something, I dance at home and I feel like I walked” (C124). The Spanish speaking men
discussed the benefits of sweating. “Yes. Because sweating, all the bad comes out. All the bad comes out. It’s just that it’s cold out right now. Sometimes in a park, when the sun is real hot, and inside the car, and I would sweat a lot, and I like that better” (C184). “It comes out, I think, with sweat, all the bad comes out of your body” (C188). “No, but you feel better (asked if sweating will make your diabetes go away). Because I do that too. When it’s hot outside in May, June, I put plastic bag on then a shirt and I go out running. When I come back even my pants are full of water, of sweat and you feel refreshed” (C189).

The women discussed going to the recreation center (machines), walking and swimming for exercise. “I go to the rec center, and they have this hard walking, and if you walk in there, what is it a half-hour, it’s like walking two hours when I go” (R108a). “Yeah, walk. It helps a lot” (C101 and C102). Exercising in groups was important to the women. “I think that if you exercise in a group it is better. I know I used to do it too” (B341).

The subcategory of ‘Taking Better Care of Self’ had the least number of thematic units contributing to it. Although this subcategory had the least thematic units, there were some profound and important topics discussed. One of the men summarized things nicely. “In a way it is. (answer to, Is there anything positive about having diabetes?) It’s kind of a I guess, an eye-opener, or awakening I guess. Few persons go through life and not really take care of their health and then one day you have to start dieting, and you have to start disciplining. Just start being more careful about what you do with your health. That’s the positive I guess” (A21a and b). Another man stated, “No, well I think
that having diabetes isn’t a good thing per se, but you know that it is an incurable disease. So, seeing that you have diabetes, you have to take care of yourself. Like the woman said, do more exercise and eat better” (C23).

In the subcategory of ‘Positive Thoughts’ one man expressed these supportive thoughts for others with diabetes. “No, well, tell them not to worry. That this you can live with this illness. I am going to tell you that we both have it, and I am doing ok” (C50a and b). Another man states, “One time they told me I had diabetes, and well, I have it, no way. I am going to move ahead. That’s all I said. I am going to forge ahead” (C51a and b). Diabetes does have a genetic component and is more prevalent in the Mexican-American population. One woman explained her reaction to this genetic component and being diagnosed with diabetes. “Yeah, I seen it all my life. So, when they told me I had it, it was not big deal, because I seen it in all my family. It wasn’t a surprise” (B75). In a discussion among the women about doing finger sticks, one woman expressed: “No, I tried it, and it doesn’t bother me” (B146). These positive approaches to managing the burdens of their disease may encourage these men and women and possibly others.

In summary, in the category of ‘Internal Influences’ the participants revealed ways that they could actively improve the negative effects of type 2 diabetes on their lives. In some discussions there was a general sense of encouragement and the expression of the importance of taking control of their own health for optimal outcomes.

Category 5: External Influences

The category of ‘External Influences’ addresses the importance of having the support of other people and how this may help the participants deal with the perceived
struggles involved in coping with type 2 diabetes. The subcategories are: ‘Education’, ‘Help with Expenses’, ‘Provider Availability’, and ‘Supportive Relationships’. (See Table 5.)

The discussion in the subcategory of ‘Education’ revealed that being educated had a major influence on the participants’ success of dealing with type 2 diabetes. Some participants emphasized that it would have been better if they had received more information when first diagnosed. The participants suggest that when people are newly diagnosed with diabetes they receive adequate information about their disease because this may enable them to avoid some of the pitfalls that the participants encountered. One man clearly expressed his frustration with his lack of knowledge. He believes that it was his lack of knowledge that led to the complication of having a mild heart attack recently. “Mild heart attack, and now I have seven stints in me. I didn’t have the knowledge of just how bad sugar really was for you and then my wife was telling she was watching Oprah, and they were talking about diabetes, and it was like sugar gets in your arteries, clogs up your arteries, sort of like when you make cotton candy, you know, and the sugar gets like that. You start doing that to your arteries. A little, too late you know? It’s important. Very important” (A27a, b, c, and d). When asked if he would withhold any information from a new diabetic about the disease another man answered: “No. It would be better for him to know everything, or you know, cause, maybe he won’t do the same mistake as you or me, whatever” (A34a and b). One woman had this suggestion about what information would be helpful to all new diabetics: “Probably just the education of the whole diabetic thing. Like what you should and shouldn’t eat, you know. I’m finding out cause I went to the
library and got a bunch of books, but other than that I didn’t know what to do” (B275 and B277).

