

11-14-2003

## *Comida Sin Frijoles No es Comida: Evaluation of a Type 2 Diabetes Education Program for Latinos*

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*Comida Sin Frijoles No es Comida: Evaluation of a Type 2 Diabetes*  
Education Program for Latinos

by

Danielle R. O'Connor

A thesis submitted in partial fulfillment  
of the requirements for the degrees of  
Master of Arts  
Department of Anthropology  
College of Arts and Sciences  
and  
Master of Public Health  
Department of Epidemiology  
College of Public Health  
University of South Florida

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DATE OF APPROVAL:  
November 14, 2003

Keywords: cultural competency, community health clinics, applied anthropology,  
epidemiology, Spanish translation

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This thesis is dedicated to Scott L. and Auggie the Doggie who left the good times and dog beach of California to provide undying support for my graduate career. Thank you for unconditional love and encouragement throughout the entire process.

## **Acknowledgements**

I would like to thank Kay Perrin, RN, PhD and Lyndie Forthofer, PhD for providing the opportunity to work on this research project and for offering continuous support of my research. I would also like to thank Pfizer Inc. for developing the education program and for providing funding for the research. I would also like to show appreciation to Somer Goad, MPH for not only being one of the best bosses a person could ask for but also for constant companionship and laughter during long hours and days on the roads of Florida. Instrumental to the genesis of my internship and research were my committee members: Linda M. Whiteford, MPH, PhD, Roberta D. Baer, PhD, and Skai Schwartz, PhD. I appreciate all their efforts in bringing this research and thesis together. I am grateful to Veronica O'Connor, Devon Nagle, and Shana Cozad for their editorial assistance. Finally, I would like to thank all the members and participants in Antro Globe for their comments, suggestions, and support.

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*Comida Sin Frijoles No es Comida: Evaluation of a Type 2 Diabetes Education Program for Latinos*

Danielle R. O'Connor

ABSTRACT

This thesis describes an internship for the Department of Anthropology that was part of the Florida Health Literacy Study (FHLS) conducted at the University of South Florida College of Public Health, Department of Community and Family Health in the spring and summer of 2003. The FHLS implemented Pfizer Inc.'s *For Your Health* program, a type 2 diabetes and hypertension education programs, at 14 community health clinics across the state of Florida. The internship was designed to elicit the experiences of 10 bilingual health educators about their experiences and their perceptions of the experiences of their Latino patients with type 2 diabetes with the Spanish version of Pfizer's *For Your Health* or *Para Su Salud* type 2 diabetes education program. This internship examined the *Para Su Salud* program for its cultural appropriateness for the diverse Latino population in the community health clinics in Florida. This internship combined the fields of anthropology and public health to provide a holistic analysis of the issues important to the Latino Health Educators participating in Pfizer's *Para Su Salud* type 2 diabetes education program.

Through anthropological methods including in-depth interviews, class and clinic observations and patient satisfaction surveys, this internship found that the program was well-liked in the community health clinics and it could provide more culturally appropriate themes and food options for type 2 diabetic Latinos in Florida. This thesis makes nine specific recommendations for improving the appropriateness and ultimate success of the *Para Su Salud* educational program.

## **Chapter One**

### **Introduction**

This thesis describes an internship for applied anthropology and public health that depicts cross-cultural, cross-linguistic and cross-ethnic barriers to health education. The internship was part of a larger study, the Florida Health Literacy Study (FHLS), which was conducted by the Department of Community and Family Health at the College of Public Health. The Florida Health Literacy Study was a collaboration between the Department of Community and Family Health, which designed the study and implemented and evaluated the *For Your Health* program, and Pfizer Inc., which designed and funded the *For Your Health* program.

The *For Your Health* Program is a type 2 diabetes and hypertension education program for community health clinic patients in Florida who are either on Medicaid or uninsured. The program was developed in English then directly translated to Spanish and placed into 14 community health centers in Florida. Where possible, bilingual health educators were hired to teach the *For Your Health* program and collect data on patients. Patients eligible for the study were type 2 diabetics and/or hypertensives on Medicaid or uninsured between the ages of 18 and 65 who were “out of control” with Hemoglobin A<sub>1c</sub> measures greater than or equal to 7 and/or random blood sugar measurements of greater

than or equal to 135 and/or blood pressure measurements of greater than or equal to 135.

The implementation team, comprised of myself, Kay Perrin, PhD and Co-Principal Investigator and Somer Goad, MPH, implementation coordinator, was responsible for implementing Pfizer's *For Your Health* program in 14 community health clinics in Florida. The implementation team was also responsible for conducting pre-study focus groups; providing feedback on program and study materials; setting up the pilot study site; training bilingual health educators to execute the program; and helping to train clinic staff on their roles were in the study. In addition, the implementation team provided continuous support for health educators and clinic staff through monthly clinic visits and via email and telephone contact.

The internship described here, part of the larger FHLS, took place during the spring and summer of 2003. Its purpose was to look specifically at the Spanish version of the type 2 diabetes *For Your Health* or *Para Su Salud* program for its cultural appropriateness for the diverse Latino population in the community health clinics in the state of Florida.

Chapter Two provides a literature review of the relevant issues to this internship. This chapter presents the epidemiological background for Latinos with type 2 diabetes, including statistics for type 2 diabetes in Latinos; it also offers theories as to why Latinos have a higher prevalence of type 2 diabetes; and cites some barriers to health care faced by Latinos. This section is followed

by other anthropological considerations for Latinos with type 2 diabetes such as core cultural values that may impact health care; explanatory models of disease; folk illnesses; folk or home remedies; issues with mental health, exercise, diet, medications, and body image. This is followed by a discussion of anthropologists involved in diabetes health education programs and what anthropology has offered to these programs. To date, many anthropologists have focused on American Indian diabetes education programs but the lessons learned from these programs can be applied to programs for Latinos. The literature review also includes an epidemiological overview of other type 2 diabetes education and intervention programs and the results they had on such variables as blood sugar levels, HbA<sub>1c</sub>, and complications associated with diabetes such as amputations, nephropathy, neuropathy, and blindness. In this section the exposure is the intervention or education program and the outcome is the effect of such programs on such variables as those named above.

Chapter Three describes the methods used both in the larger FHLS and as a part of this internship. This chapter also presents the internship goals and research questions that were part of this internship. Whenever possible, the remainder of the thesis is organized by these research questions. The internship locations, including descriptions of clinic sites are also included in this chapter. Other methods discussed in this chapter include how the literature review was conducted; sampling of both FHLS study patients and health educators; clinic observations; class observations; interviews with health educators; and a patient

satisfaction survey. Finally, Chapter Three includes a discussion of the limitations of this internship and thesis.

Chapter Four presents results from the data collected from the various methods discussed in Chapter Three. The results from this study are organized by the research questions presented in Chapter Three. Results show that the low literacy levels of the Latino patients was a major issue for all of the health educators; however, the format of the curriculum with few words and simple pictures made it easier for health educators to deal with the problem. Health educators thought the translations were mostly good but believed there should be a separate curriculum for Mexicans who use very different words from other Latinos. Chapter Four also presents results about causal understandings of diabetes for Latinos in this study who name heredity as the major cause but, usually, not enough to explain disease onset. The health educators named diet as the most important issue for Latinos in this study and health educators suggest more culturally appropriate foods be included in the Spanish curriculum, as well as food labels written in English and Spanish. Results also show that folk illnesses and folk or home remedies are discussed by the Spanish-speaking patients.

Chapter Four results illustrate that the overall experiences with the program were positive for health educators and their patients and that the Spanish-speakers were well engaged in classes along with their family members. Results demonstrate that the family is less involved with disease management if

a woman has diabetes as compared with a man. Health educators thought that lack of transportation was a barrier for patients attending class, but patients said that they often drove themselves to the clinic. Other issues mentioned by health educators for Latino patients with type 2 diabetes were depression, fatalism, alcohol use, ideal body image and exercise.

Chapter Five presents an analysis and discussion of the results provided in Chapter Four. The analysis and discussion are presented in the context of the literature review in Chapter Two. The most important issues for Latinos and the *Para Su Salud* program are presented in this chapter and supported by the literature, including emphasis on a culturally appropriate diet in the curriculum for Latinos; family involvement in disease management, especially for women; explanatory models of disease including folk illnesses; use of home or folk remedies such as herbal teas and cactus; and discussion of depression, alcohol, ideal body image, and exercise.