In the ‘Help with Expenses’ subcategory participants discussed things that may help people with diabetes cope with the costs for supplies, medications and exercise programs. One man had this suggestion: “Medicaid will pay, they’ll go by your income and stuff. Because I’m on SS disability, and they went by that for the income and they says well Medicaid will pay for it and fine with me. So I just call them, when I am out of supplies, or getting close and they just send it” (B13a). The women had a discussion about insurance picking up the cost for exercise programs. “Then that way people who have to do exercise, can have a prescription and it wouldn’t cost them as much. You know, pay your ten dollar co-pay or whatever” (B359).

In the subcategory of ‘Provider Availability’ participants expressed the desire to have a timelier provider response to their needs. Participants suggest that having a provider of care available to answer their questions as they come up as being very helpful in coping more successfully with their type 2 diabetes. One woman expressed this need clearly. “I would like to see someone, like Brenda the caregiver, you know, when you need to, or when you want to instead of making an appointment and having to wait two or three weeks or whatever. Or having somebody there to talk to and advise you about things. You know like when you feel like you could use some advice or something” (B120 and B121).

Under the subcategory of ‘Supportive Relationships’ there are two themes: ‘Family and Friends’, and ‘Others with Diabetes’. (See Table 5.) Family has a major
influence in the Mexican-American culture. Even though there were only a few references to having support from family and friends, it was very much appreciated by the participants. “I have a friend that is a diabetic and she is the one that has helped me” (B262c). A man discloses, “I have a girlfriend. She tries to help. She’ll bring home diet sodas, instead of regular sodas. She’s changed all that and she’s trying to change the cooking I guess. I guess she’s trying to help” (A57).

People with diabetes can lend support and encouragement to each other. The participants made it very clear that they flourished when they received support from others with diabetes. The women especially were encouraged by the group idea for learning. One woman expressed the value of learning in groups this way, “This way if one person don’t know what to ask maybe the next person knows what it is and she’ll get the answer of a question that she didn’t know what to ask” (B282). Several women very profoundly expressed the importance of building relationships in the group learning process. “I think just group help. Relationship” (B363). “I think you develop relationships in a group, and it would keep you going for a while. Then you look forward to being there” (B364). The men also expressed interest in learning in groups. There is value in sharing ideas expressed by one man. “And so one can say, I’m feeling very good with this herb. Well, I am taking this” (C157).

In summary, the category of ‘External Influences’ revealed many ways in which people in the community, family members, and providers of care can have a positive impact on how Mexican-Americans with type 2 diabetes cope with their disease.
Summary

This chapter contained an overview of the results of the analysis of the 348 thematic units. The thematic units were analyzed considering the specific aims of the study: describe perceived stress for Mexican-American adults with type 2 diabetes, and describe how Mexican-Americans with type 2 diabetes cope with stress. Thematic units produced subcategories based on commonalities which led to categories that were grouped under the two main concepts of stress and coping. The discussion of results is summarized in each category.

The main conclusions derived from the secondary content analysis of thematic units from interviews with Mexican-Americans with type 2 diabetes are: Mexican-Americans perceive themselves as being very stressed people and having type 2 diabetes poses many challenges in their lives. Participants struggled with the burdens of managing their disease. They feel that their Mexican-American culture and their families are a major source of stress in their lives. Having type 2 diabetes makes the participants feel physically and psychologically bad on many occasions. Participants explained that there were many ways they could make things better for themselves such as: getting adequate education about their disease, eating healthy, exercising, and having positive thoughts. Participants revealed the ways that others were helping them cope, such as: healthcare providers being available to answer questions when needed and providing adequate education, insurance companies helping with expenses and family and friends being supportive.
CHAPTER FIVE
DISCUSSION OF FINDINGS

This chapter presents discussion of the results of this study in relation to the review of the literature. Implications for nursing practice, strengths and limitations of the study, and recommendations for future research are also presented. This chapter closes with a discussion of implications of the study regarding perceptions of stress and coping styles of Mexican-Americans with type 2 diabetes.

Relationship of Results to the Literature Reviewed

The purpose of this study was to describe perceptions of stress and coping styles in Mexican-Americans with type 2 diabetes. The specific aims were to: describe perceived stress for Mexican-American adults with type 2 diabetes and describe how Mexican-American adults with type 2 diabetes cope with stress.

Long term stress and its effect on blood glucose levels in people with type 2 diabetes may be related to behavioral responses to stress that affect self management, such as insufficient physical activity, poor diet, or difficulties with medication taking (Lloyd, Smith, & Weinger, 2005). The literature review revealed that people with diabetes face many challenges in managing their disease. Thorne, Paterson, and Russell (2003) were in agreement. Participants in their study reported being overwhelmed with the intensity of decision-making about self-care when they were first diagnosed with their chronic disease.

Participants in my study also voiced many concerns about the challenges of self-care and how it overwhelmed them especially when first diagnosed. Many participants
expressed their frustrations in having to face multiple stressful events in their daily lives and the challenges they felt in coping with it. The women especially discussed stress frequently. They felt that stress made their blood sugars fluctuate. At times they felt tired and got angry because of their stress. Sometimes they ate sugars because they could not tolerate the dietary restrictions they faced. The men talked about feeling angry, tired, and lazy because of stresses in their lives. Both men and women found the routine daily self-management activities to be frustrating. Many participants discussed feeling depressed about having diabetes and the depression made them feel tired. The depression made them want to avoid exercising or eating the right things. Many women wanted their doctors to give them medicine for stress because they felt they could not function in their daily lives due to the stress. They felt they could not take care of themselves or manage their disease.

Following dietary recommendations for people in the Mexican-American culture can be particularly challenging because many of their traditional foods such as tortillas, and refried beans are high in fat and carbohydrates. In my study, the participants reported that food restrictions had a major impact on their social interactions. Both male and female participants complained about food restrictions and the challenges they faced in dealing with the traditional foods served at their family gatherings. Several participants explained that in their families there were almost weekly gatherings for birthdays or baptisms. Some participants wished that family members would be more aware and sensitive to their dietary restrictions. Often times the foods that were served were carbohydrate laden and not particularly healthy for someone with diabetes. These
findings are supported by the literature. Wen, Shepherd, and Parchman (2004) found that diet may be a barrier for Mexican-Americans because many participants felt that making a change in their diet or attempting to make it healthier would require them to eat meals that were different from other family members. In addition, food is an important aspect of celebration and is a priority in the Mexican-American culture.

Confidence in one’s ability to manage diabetes and adequate knowledge may improve outcomes and decrease anxiety was reported in a study by Weerdt, Visser, and Veen, (1998). There was agreement in my study. Many participants discussed the importance of knowledge. Both the men and women expressed the importance of educating people newly diagnosed with diabetes. Many participants discussed regret that if they had received better or more information when first being diagnosed that they may have been able to avoid some of the bad outcomes they were experiencing. The importance of obtaining knowledge about diet, exercise and medications was mentioned throughout the interviews in this study.

In a study by Aranda, Castaneda, Lee, and Sobel (2001) results suggested that men and women did not differ significantly in terms of the rate of depressive symptoms, but they did differ in the source and domain of their stress. Women reported family and marital issues as significant sources of stress, whereas men reported more community and economic security related stress. In my study many women admitted that issues with their spouses, families, and extended family stressed them out. Family issues were their main sources of stress. In general, women expressed concerns about stress more frequently then the men in this study. When men did address stress, their stress was based more on
their reaction to being diagnosed with diabetes and how their lives had changed. They voiced emotions such as being embarrassed, angry, mad, and frustrated.

In reference to a study by Thorne, et al., (2003) in which participants with HIV/AIDS, multiple sclerosis and diabetes were interviewed there were multiple discussions on living with diabetes. Thorne, et al., found that people with diabetes thought that their physicians were generally not well informed about the real-life of living with their disease and tended to give impractical, text-book driven advice. Therefore people with diabetes sought out specialist physicians or diabetes educators who were more practical in their advice in dealing with real-life situations. In my study many participants recommended that classes and diabetes education be led by providers who specialize in diabetes education. Participants also suggested that, if possible, the educator be someone who has diabetes, leading to a better understanding of the challenges they were facing. Many participants expressed the importance of learning in groups. Both the men and women discussed the value of building supportive relationships in their learning groups, explaining that the human connection with other people with diabetes would help them cope with their situation.