Issues that were not supported by the literature included transportation as a barrier to reaching the clinic, and the fact that several health educators, who are also Latino, had never heard the term “folk illness” nor any of the specific folk illnesses discussed in the literature. Results were also conflicting for family involvement in class. While health educators said that Spanish-speaking patients were more likely to bring family members to class, only 25% of the Latino patients themselves said they took family members to class, a similar percentage as English-speakers.

Finally, Chapter Six, Recommendations and Conclusions makes nine primary recommendations to make the *Para Su Salud* type 2 diabetes education program more culturally appropriate, and thus likely more effective, for Latinos in community health clinics in Florida. In addition, other less crucial recommendations are made. While the *Para Su Salud* program was well received by the clinics and their patients, there are some improvements that can be made to make the program even better for the diverse Latino population in the community health clinics in Florida. The primary recommendations made in this chapter are as follows: first, change the diet section of the curriculum to include more culturally appropriate diet concepts, foods, and cooking suggestions. Second, emphasize family involvement in disease management, especially for female patients. Third, include food label reading in English in the curriculum with appropriate Spanish translations. Fourth, acknowledge explanatory models of illness that may be different from that of American culture, including God's will and folk illnesses such as *susto* and *nervios*. Fifth, include discussion of folk or home remedies and their potential interactions with prescribed medications. Sixth, include sections on alcohol, depression and erectile dysfunction as these were commonly asked-about topics and named as important issues by the health educators. Seventh, discuss ideal body image and exercise in ways that are sensitive to Latino beliefs and practices. Eighth, include more drawings and representations of Latinos in the curriculum. Finally, ninth, develop separate curriculums for Mexican patients and other Latin American patients.



In concluding this thesis, Chapter Six also discusses the overall internship experience, which included multiple interests including those of a major corporation (Pfizer Inc.), an academic department (Community and Family Health), and an anthropologist (myself.) While there were challenges in working on a multidisciplinary team, the end result was a program that clinics and patients appear to greatly appreciate and enjoy. This chapter presents the experience of the dual degree program in Applied Anthropology and Public Health and this internship's relevance for these two fields.

## **Chapter Two**

### **Literature Review**

The following is an overview of the literature relevant to this internship and, specifically, to issues important to Latinos with type 2 diabetes. The discussion begins with an overview of type 2 diabetes in the Latino community. This chapter will also review other health issues in the Latino community such as the cultural values that may affect the ways in which Latinos experience these diseases and navigate the health care system; barriers to health care; folk illnesses and remedies; diet; exercise; body image; and medications. In addition, there is a discussion of what anthropologists have contributed to the field of health education and diabetes. Following, there is an epidemiological review of other type 2 diabetes education programs both in the U.S. and abroad with several focusing on Latinos. In this section, the exposure is the respective health education program under study, and the outcomes are a variety of variables including changes in Hemoglobin A<sub>1c</sub> (HbA<sub>1c</sub>) levels, self-management behaviors, foot care, amputations, kidney problems, eye problems, and other potential complications associated with type 2 diabetes. Education programs specifically designed for Latinos will be discussed more in-depth for cultural themes

It is extremely important to note that while the term Latino is used here to refer to "all persons living in the United States whose origins can be traced to the

Spanish-speaking regions of Latin America, including the Caribbean, Mexico, Central America and South America" (Flores 2000), Latinos represent many different cultures and diverse beliefs within those cultures (Flores 2000; Oboler 1992). Some still choose to use the term Hispanic to refer to these groups and "although *Hispanic* is still the official designation used by the federal government...this term places narrow and undue emphasis on the European influence of Spanish colonialism. *Latino* is a more inclusive term that does not de-emphasize the crucial roles of indigenous Indian cultures and African slaves in Latin America" (Flores 2000). The term Hispanic may be used when discussing other research in which the authors use this term.

### **Type 2 Diabetes in Latinos: Epidemiological background**

First, the epidemiology of these diseases in this population will be discussed, offering important understanding of the background of type 2 diabetes in the Latino community. Epidemiology seeks to study and measure the distribution and determinants of diseases in populations. Furthermore, there are four basic functions of epidemiology. They include: 1) to discover the agent, host, and environmental factors which affect health, in order to provide the scientific basis for the prevention of disease and injury and the promotion of health; 2) to determine the relative importance of causes of illness, disability, and death, in order to establish priorities for research and action; 3) to identify those sections of the population that have the greatest risk of specific causes of ill health, so that the indicated action may be directed appropriately; and 4) to

evaluate the effectiveness of health programs and services in improving the health of the population (Brownson 1998).

In recent decades, the prevalence of type 2 diabetes has grown at an alarming rate. As of 1998, 10.5 million people had diabetes compared to 1.5 million in 1958. Diabetes care accounts for 15% of all health care expenditures in the U.S. and for 27% of Medicare expenditures (Luchsinger 2001). The population especially affected by this epidemic is the Latino population in the United States. The Latino population is growing 53% faster than the total U.S. population and by 2006 will be the largest minority in the U.S. (Dreger and Tremback 2002). Latinos are two to five times more likely to develop type 2 diabetes than non-Hispanic whites (Chesla et al. 2000). In addition, Latinos with type 2 diabetes experience more complications associated with the disease, including poor circulation, blindness, kidney failure, and amputations. Although diabetes is the seventh-leading cause of death for the general U.S. population, it is the fifth-leading cause of death for Latinos (Luchsinger 2001).

Why Latinos have such a higher prevalence of type 2 diabetes is not completely understood. Theories point to four main contributing factors: genetics, lifestyle (including diet and exercise), stress, and access to health care (Urdaneta and Krehbiel 1989; D'Arrigo and Keegan 2000; Lorenzo et al. 2001). No matter what a person's ethnic background, diabetes tends to run in families, indicating a genetic connection. Some suggest that diabetes is particularly prevalent in some Latino groups because of the admixture of American Indian,

Spanish and African genes. The other two groups highly affected by diabetes are American Indians and African Americans, thus a mixture of these genetic pools would lead to the increased susceptibility of Latinos to type 2 diabetes.

Lifestyle has become a major issue in the increased prevalence and incidence of type 2 diabetes. According to the epidemiologic transition, as societies have experienced improvements in social, economic, and environmental conditions, there has been a decrease in infectious diseases and an increase in chronic, degenerative diseases such as hypertension and type 2 diabetes (Omran 1971). In the past, groups from Central and South America lived more active lifestyles as hunters and gatherers or agriculturalists. Now the Latino population, along with most Americans, lives a more sedentary lifestyle as people have migrated from rural to urban areas. This, compounded with a westernized diet high in fat and simple as opposed to complex carbohydrates, leads to an inactive, unhealthy lifestyle that often results in obesity, a known risk factor for the onset of type 2 diabetes. This is especially important for Latinos, as they are more likely to be overweight than non-Hispanic whites (Urdaneta and Krehbiel 1989; D'Arrigo and Keegan 2000).

According to some, Latinos live under a greater amount of stress due to culture change and poverty, which can cause a weakening of the immune system and susceptibility to type 2 diabetes (Urdaneta and Krehbiel 1989). Part of this stress may include unequal access to health care, leading to more complications associated with type 2 diabetes.

### Barriers to Health Care

Many Latinos are not legal citizens and are therefore unable to receive health care benefits either from their employers or the government. They may appear eligible for Medicaid based on their income, but do not qualify based on their residency status. There may also be great fear among undocumented people that if they go to a clinic someone who works there will turn them in to the Internal Naturalization Service (INS). This fear is not unfounded as Harthorn (1998) found from in-depth interviews with farm workers and health care providers in California; Harthorn (1998) found that the INS has clinics under surveillance to apprehend undocumented immigrant farm workers seeking medical care. Many Latinos living in rural areas are migrant farm workers and are generally less healthy than the rest of the population due to long days of heavy labor; exposure to sun and pesticides; and lack of proper sanitation and water facilities. The life expectancy of migrant workers is 49 years, compared to the national average of 75 years (Sandhaus 1998). Furthermore, if migrant farm workers do go to a clinic for diabetes care, they find it difficult to obtain continuity in care due to their transient lifestyle. (Goldsmith 1993; Harthorn 1998; D'Arrigo and Keegan 2000).