The results of a study by Hunt, Pugh, and Valenzuela (1998) suggest that patients were trying to control their diabetes, but were unable to do so completely. Key factors influencing treatment choices were the belief in the power of modern medicine, the desire to act and feel normal, the desire to avoid physical symptoms, and limited economic resources. This study showed similar results. In this study both the men and women agreed that education played a major role in their success in coping with diabetes. Help
with expenses such as insurance paying for medications, supplies, and recreation center fees were discussed. Support from family and friends in helping them fit into the many social situations in which they were involved was suggested as being helpful.

Implications for Nursing

With over 20 million people diagnosed with diabetes in the United States, this disease and its complications have a major impact on healthcare and providers of care. This study informs healthcare providers and diabetes educators about the perceptions of stress and coping in Mexican-Americans with type 2 diabetes. With this information, diabetes educators and healthcare providers will be able to create more effective treatment plans and educational materials.

The participants in the study perceived stress in their lives originating from many different sources. Very clear sources of stress were identified such as: the day to day burdens of taking care of themselves, the lack of information and financial resources, the physical symptoms they endured from medication side effects and the ups and downs of blood sugar management, the challenges of diet, exercise, and the family and cultural issues dealing with traditional foods, stress, and certain beliefs about diabetes and health. There were many suggestions for coping with diabetes, such as: taking care of themselves with proper diets, exercise, and blood glucose control, thinking positively, and seeking proper education. Financial assistance, timely access to information and health care provider, and the support of family and friends were all suggested as effective coping strategies. As one participant explained, when he was first diagnosed, his approach was to “forge ahead and deal head on with this disease” (C51b). A few of the participants
expressed that diabetes makes people take better care of themselves by exercising, and
eating better.

Diabetes educators are a vital link between patients with type 2 diabetes, their
health care providers, and family members. The results of this study provides diabetes
educators and nurses with more information about stress and coping in Mexican-
Americans with type 2 diabetes, with potential to improve outcomes.

Limitations of the Study

Limitations of this study are linked to those of the original study. Those
limitations are, sample size and data collection occurring at only one community clinic
site. Also patient respondents were not asked about length of time since they had been
diagnosed with diabetes. Other limitations are based on the constraints placed on this
study due to secondary analysis. Due to its small sample size these results cannot be
generalized to all Mexican-Americans with type 2 diabetes.

Recommendations for Further Research

More research is needed on Mexican-Americans perceptions of stress and how
they cope with type 2 diabetes. Larger numbers of participants interviewed in more
locations across the country are needed. Future studies should consider interviewing
Mexican-Americans with type 2 diabetes over a longer period of time with multiple
interviews. More knowledge is needed regarding perceived stress and its physical and
Psychological effects on glucose control. Because people are living longer with chronic
illnesses, further study on stress and an individual’s reaction to it and how this affects
long term health would be valuable information in today’s healthcare environment.
Summary

This chapter provides a discussion of the results of the data analysis and the implications for nursing practice. Also included in the chapter are a review of the limitations of the study and recommendations for future research.
APPENDIX A:

HUMAN SUBJECTS APPROVAL FOR STUDY
16 February 2007

Kathy Jean Davis, Masters Student
Advisor: Deborah Vincent, Ph.D.
College of Nursing
PO Box 210203

RE: MEXICAN AMERICANS WITH TYPE 2 DIABETES PERCEPTIONS OF STRESS AND HOW THIS EFFECTS THEIR DISEASE

Dear Ms. Davis:

We received documents concerning your above cited project. Regulations published by the U.S. Department of Health and Human Services [45 CFR Part 46.101(b) (4)] exempt this type of research from review by our Institutional Review Board.

Exempt status is granted with the understanding that no further changes or additions will be made to the procedures followed (a copy of which we have on file) without the review and approval of the Human Subjects Committee and your College or Departmental Review Committee. Any research related physical or psychological harm to any subject must also be reported to each committee.

Thank you for informing us of your work. If you have any questions concerning the above, please contact this office.

Sincerely,

Rebecca Dahl, R.N., Ph.D.
Director
Human Subjects Protection Program

cc: Departmental/College Review Committee
APPENDIX B:

INTERVIEW GUIDE FROM ORIGINAL STUDY
Sample Agenda for Focus Groups 1-8

On Latino Experiences with type 2 diabetes in the Health and Social domains and preferred program components to provide culturally competent diabetes self-management (specific aims 1 and 2)

**TIMED AGENDA**

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<tr>
<th>Time</th>
<th>Topic</th>
<th>Method</th>
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<tbody>
<tr>
<td>10 minutes</td>
<td>Arrival and mingling of participants</td>
<td>Each person will receive a name-tag. The note taker will draw a picture of the seating arrangement and list the participants by number. While taking field notes, the note taker can then use numbers as shorthand for the participants' locations.</td>
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<tr>
<td>10 min</td>
<td>Food</td>
<td>Provided by Research Team to facilitate rapport building among participants and FG leaders</td>
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<tr>
<td></td>
<td>Introductions</td>
<td>➢ People will be seated.</td>
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<td>➢ <strong>Study Purpose</strong></td>
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<td>Diabetes affects the Latino community. Each person here has a different experience with the disease and what it means in his or her life. The purpose of this study is to find out how diabetes affects the health and social experiences of Latinos, and how doctors and nurses can work with the Latino community to provide better kinds of care to people with diabetes and their families.</td>
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<td><strong>Sample</strong></td>
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<td>All of the people here today have offered to help us (the research team) better understand the diabetes experience, since you are the experts who deal with the disease every day.</td>
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<td><strong>Informed Consent</strong></td>
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<td>All of you have been given a copy of the informed consent. Let me review this form. (review). Do you have questions? If you are willing to continue with this focus group, please sign the form.</td>
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<td><strong>Introductions</strong></td>
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<td>➤ Let’s go around the table and introduce ourselves.</td>
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<td>5 min</td>
<td>Agenda Setting</td>
<td>Let’s talk about why we’re here and what’s going to happen tonight. 1. I will introduce 5 topics that we will cover tonight. We will be asking about how good and bad parts of the Diabetes experience, what might make life better for diabetics, specific challenges for Latinos with Diabetes, components of a program designed especially for Latinos with type 2 diabetes, and organizational details such as how would a self-management program for Latinos be organized, who would teach it, and where would it be taught? 2. The goal is not to rush through the topics, but to spend as much time as we need to get an idea of your experiences and opinions about these topics. 3. We will stop after about 90 minutes. When we stop, we will pay each person with a $25 grocery store certificate to show our appreciation for your attendance and for sharing your lives with us.</td>
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<td>5 min</td>
<td>Ground Rules</td>
<td>Let’s set some rules for how we’ll conduct this focus group. I’ll list a few, then I want you to add to this list if there are rules you would like to set. 1. You are the experts. We invited you to come because we don’t know everything we need to know about diabetes and its management in Latino families. We can read all we want to in professional journals, but you are the front-line people who deal with this every day. 2. There are no right or wrong opinions. We aren’t looking for certain answers, and we don’t expect that everyone will agree. We can all accept a diversity of</td>
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<td></td>
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<td>opinions.</td>
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<td>3. Everyone's opinion is important. We don't want anyone to hold back. Each of you should have your opinions heard.</td>
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<td>4. Finally, sometimes people say things that are a little sensitive. We should all agree that nothing said in this room will leave the room.</td>
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<td>5. Now, are there ground rules you would like to have? (i.e., wait your turn to talk, no interrupting, no monopolizing conversation)</td>
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<td>15 min</td>
<td>Diabetes Experience</td>
<td><strong>The Good and Bad Parts of the Diabetes Experience</strong></td>
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<td>➢ Let's list on the flip chart all of the &quot;good&quot; things that are part of having diabetes, and all of the &quot;bad&quot; things that are part of having diabetes. What kinds of experiences have you had with diabetes? Probes:</td>
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<td>➢ What would you tell a new diabetic about what's it's like to have diabetes?</td>
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<td>➢ What wouldn't you tell a new diabetic about the experience of having this disease? Maybe some things are too discouraging to tell a new diabetic, or too personal? What are those things?</td>
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<td>10 min</td>
<td>What makes the DM experience better?</td>
<td><strong>The Facilitators of a Good Diabetic Experience</strong></td>
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<td>What do you think would make life better for diabetics? Think about the diabetics you know, and what might make their lives better.</td>