Many other circumstances keep Latinos out of health clinics. One important issue is the language barrier. The Spanish-speaking population in the United States grew from 6.4% in 1980 to 10.2% in 1995 and is projected to be 19% by the year 2030. Not only are many of these Spanish-speakers illiterate in

English but in Spanish as well (Dreger and Tremback 2002; Flores 2000). In fact, about 50% of Latinos are functionally or marginally illiterate (Dreger and Tremback 2002), making it even more difficult to navigate the health care system, which barrages people with big words, complex disease descriptions and complicated prescription instructions. If there are no health care professionals who speak Spanish, it may be useless for a Latino to seek care. Even using a translator can be a slow and frustrating process that can yield inaccurate information. If diabetes education is offered, it is often only in English, making it inaccessible to Spanish speaking patients who may be most in need of the education. As Antonia Novello, former Surgeon General of the U.S. Public Health Service put it in 1993 "...in a culture dominated by honor and pride, there is a pervasive fear of getting involved in a health care system where the language is not understood, where the forms are too long, and the where the people behind the windows may seem to be judging more than caring" (in Goldsmith 1993:1603).

Another factor impeding Latinos from going to clinics is that work is believed to be far more important than getting checked for something that may or may not be serious. Latino men especially view working to support the family as the most important thing in life. Not only is work considered important, it is usually the sole means of supporting the family. Thus, the Latino family cannot afford to spend the day at the clinic. In addition, Latino families may not have transportation to the clinics, especially in rural areas. They could possibly spend

half the day just getting to the clinic where they may have to wait hours to see a doctor who may not speak Spanish (Chesla et al. 2000; D'Arrigo & Keegan 2000).

### **Anthropological Considerations**

In addition to the many barriers to health care mentioned above, other issues affect Latino health and many of them are cultural. In the following section some of the cultural beliefs surrounding diabetes and illness by Latinos and how they affect health and healthcare will be discussed.

#### *Core Cultural Values*

Latinos have several cultural values that have been identified as possibly affecting the way they perceive illness and navigate the health care system. The first is collectivism, which according to Marin & Marin (1991:11), emphasizes the "needs, objectives, and points of view of an ingroup while individualistic cultures determine their social behavior primarily in terms of personal objectives, attitudes and values that resemble little if at all those of the ingroup." The collective attitude of Latinos leads to a preference for more interpersonal relationships and a need to please others. This could lead to the desire for clinic staff to be more friendly and caring about each patient. It could also lead to the readiness for the patient to acquiesce to the doctor's requests, or to answer the doctor's questions the way the patient thinks the doctor wants them answered.

A second basic value of Latino culture is *respeto* or "respect." Latinos are respectful of doctors and other health care professionals. Out of respect for



doctors, Latinos may be reluctant to ask questions as this may be viewed as disrespectful. Furthermore, Latinos may nod their heads as a sign of respect rather than of understanding what the health care professional is telling them. Thus, the doctor leaves satisfied that the patient understands what s/he has told the patient but the patient leaves not clear on what the doctor has told him/her (Marin and Marin 1991; Flores 2000). Miscommunication and misunderstanding are also demonstrated in another study that assessed the health of Spanish-speaking Mexican-American patients. While doctors interviewed for this study considered about 80% of their patients in good health, only 15% of these patients considered themselves in good health (Angel 1989).

*SimpatICA* is a core value of Latino groups that calls for behavior that promotes pleasant social relationships without conflict. Again, to avoid confrontation with clinic staff, a Latino patient may tell them that s/he is adhering to his or her diet and exercise routine when, in actuality, s/he is not. Furthermore, Latinos expect clinic staff to act with *simpatICA* and if they do not, the patient will be weary of going back to the clinic (Triandis, et al. 1984; Marin and Marin 1991; Flores 2000). Linked to *simpatICA* is value of reciprocity. Simoni and Perez (1995) note from their study of support groups for Latina women, that the women enjoy both giving and receiving advice and help. They add that Latina women only feel comfortable participating in groups if they can give something in return.

Another cultural value of Latinos is *familismo*, or the importance of family. The extended family is crucial to Latino life (Anderson, et al. 1998; Brown and Hanis 1999; Flores 2000). Decisions are based not just on individual needs and wants but those of the entire family. Flores (2000) explains the tenets of *familismo* as the following: obligation to provide material and emotional support to the family, support from the family in problem solving, and decisions based on consulting with and pleasing the rest of the family. The importance of family comes into play when diabetics consider what foods to eat. In Latino families, it is usually the woman who is responsible for cooking, and she will cook what the family wants. If the doctor tells her to change her diet, she may see that as impossible because she cooks what her entire family likes, not what she may need (Quatromoni, et al. 1994; Anderson, et al. 1998).

The final, and possibly most important to diabetes, cultural value addressed here is *fatalismo* or fatalism. This is particularly relevant to Latino patients with diabetes as this concept speaks to beliefs about how the patient got the disease and what s/he can do to improve the condition. *Fatalismo* is the belief that the individual can do little to alter what is going to be fate (Flores 2000). One study found that Latino patients with cancer were far more likely than non-Hispanic whites to consider the disease a death sentence, to say that they would rather not know they had the disease, to say there is little that can be done to prevent cancer, and to believe that cancer is God's punishment (Perez-Stable, et al. 1992). Since diabetes is considered a hereditary disease and some studies

have found that Latinos attribute the onset to heredity (Quatromoni, et al. 1994; Hunt, et al. 1998; Weller, et al. 1999; Chesla, et al. 2000), they may feel that there is nothing they can do to prevent getting diabetes since members of their family had it. As Antonia Novello, former Surgeon General of the U.S. Public Health Service, stated, "Hispanics are fatalistic. We've been taught that you live, you suffer, you die, that's the way life is. The idea has never been presented that if you take care of your health, if you go to the doctor early, you won't have to suffer pain or discomfort. Discomfort happens to be the middle name of most people that are of Hispanic descent" (in Goldsmith 1993:1603).

In my own research in Costa Rica (O'Connor 2000), when asked why they thought they got diabetes, almost all of the respondents declared, "*Pura Vida!*" meaning "that's life!" or "that's just the way it goes!" *Pura Vida* can be a fatalistic statement that life is good no matter what, and there isn't much one can do to change what is destined to happen. If the diabetic patient believes that it is fate that they have the disease and that there is nothing that can be done to improve it, it is more likely that the patient will die or suffer from the many complications associated with diabetes.

### *Explanatory Models*

In looking at any disease, especially in cultures other than our own, it is imperative that we realize that other cultures and ethnicities may have an explanation of and for their disease that differs from the Western or biomedical model. "An explanatory model is the way an individual conceptualizes a

sickness episode. It includes beliefs and behaviors concerning etiology, course and timing of symptoms, reasons for becoming sick, diagnosis, methods of treatment, and roles and expectations of the sick individual” (Pachter 1994). Explanatory models are influenced by cultural beliefs, behaviors and values, as well as social class, education, occupation, religion and past experiences with illness and health care (Kleinman et al. 1978; Pachter 1994).

Other studies have looked for causal models for diabetes in Latinos. Most studies show that Latinos point to genetics, diet and lifestyle as the cause of their diabetes (Chesla et al. 1998; Hunt et al. 1998; Weller et al. 1999). Chesla et al. (1998) found that most Latinos in their study attribute diabetes to heredity followed in order of importance by weight, diet, and stress. As mentioned earlier the attribution of the disease to heredity can increase the fatalistic view of diabetes.

Weller et al. (1999) also found that Latino groups attribute the onset of diabetes to heredity. In comparing the views of Mexican-Americans, Puerto Rican Americans, Mexicans and Guatemalans, Weller et al. (1999) found that most views of diabetes concurred with biomedical beliefs. Most participants from all four sites thought that eating sugar or sweets, sugar in the blood, or a lack of insulin caused diabetes. Diabetes was not attributed to hot/cold dichotomies, as is the case with other diseases. The Mexican group identified fright (*susto*), anger and emotions as causes of diabetes and the Guatemalan sample also thought that emotions caused diabetes. The U.S. samples identified poor diet as

a cause of diabetes. The four groups were also consistent with the biomedical model when identifying the symptoms of diabetes, naming excessive thirst, headaches, dizziness, circulatory problems, kidney problems and eye problems as indications of having diabetes.

In their study of Mexican-Americans' causal stories of diabetes, Hunt et al. (1998) found that beliefs often matched the biomedical model of diabetes. However, the Mexican-Americans in this study went beyond biomedical causes to discuss lifestyle choices such as drinking alcohol, using drugs and smoking; emotional trauma such as the death of a loved one; and physical traumas such as a car accident. Hunt et al. state, "our patients found the biomedically accepted explanations alone to be inadequate for explaining how diabetes had come into their own lives. They responded to this problem by connecting diabetes to their own history" (1998:961).

The authors of this study (Hunt et al. 1998) focus on "provoking factors" or those behaviors or events that patients name as having triggered the diabetes in them. Provoking factors can be either behaviors such as smoking, drinking, drug use, over-eating, lack of exercise, or events such as an accident or death of a loved one. Whether or not the diabetic attributes his/her disease to a behavioral or eventual provoking factor can affect the way s/he treats or deals with his/her condition. Patients who cited behavioral factors as the cause of their disease were far more likely to adhere to self-management and treatment practices than those who thought that a tragic event spawned their diabetes (Hunt et al. 1998).

This again speaks to the idea of *fatalismo* in that those who think that an unavoidable or divine event triggered their diabetes also believe there is nothing they can do to improve their condition. Zaldivar and Smolowitz (1994) reported that 78% of the Hispanic diabetics in their study thought the disease was “God’s will”, and another 28% thought it was a direct punishment from God.

### Folk Illnesses

Anthropologists have long argued the difference between disease and illness. Disease in the paradigm of Western medicine is the “malfunctioning or maladaptation of biologic and psychophysiologic processes in the individual; whereas illness represents personal, interpersonal, and cultural reactions to disease or discomfort” (Kleinman et al. 1978). Much of the medical anthropology literature on Latinos has focused on folk illnesses. It is important to consider these folk illnesses as they sometimes play a part in the Latino ideology of type 2 diabetes. There are three folk illnesses common in Latinos that will be discussed here: *susto*, *embrujo* or *mal puesto*, and *ataques de nervios* or simply *nervios* in some cultures. Each of these will be briefly discussed to provide insight to some of the cultural values Latinos may bring to disease and health care.

*Susto* is an illness that is thought to be caused by a variety of things including: a frightening experience such as a car accident, an animal attack, seeing someone killed, or seeing the Devil or a ghost, and may cause one's soul to leave the body (Logan 1993; Baer 1996; Weller et al. 2002). *Susto* affects people of each gender, all age, ethnic and economic groups, although Mexicans

are most commonly afflicted. *Susto* is quite common in Latino culture. A study by Weller et al. (2002) looked at *susto* in Guatemala, Mexico, and a predominately Mexican-American sample in Texas. In their sample Weller et al. (2002) found that 92% of Guatemalans, 80% of Mexicans, and 88% of the Texas sample had known someone with *susto*; 89% of Guatemalans, 80% of Mexicans and 66% of Mexican-Americans in Texas had someone in their family with *susto*; and 37% of Guatemalans, 58% of Mexicans and 59% of Mexican-Americans in Texas personally had *susto*.

There is usually a long period of time between the frightening event and the onset of symptoms (Logan 1993, Poss and Jezewski 2002). It has been argued that *susto* is not simply a psychiatric disorder but also manifests itself biologically in the form of disease and is associated with higher rates of morbidity and mortality (Rubel 1984). However, there is no relation between the severity of the frightening event and the gravity of resulting symptoms or disease (Logan 1993). *Susto* victims have been found to have up to five clinically diagnosed diseases but physicians commonly deny that *susto* is or can lead to a true medical condition (Rubel 1978).

Many have attempted to link *susto* to one single diagnostic category, but these efforts have often been in vain and proved inconclusive. Some of the categories considered have been hypoglycemia (Bolton 1981), parasitization (Signorini 1982), schizophrenia (Pages Larraya 1967); others believe *susto* is triggered by grief (Houghton and Boersma 1988). The only variable that has

been statistically correlated with *susto* is breakdown in one's social role functioning (Logan 1993).

In a recent study looking at Mexican-American explanatory models of type 2 diabetes, Poss and Jezewski (2002) found that those in the study felt that *susto* plays a significant role in the onset of diabetes. In this study, 22 type 2 diabetic Mexican-Americans living in El Paso, Texas participated in open-ended, in-depth interviews and focus groups about type 2 diabetes and *susto*. Poss and Jezewski (2002) found that their sample of Mexican-Americans incorporated both a traditional and biomedical model for understanding and treating type 2 diabetes. Most participants understood the relation between insulin, the pancreas, and sugar in the body and thought that diet regulation was important in the control of diabetes.

Poss and Jezewski (2002) also found that only one of their subjects did not think that *susto* or a powerful emotion caused diabetes. Almost all of their participants could recount a frightful incident that contributed to the onset of their diabetes. Such incidents included automobile accidents, witnessing a death by gunfire or drowning, being threatened with a gun, and the sudden death of a family member. In this sample, "*susto* was not viewed as an illness per se but, rather, was seen a specific event that caused the body to become more susceptible to disease, in this case, type 2 diabetes" (Poss and Jezewski 2002:369).



While most subjects said that *susto* was the precipitating factor to the onset of diabetes, they also named other biomedically accepted causes such as lack of proper self-care, being overweight, poor diet, lack of exercise and stress. Treatments for *susto* included a *barriada* in which a healer moves an egg over the person and then breaks it in a glass allowing the healer to diagnose the problem. Another commonly mentioned remedy for *susto* is prayer (Poss and Jezewski 2002).

*Ataques de nervios* (attack of the nerves) or simply *nervios* (nerves) is another folk illness commonly discussed in Latino health and health care.

□ *Nervios* occurs in response to stressful experiences such as the death of a loved one, family conflict, or threat of some kind. *Nervios* manifests itself in rashes, depression, tiredness, feeling cold, heart palpitations, fainting, and seizure. An attack does not usually last long once the family or social network is there to support the victim (Guarnaccia 1993; Baer 1996).

A recent comparative study by Baer et al. (2003) looked at both *nervios* and *susto* across four distinct cultural groups: Guatemalans, Mexicans, Mexican Americans and Puerto Ricans. This study found that all four groups cited the following symptoms of *nervios*: depression or sadness, a feeling of hopelessness, crying, shaking or trembling, headache, feeling of choking, cold sweat, weight loss, bad temper and insomnia (Baer et al. 2003). Interestingly, many of these symptoms are similar to those mentioned for diabetes.

*Mal puesto* or *embrujo* (witchcraft) is believed to cause insanity or psychotic episodes and symptoms include moody or strange behavior (Baer 1996). It can also manifest as a physical illness depending on what the bewitcher was trying to accomplish. It is often believed that the bewitcher was angry or jealous of the bewitched and caused the *mal puesto*. The afflicted often first seek out herbal remedies to neutralize the spell (Koss 1993). Although *mal puesto* or *embrujo* are not commonly associated with diabetes, they go to further show the strong belief in folk illnesses by many Latinos.

Each of these illnesses is important to understand because they are sometimes heard in the discussions of diabetes and hypertension. Some Latinos refer to *nervios* as a symptom of diabetes while others think they got diabetes because of a frightening experience (*susto*). In addition, these folk illnesses provide evidence that Latinos seeking health care or health education may have different concepts and causal models of disease. Furthermore, folk illnesses have implications for the treatments of illness and disease. Many Latinos utilize folk, herbal or sometimes called home, remedies. The next section discusses the relevance of home remedies to Latinos with type 2 diabetes.

#### *Folk, Herbal or Home Remedies*

Although other studies have shown that Latinos trust and/or consult their pharmacist more than their doctor (Anderson et al. 1998; Higgins and Learn 1999), Weller et al. (1999) found that respondents thought that diabetes is a disease best treated by a doctor and by self-management of diet and exercise.