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<td>Probes:</td>
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<td>➢ Now think about your life. Is there something that would make the whole diabetes experience less challenging for you?</td>
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<td>➢ What about families? What can they do?</td>
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<td>➢ What about changing yourself? What</td>
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|          | **could the patient do to make life better?**  
➤ **What about the diabetic's knowledge, or skills, or help using the equipment?** |
| 10 min   | **Being a Latino with Diabetes** | **Challenges Specific to Latinos with Diabetes**  
So far, we've talked about all of the things that happen to diabetics, the good and the bad, and what can make their lives better. Now, what can you tell me about being a Latino diabetic? Is there something different or special about *la cultura o la familia Latina, o otros áreas de las vidas de latinos que nosotros no sabemos*? What makes the Latino experience different, in terms of the culture, the family?  
Probes:  
➤ Does anything about diabetes make it especially challenging for Latinos?  
➤ What about *remedios caseros*? Home remedies? Do they make a difference in how Latinos experience the disease or take care of themselves?  
➤ What about family for Latinos? How do Latino families help (or not) the diabetic with managing their disease?  
➤ How does self-monitoring work in a Latino family? Things like the blood glucose measurements, the shots or the pills, the health care appointments. Anything special about that for Latinos? |
| 30 min   | **Culturally competent program development for Latinos** | **Program components for a Culturally Competent Diabetes Self-Management Program for Latinos with type 2 diabetes**  
If a program could be developed that was designed especially for Latinos with type 2 diabetes what would it look like?  
Probes:  
➤ How might diet changes be addressed?  
Does being Latino mean that there are
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<td>dietary challenges? What are they?</td>
<td>What diet teaching techniques might work?</td>
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<td>What about patients or family bringing in</td>
<td>favorita recipes that could be modified for diabetics?</td>
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<td>➢ There are many ways to look at exercise.</td>
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<td>How could exercise be addressed to be more acceptable?</td>
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<td>Would specific walking programs work?</td>
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<td>Would pedometers be acceptable?</td>
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<td>➢ What kinds of glucose self-monitoring practices would we advise?</td>
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<td>➢ How might an education program be best delivered?</td>
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<td>What would be an ideal group size?</td>
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<td>How often should group meet and for how long?</td>
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<td>➢ What kinds of leaders should the group have?</td>
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<td>(community, church, diabetics themselves, nurses, physicians, etc.)</td>
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<td>➢ What about <em>promotoras</em>?</td>
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<td>Do you think that would work? (review <em>promotora</em> idea if not known)</td>
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<td>➢ What about using technology such as using educational video-tapes?</td>
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<td>➢ What incentives would work for participants to keep them participating?</td>
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<td>➢ What about caregivers or family members?</td>
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<td>How would they be involved?</td>
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<td>➢ If <em>remedios</em> were incorporated into a program which ones should be</td>
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<td>encouraged?</td>
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<td>➢ What changes could be made in professional health care to make the</td>
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<td>self-management program work better for Latinos?</td>
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<td>15 min</td>
<td>Self-Management Program characteristics</td>
<td><strong>Community Ownership, Involvement and Sustainability of a Self-Management</strong></td>
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<td><strong>Program: Program Characteristics</strong> Let's talk about the practical part of this</td>
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<td>program. How would it get organized? Who would teach it? Where would it get taught?</td>
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<td>Let's think of the diabetic Latinos you know. Who would they want to teach this kind of a self-management program?</td>
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<td>Where should it be held?</td>
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<td>Additional probes and follow up questions</td>
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<td>What are your recommendations for getting Latinos involved in such a diabetes self-management program?</td>
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<td>Clarify</td>
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<td>Wrap-up</td>
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Go over each question and summarize what has been said. Ask if you missed anything. Then thank the participants for their time.

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<tr>
<td></td>
<td>Payment</td>
<td>Participants sign for grocery store coupon offered to focus group participants.</td>
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REFERENCES