Folk remedies such as spearmint tea, massage, rubbing the sick person with an egg that are often used to treat other diseases were not considered effective by these samples. The exceptions were in Mexico and Guatemala where aloe was thought an effective treatment for diabetes. Studies have in fact shown *aloe vera* to have hypoglycemic properties (Ghannam in Weller et al. 1999). Other ethnobotanical treatments are widely used in Mexico to treat diabetes and may continue to be used by Mexican immigrants in the U.S. In Baja, Mexico two plants have been shown to be very effective in the treatment of diabetes, *Bidens pilosa* (Beggar Ticks) and Spanish needles, and *Tecoma stans* (Trumpet Bush) and Yellow Bells. These plants are often sold by herbalists in *compuestas*, or combinations of plants that are thought to treat diabetes (Winkelman 1989).

In other research, (Trotter 1981) found that *remedios caseros* (home remedies) were commonly used to treat a variety of diseases by Mexican-Americans in South Texas. While specific remedies are not discussed in this paper, diabetes and hypertension were on the list of diseases that are commonly treated by remedies caseros. Another study by Zaldivar and Smolowitz (1994) found that 17% of the Hispanics with diabetes in their study were using herbal remedies. It is important to know about these folk remedies and what diseases are treated with them as Latino patients in the U.S may use them along with other biomedical treatments, leading to sometimes dangerous interactions (Pachter 1994). Winkelman further argues,

The physician must be knowledgeable about herbal remedies and their effects since Mexican-Americans and other clients may make use of multiple systems of health care simultaneously. Ignoring or discounting the potential efficacy of herbal medications may lead

to serious treatment problems since traditional Mexican-American remedies may be potentially toxic. Ignoring the effects of medicinal plants could frustrate medical treatment since traditional remedies may counteract biomedical remedies or compound their effects to dangerous levels. On the other hand, acceptance of the potential efficacy of traditional remedies facilitates the establishment of doctor-patient rapport and increases the likelihood of full disclosure and patient compliance (1989:256).

### *Issues for Latinos with Diabetes*

This section addresses other important issues for Latinos living with type 2 diabetes.

#### *Depression and Social Support*

Research has shown that Latinos are more likely to be depressed than Black or White Americans (Misnksy et al. 2003). Women especially may feel isolated from friends and family who normally provide social support because they do not understand diabetes, and do not know how to give the woman the support she needs. This can lead to greater stress, anxiety and depression. In the Latino community, depression can be viewed as a weakness and Latinos may not be open to discussing depression or depressive symptoms (Henderson 1993). Furthermore, Latinos may turn to family and friends and a close social support network for help, rather than to the medical community.

#### *Alcohol Use*

Consumption of alcohol may be an important issue for Latinos with diabetes, especially men. Alcohol can raise blood sugar levels and effect diabetes management. Research has shown that while Latinos drink less or equal to what non-Latino Whites drink, they drink more than other minority groups (Caetano 2003). It also shows that Latino men drink more than Latino

women, and that consumption varies across ethnic groups and levels of acculturation. U.S.-born Latinos and Mexican-born men are more likely to be heavy drinkers. In addition, the more acculturated Latinos drink more heavily than less acculturated Latinos (Giachello 1996).

### *Exercise*

Lack of physical activity or exercise in the Latino population has led to obesity and, thus, chronic diseases. According to Avila and Hovell (1994) over 50% of Latino men and women are overweight and 12% to 35% are obese. Research has shown that approximately 32% of Mexican-American men and 45% of Mexican-American women do not participate in any leisure-time physical activity, compared with 22% of Black American men, 39% of Black American women, and 11% of White American men, and 21% of White American women (Kriska and Rexroad 1998).

Women who are often busy with household duties cannot find the time to exercise as they may be too busy watching their own and others' young children, cooking family meals, and cleaning house to go for a walk. Many Latino women and men may feel that they get enough exercise while doing household chores or working in the fields. Furthermore, taking time to exercise might be seen as selfish and taking away from the duties of providing for the family. Others identified family, friend and community support as incentives to begin and continue with an exercise program (Kriska and Rexroad 1998).

In addition, many associate exercise only with expensive gyms and high-impact aerobics rather than brisk walking (Urdaneta and Krehbiel 1989.) Some Latinos with diabetes have also cited fear of walking in an unsafe neighborhood and fear of physical side effects such as foot swelling and leg pain as obstacles to an exercise routine (Urdaneta and Krehbiel 1989; Quatromoni et al 1994.) However, many others have named walking and dancing as favorite ways to exercise (Quatromoni et al. 1994.)

### *Body Image*

While the ideal body image for most Americans may be that of frail skinniness (even though 60% of us are obese), many other cultures around the world see plumpness as a positive attribute. In fact, some fat can be good to protect against infectious disease and is protective against gastrointestinal problems and anemia (Cassidy 1991). However, morbid obesity is associated with higher morbidity and mortality rates from chronic disease such as type 2 diabetes and hypertension. Bigness can be a symbol of dominance, power, wealth, and prestige as well as fertility, health, beauty and sex appeal (Cassidy 1991).

A study by Massara (1989) of obesity in Puerto Rican women in the U.S. found that being heavy was desirable in the Puerto Rican culture and represented many positive things. Massara (1989) discovered that a woman's weight would increase exponentially over time with such events as marriage and childbirth. Gaining weight in the beginning of a marriage shows that a woman's

new husband is taking good care of her, and the weight is increasing her fertility and improving her health. It is also believed that not eating a lot or not gaining weight during pregnancy will hurt the unborn child. Women in this study did not concur with biomedical definitions of overweight or obesity but, rather, saw weights that are considered by physicians in the “overweight” or “obese” categories as either “plump” or “normal.” As Massara (1989) notes, these findings have implications for health education if the participants do not believe that they are overweight in the first place.

### *Diet*

Latinos with diabetes face several barriers to eating a healthy diet. As mentioned above, women are usually responsible for the cooking and maintenance of the household. In one study, Anderson et al. (1998) found that providing traditional meals for the family may be a huge barrier in a woman's management of her diabetes. A Latina is more likely to cook what her family likes rather than what her diabetic diet may require. Changing her diet would be considered selfish or a burden to her family (Oomen et al. 1999). On the other hand, Latino men with diabetes find it difficult to give up eating traditional foods, and prioritize socializing and drinking with friends over diabetes management (Anderson et al. 1998).

Another consideration is the expense of eating healthy. A study conducted in urban Hartford, Connecticut by Himmelgreen et al. (2000) found that 89% of the Latino households they interviewed were receiving food stamps.

Food stamps often do not allow for a healthy diet, especially one that may cater to the needs of a diabetic. In addition, 25% of the adults in the households said that they cannot afford to eat properly.

Other barriers mentioned in a study by Palmeri et al. (1998) were lack of resources, limited education or cooking skills, uncertainty caused by confusing or contradictory messages, family “history” (customs, habits), and food preferences. Women said that they tended to cater to their husband’s and children’s food preferences even if they are not the healthiest choices. In addition, informants mentioned lack of time to prepare some foods and lack of storage space limited the family’s food choices as barriers to a healthy diet.

Another barrier to eating a healthy diet is a rural to urban migration. Foods in rural areas tend to be more natural and healthy, whereas urban life relies on processed and fast foods. In addition, many migrants have to deal with the stresses of acculturation and assimilation to a new country. As Baer (1998: 101) argues, “Ethnicity is important to traditional food choices and the relative importance of the foods the larger society defines as being of high prestige value. Ethnic groups trying to assimilate into larger society may strive to emulate eating habits of those they perceive to be more mainstream.”

Furthermore, research has shown that many Latinos believe a diabetic diet to be inconsiderate of traditional Latino foods such as beans, rice, tortillas, and peppers (Urdaneta and Krehbiel 1989) and is boring, flavorless and



"overall...unappealing, irrelevant, and unrelated to Latino culture and lifestyle" (Quatromoni et al. 1994:871).

Baer and Nichols (1998) have developed a guide for health care professionals of what different Latino groups in the U.S. eat. The guide should prove useful to health educators and dieticians working with these groups. The following will give an overview of the foods eaten by specific Latino groups. Not all groups are included but it can give an idea of the importance of understanding the cultural food traditions of the people with whom health care professionals are working.

According to Baer and Nichols (1998), typical diet for Puerto Ricans in the U.S. includes rice, black beans, peas (kidney beans) flavored with salt and lard, starchy root vegetables, salt cod fritters (*bacalaitas*), plantains (*platanos*) stuffed with spicy beef or fried pork rind, *arroz con pollo* (rice with chicken), *pasteles* (corn meal or mashed plantains stuffed with meat mixture wrapped in plantain leaves and steamed), and *seranto* (cod and potatoes). They often use a seasoning called *adobo*, which is a mixture of lemon, garlic, salt, pepper and other spices. Puerto Ricans enjoy Americanized Chinese food as well. *Café con leche* (coffee with milk) is also popular. More traditional foods include *sofrito* (a sauce of onions, garlic, cilantro, sweet peppers, tomatoes and *achiote* seeds) and *bacalao* (dried salt cod).

Cuban Americans, along with other Latino groups, have had to adjust to having their larger meal in the evening as opposed to earlier in the day as was

traditional in their home countries. Cubans eat a lot of pork but consider it expensive, so they eat a lot of other meats as well, including beef, chicken, lamb, and goat. Meats are often marinated in lemon, orange or grapefruit juice and are fried in pork or other animal fat. Cubans also enjoy a variety of traditional vegetables including *malanga*, *name*, *bonato*, *plantanos*, and *llame*. They also eat salads with lettuce, tomatoes, avocado, onions, carrots, and peas with an oil and vinegar dressing. Fruits are also a staple including oranges, mangoes, bananas, and guava. Another main staple of the Cuban diet, black beans (*frijoles negros*) and rice, as well as Cuban bread are often used to make sandwiches. *Mojo*, as seasoned oil, is also put on sandwiches. Stews made with *sofrito* (mentioned above) and starchy root vegetables are often sautéed in butter, garlic, onion and lemon. They eat a lot of cheese and butter, but rarely use milk or cream, except in *café con leche*. Cubans have been known to consume large quantities of sugar (Baer and Nichols 1998).

Baer and Nichols (1998) note that the Mexican diet is historically based on corn, squash and beans. A variety of beans are regularly consumed, along with corn tortillas made with limewater, making them high in calcium and niacin. Beans and tortillas are sometimes eaten with meals two or three times a day. Pork and pork products are also popular with Mexican-Americans along with goat, beef, chicken, fish and seafood. Vegetables commonly eaten are tomatoes, onions, squash, *nopales* (cactus), garlic, avocado and chiles. Salads are rarely eaten except by the upper class. Common fruits are pineapple,

banana, strawberries, pomegranates, oranges, mangoes, papaya, coconut, quinces, cherimoyas, apples, and limes. Main dishes are commonly stir-fried (quisados) and lard is used for cooking. Soups (caldos) are also common and contain less fat. Mexicans eat a lot of foods with sugar, including fried pastries (*churros*), *pan dulce* (sweet bread), *bunuelos* (fried tortilla dough served with honey) and soft drinks, ice cream and candy. *Licuidos* (milk blended with bananas and sometimes an egg), but other milk products are rarely consumed. In fact, many Latinos are lactose intolerant and have trouble digesting milk. According to Kingfisher and Millard (1998), at least 55% of Mexican-Americans are lactose intolerant. Tamales and enchiladas, common in American Mexican restaurants are only eaten on special occasions.

The last group overviewed by Baer and Nichols (1998) are Guatemalans. Common to their diet are black beans, squash, green beans, avocados, potatoes and other greens. Corn tortillas are also popular. Guatemalan refugees eat a lot of candy, chips, soda and other junk foods.

Although not all Latino ethnic groups are recognized in the Baer and Nichols (1998) guide, it is an important reference point and clearly demonstrates the diversity and differences in Latino diets as compared to the traditional American diet. In contrast, another study by Palmeri et al. (1998) found that low-income Latinos were more acculturated to American foods than they had anticipated. This study found that through descriptions of everyday meals, participants mentioned some traditional Latino foods but, more commonly,

followed American eating patterns. Breakfast included dry cereal on the weekdays and bacon, eggs and pancakes on the weekends. Lunch and dinner meals consisted of stews, casseroles, spaghetti, burritos and tacos with very few participants mentioning vegetables and none mentioning fruits. Participants in this study asked for nutritional education to counteract the negative influences of acculturation and television advertisements. They saw the most important nutritional education as that for what to feed children so that they are healthy.

Many Latino families not only find it too expensive to buy healthy foods, but medications and glucose strips as well, making it difficult to self-manage diabetes (Quatromoni et al. 1994; Anderson et al. 1998; Baer 1998; Palmeri et al. 1998; Chesla et al. 2000).

### *Medications*

Another issue for many Latinos living with diabetes is the economic cost of pharmaceuticals required to treat type 2 diabetes. Without a major change in lifestyle, including proper diet and exercise already mentioned as more extreme barriers for Latinos, the only way physicians treat diabetes is with drugs, and there are plenty of them out there. However, many Latinos are uninsured and cannot afford the cost of medications. Often times a choice has to be made between providing food for the family or purchasing medications; the obvious choice is food for the family. Furthermore, Latino patients do not really understand what the drugs are or why they are taking them except to alleviate some of their diabetic symptoms. They identify their medications by the color of

the pill rather than the name and what it does in their bodies (Urdaneta and Krehbiel 1989.) In addition, as mentioned previously, Latinos may be using home remedies that could have dangerous interactions with prescribed medications (Winkelman 1989; Pachter 1994).

### *Anthropologists and Diabetes Health Education Programs*

Given the literature on the cultural implications of illness and disease, and the many barriers to health and health care experienced by Latinos, there is evident need for anthropological research and methods in the realm of health education. Over the years, anthropologists have criticized health education for not providing culturally sensitive education to differing ethnic groups. Good (1995:3) argues that health education was,

developed specifically to help public health specialists convince people to act more rationally—to use preventive services, obey doctor's orders, or use medical services 'appropriately'—such theories evaluate health beliefs for their proximity to empirically correct knowledge concerning the seriousness of particular disorders or the efficacy of particular behaviors or therapies. The wealth of meanings associated with illness in local cultures is thus reduced to a set of propositions held by individual actors, which are in turn evaluated in relation to biomedical knowledge.

Most of the research conducted by anthropologists on diabetes health education programs has been with North American Indian groups (Weidman 1987; Hagey 1989; Lang 1989; Olson 1999). While these education programs are not directed at Latinos, valuable lessons can be learned from them about the importance of cultural understanding when delivering any education program to a specific ethnic group.

In working with the Native Diabetes Program in Toronto, Canada among the Ojibway and Cree tribes, Hagey (1989) found herself trying to ensure the

cultural integrity of a diabetes program by using her expertise as both a RN and an anthropologist. Hagey (1989) advocated for an event that would get the attention of native groups, and get them involved in the diabetes education program. She advocated for a maple sugar festival because she knew it was something the people would get involved with and encourage participation. Other health care professionals were adamantly against the idea because maple sugar was bad for diabetics. However, Hagey (1989) argued that you could not tell this culture that they cannot celebrate or have maple sugar because it is a part of their cultural identity, and should be embraced with a caution that diabetics can have very small amounts of maple sugar. In the end, Hagey (1989) won out; the event was a success, attracting many American Indians with type 2 diabetes to the educational program.

In addition, the Canadian Diabetes Association Good Health Eating Guide for diabetics had a picture of maple sugar with a big red "X" over it with other foods that one should not eat. Hagey (1989) argues that these "Do's and Don'ts" are too similar to the "Thou Shalts and Thou Shalt Nots" in Judeo-Christian commandments that many American Indians resent as a result of missionary schooling. Thus, the Ojibway and Cree were not going to be open to the education that was once again preaching to them about what they could and could not do, and that was inconsiderate of their cultural beliefs.

Hagey (1989) and others working on the Native Diabetes Program also had to be aware of the cultural idea of balance in the Ojibway and Cree groups.

In trying to figure out how to get the point across that obesity is linked to diabetes without offending anyone or going against the idea of balance, a group of health workers came up with an illustration of a fat man and a thin man, both with diabetes, with their arms around each other. This illustration got the point across that both overweight and excessively thin people can both get diabetes; the illustration showed a balance. In Hagey's work, it is evident the benefit an anthropologist can bring to an education program for a specific culture.

Other anthropologists have collected narratives about diabetes from American Indians in hopes of recommending the best possible education programs for specific groups. Lang (1989) worked with the Dakota to understand their explanatory models of diabetes, and which cultural practices might influence diabetes within this group. As in Latino culture, Lang (1989) found that food plays an integral part in social interactions and hospitality. Lang (1989) also found that many Dakota use home remedies and participate in healing rituals to treat diabetes, and that their explanatory models involve myth and an idea that all is not right with the moral and social order of the community. Lang (1989) emphasizes that these cultural scripts need to be taken into consideration in order for the Native Diabetes Program to succeed.

Some anthropologists working in health education (Nichter 1985; Olson 1999) have noted the importance of designing health education that is culturally relevant and culturally sensitive. One aspect of this is the specific learning styles of specific ethnic groups. Olson (1999:12) argues that many diabetes education

programs are designed for the mainstream population (mostly whites) and “emphasize competition, deferred gratification, and a linear mode of thinking, which may not always be appropriate models to employ in [other] cultures.” Furthermore, these education programs often utilize a direct learning style that is a non-participatory lecture style in which the educator (often a doctor or nurse) dictates to the patient what s/he should be doing in a one-way flow of information. Indirect learning, on the other hand, uses life examples, stories, metaphors, myths, and experiences in which there is two-way communication of ideas and issues. This style of learning may be more appropriate for non-American groups (Olson 1999).

The following section reviews the epidemiology of other health education programs for type 2 diabetics. The majority of the programs are for non-Latino whites and Europeans. However, there is a focus on the few Latino specific type 2 diabetes education programs that have existed.

### **Epidemiological Overview of Diabetes Education Programs**

This section reviews several studies that have focused on diabetes education, and the results diabetes education has had on specific outcomes. Most of the literature focuses on diabetes education targeting American whites, Europeans and older whites with type 2 diabetes. There is relatively little literature focusing on specific outcomes for Latinos who have received diabetes education. However, there are some education interventions for Latinos that have been studied, and those are also discussed here.



In one randomized clinical trial (RCT), Raji et al. (2002) compared the effects intensive versus passive diabetes education had on Hemoglobin A<sub>1C</sub> (HbA<sub>1C</sub>) levels. In this study 106 patients with HbA<sub>1C</sub> readings greater than 8.5% were randomized to either an intensive education group, which consisted of a structured curriculum taught by a physician, nurse, nutritionist, pharmacist, exercise physiologist and a social worker for 3.5 days, or to a passive education group. The passive group received educational materials providing general information on diabetes management that was sent in the mail every three months. There was also a matched control group that did not receive any education. The mean age of study participants was 60 ± 3 years, and 99% of the participants were men (Raji 2002).

HbA<sub>1C</sub> levels were measured at baseline, and at three, six and twelve months after randomization. At the end of twelve months, mean HbA<sub>1C</sub> levels fell significantly ( $P < 0.001$ ) in both the intensive and the passive education groups. The intensive group's levels fell 2%, the passive group's levels fell 1.9%, and there was no difference between groups at three and six months. Both groups showed significantly greater decline ( $P < 0.03$ ) than the control group, with a 1.2% decrease. The authors concluded that in this group of patients any type of diabetes education, whether intensive or passive, improved glycemic control (Raji 2002).

Rickheim et al. (2002) found that group and individual education were equally effective at reducing Body Mass Index (BMI) and at improving diabetes

knowledge, quality-of-life, and attitudes about diabetes. HbA<sub>1c</sub> levels were slightly more improved in the group classes ( $2.5 \pm 1.8\%$ ) compared to the individual ( $1.7 \pm 1.9\%$ ). In this study, 87 subjects were assigned to the group classes, and 83 subjects to individual classes. Both types of classes were composed of four sessions from five to seven hours, the group sessions lasting longer than individual sessions due to group interaction. A diabetes nurse specialist and a diabetes nutrition specialist taught the curriculum that focused on knowledge, skills and attitudes that would encourage, support and promote self-management skills leading to long-term behavior maintenance. Data were collected on each subject at baseline, two weeks, three months and six months (Rickheim 2002).

McMurray et al. (2002) looked at the effects of diabetes education and care management on patient outcomes in a dialysis unit. In this RCT patients were randomized to either the study group (n = 45) or the control group (n = 38) based on what day of the week they came into the dialysis unit. The study group received intensive education consisting of topics related to self-management behaviors, diabetes-related quality of life, glycemic management and control, eye care, foot care, and vascular care (McMurray 2002).

In this study, baseline foot risk category worsened in the control group from 2.7 to 3.3 ( $P < 0.05$ ) but was unchanged in the study group (2.2 to 2.0). The study group had no amputations, whereas the control group had five amputations. Ten patients in the control group were hospitalized with diabetes or

vascular related problems, whereas one patient from the study group was hospitalized for such problems ( $P < 0.002$ ). In addition, HbA<sub>1C</sub> levels declined from 6.9 to 6.3 in the study group, whereas the control group was unchanged ( $P < 0.005$ ). Diabetes related quality-of-life scores also increased in the study group but not in the control group ( $P < 0.001$ ), and there was significant improvement in self-management behaviors in the study group but not in the control group (McMurray 2002).

In a RCT in older adults with type 2 diabetes Miller et al. (2002) looked at the effects of nutrition education on metabolic outcomes. The control group consisted of 47 subjects and the experimental group consisted of 45 subjects; all were age 65 or older. The intervention taught subjects how to evaluate nutrition information on food labels, meal planning, and diabetes self-management in ten weekly groups sessions, each session lasting 1 1/2 to 2 hours. In this study, the experimental group that received education greatly improved fasting glucose and HbA<sub>1C</sub> levels between pretest and posttest ( $P < 0.01$ ) compared to the control group (Miller 2002).

Several of the studies on diabetes education programs have been conducted in European countries. In a retrospective cohort study, Schalch et al. (2001) evaluated a psycho-educational nutritional program for diabetic patients. Sixty-five type 2 diabetics, divided into two groups 2a (BMI  $< 30 \text{ kg/m}^2$ ,  $n = 34$ ) and 2b (BMI  $\geq 30 \text{ kg/m}^2$ ,  $n = 31$ ), were evaluated two years after receiving a week of in-hospital patient education. Patients participated in interactive dietetic

workshops in addition to receiving education about diabetes self-management. The outcomes measured in this study were caloric intake, protein intake, lipid intake, carbohydrate intake, saturated fatty acids intake, cholesterol intake, and fiber intake (Schalch 2001).

This study found that two years after the one-week in-hospital training, type 2b diabetics reduced their caloric intake by 300 kcal per day ( $P < 0.05$ ) while type 2a diabetics' caloric intake remained unchanged from baseline. The type 2b group also significantly reduced their protein intake ( $1.6 \pm 0.1$  before versus  $1.4 \pm 0.1$  after,  $P < .05$ ), whereas the type 2a group remained unchanged. Lipid intake also decreased in the type 2b group from  $92 \pm 7$  at baseline to  $77 \pm 5$  after two years ( $P < 0.04$ ). At baseline, carbohydrate intake in the type 2b group met European Association Study for Diabetes guidelines, with carbohydrate intakes accounting for between 45-55% of total caloric intake and this remained unchanged in two years. However, the type 2a group significantly improved their carbohydrate intake from 15% at baseline to 38% after two years ( $P < 0.02$ ). Type 2b diabetics significantly decreased their saturated fatty acids intake over the two years from  $33.3 \pm 3$  grams per day to  $25 \pm 2$  grams per day ( $P < 0.05$ ). Cholesterol and fiber intake did not significantly change in either group over the two years (Schalch 2001).

In a four-year randomized controlled clinical trial conducted in Italy, Trento et al. (2002) looked at the effects of a lifestyle intervention by group care on preventing deterioration of type 2 diabetics. In this study, the authors compared

traditional individual diabetes care with interactive group care. A total of 112 patients were randomized to either individual education (n = 56) or group education (n = 56) for 52 months. Group education consisted of sessions held every three months with one or two physicians and an educationist. This program included the following health education issues related to type 2 diabetes: risks of being overweight, meal planning, physical exercise, checking and improving metabolic control, smoking cessation, medication compliance and preventing diabetes-related complications. The curriculum was divided into four sessions and was repeated in years one and two, then spread over seven sessions in years three and four to avoid repetition, and allow for in-depth discussion. The control group was scheduled for three monthly visits, or as frequently as necessary, in the general diabetes clinics (Trento 2002).

Primary outcomes included body weight, fasting blood glucose, HbA<sub>1C</sub>, blood lipids, knowledge of diabetes, health behavior, and quality of life. Secondary outcomes included assessment of diabetic retinopathy, hypoglycemic medication, microalbuminuria, systolic and diastolic blood pressure, Framingham score for cardiovascular risk, and anti-hypertensive and lipid-lowering medication. HbA<sub>1C</sub> levels increased in the control group but not in the intervention group ( $p < 0.001$ ). The intervention group also saw a reduction in BMI ( $p < 0.001$ ), and an increase in HDL-cholesterol. Knowledge of diabetes, quality of life, and health behaviors also improved in the group care patients ( $p < 0.001$ ), and worsened in the control group ( $p = 0.004$  to  $p < 0.001$ ). Dosage of

hypoglycemic medications decreased ( $p < 0.001$ ), and retinopathy progressed less ( $p < 0.009$ ) in the intervention group as compared to the control group. Diastolic blood pressure and relative cardiovascular risk ( $p < 0.05$ ) decreased in both the intervention and control groups. Group care required 196 minutes and \$756.54 per patient, whereas individual care required 150 minutes and \$665.77 per patient, resulting in an additional \$2.12 spent per point gained in the quality of life score. These results indicate that group care is not only financially and logistically feasible but it helps type 2 diabetes improve their condition (Trento 2002).

Another study looked at the effectiveness of group education for diabetes. In this study Sarkadi and Rosenqvist (2001) field-tested a group diabetes education program taught by pharmacists. Participants were recruited through advertisements in local newspapers and a monthly pharmacy magazine. Participants ( $N = 105$ ) joined the field test by a self-reported diagnosis of type 2 diabetes. Once in the study, participants received a questionnaire through the mail to obtain demographic information. HbA<sub>1c</sub>s were collected at baseline, six and 12 months. The Hemoglobins were self-sampled with the aid of a nurse on the first sampling.

Participants were considered to have achieved "glycemic success" if they achieved the target value of a HbA<sub>1c</sub>  $< 6.5\%$  and/or progressively decreased HbA<sub>1c</sub> levels based on baseline values. The mean HbA<sub>1c</sub> significantly decreased after six months of pharmacist led education. The target HbA<sub>1c</sub> of  $< 6.5\%$  was

seen in 51% after six months of education, and in 61% after 12 months of education ( $P = 0.023$ ). Initial HbA<sub>1c</sub> and BMI were the most important predictors of glycemic success with age, sex, duration and civil status having no effects. After initially decreasing their HbA<sub>1c</sub>, overweight individuals relapsed, showing the need for long-term support for weight management. Those who experienced loneliness also had trouble keeping HbA<sub>1c</sub> levels lower, demonstrating interaction between diet, self-care, and social relations (Sarkadi 2001).

In a study using a computer-generated system that provides type 2 diabetics with uniquely formatted and personalized reports of diabetes status and goals on changes in HbA<sub>1c</sub> levels, Levetan et al. (2002) found that such programs can be useful. A total of 150 diabetics were randomized to receive either standard care or the intervention, which included a computer-generated 11" x 17" color poster showing the patient's HbA<sub>1c</sub> status, goals, and personalized steps to help goal achievement. All of the 150 patients received diabetes education during the three months prior to enrollment. HbA<sub>1c</sub>s were taken at baseline and six months (Levetan 2002).

There were no significant differences between control and intervention patient groups at baseline in terms of age, sex, education level, race, HbA<sub>1c</sub> and lipid levels. In patients with a baseline HbA<sub>1c</sub>  $\geq 7.0\%$  there was an 8.6% reduction in HbA<sub>1c</sub> among control subjects compared with a 17.0% decrease in intervention subjects ( $P = 0.032$ ). Among patients experiencing a decline in HbA<sub>1c</sub>, it was most significant in the intervention group who reduced their HbA<sub>1c</sub>

by 24.2% ( $P = 0.0048$ ) compared with the control group who reduced their HbA<sub>1c</sub> by 13.3% ( $P = 0.0048$ ) (Levetan 2002).

Another study by Surwit et al. (2002) focused on stress management education as a means of reducing HbA<sub>1c</sub> levels in type 2 diabetics. In this study, 108 patients were randomized to either the control group, which received five sessions of group diabetes education, or the intervention group, which received the same education plus stress management training. During the one-year study, subjects had HbA<sub>1c</sub> tests and questionnaires assessing perceived stress, anxiety, and psychological health administered at regular intervals (Surwit 2002).

Patients who received stress management training showed a small but significant decrease in HbA<sub>1c</sub> levels of 0.5% compared with those in the control group who received only diabetes education. Surwit et al. (2002) argue that even small decreases in HbA<sub>1c</sub> levels are associated with significant reductions in microvascular complications. In addition, after one year, 32% of the stress management group had HbA<sub>1c</sub> levels that were lower by  $\geq 1.0\%$  compared with only 12% of the control subjects (Surwit 2002).

In their study, Kulzer et al. (2002) looked at the efficacy of three different type 2 diabetes education programs. The first is a self-management oriented program with group lessons (MEDIAS 2), second is a combination treatment with group lessons and individual counseling (combination), and third is a conventional structured education program focusing on knowledge transfer (standard). A total of 193 subjects with type 2 diabetes (age  $55.5 \pm 7.2$  years;



HbA<sub>1c</sub> 7.8 ± 1.7%; BMI 32.1 ± 3.9 kg/m<sup>2</sup>) were randomized to one of the three education interventions. The outcome variables were glycemic control and body weight 12 months after the education programs were completed. There were no relevant differences in outcome variables at baseline.

The authors found a significant ( $p = 0.014$ ) advantage in glycemic control in the MEDIAS 2 group ([DELTA] HbA<sub>1c</sub> -0.7 ± 1.4%) compared with combination ([DELTA] HbA<sub>1c</sub> -0.3 ± 1.6 %) and standard ([DELTA] 0.1 ± 1.5%). Body weight was the most significant improvement in the MEDIAS 2 group ([DELTA] BMI -0.9 ± 1.5 kg/m<sup>2</sup>) compared with standard ([DELTA] BMI -0.5 ± 1.6 kg/m<sup>2</sup>), and compared with the combination ([DELTA] BMI -0.7 ± 1.5 kg/m<sup>2</sup>).

A study aimed at comparing type 2 diabetes Treatment As Usual (TAU) with Pathways to Change (PTC) was done to determine if PTC results in greater readiness to change, greater increases in self-care, and better diabetes control. Subjects were stratified by diabetes treatment and then randomized to TAU or PTC as well as being randomized to receive free blood testing strips or not. PTC consisted of personalized assessment reports, self-help manuals, newsletters, phone counseling, healthy eating and/or smoking cessation. A total of 1,029 recruited participants were assigned to one of three pre-action stages (from the Transtheoretical Model of Change): self-monitoring of blood glucose, healthy eating, or smoking (Jones et al. 2003).

For the self-monitoring blood glucose intervention, 43.4% of those receiving PTC and free strips moved to the action stage, as well as 30.5% of

those only receiving PTC. Twenty-seven percent of those participants receiving TAU plus strips, and 18.4% of those receiving TAU alone, moved to the action stage ( $P < 0.001$ ). In the healthy eating intervention, 32.5% of the PTC group moved from pre-action to action or maintenance compared with 25.8% of TAU group ( $P < 0.001$ ). In the smoking cessation intervention, 24.3% of the PTC group moved to action or maintenance compared with only 13.4% of the TAU group ( $P < 0.03$ ). In those who moved to the action stage in the self-monitored blood glucose intervention, all significantly decreased their HbA<sub>1c</sub> ( $P < 0.001$ ). Participants who received the healthy eating intervention decreased their percentage of calories from fat (35.2% in PTC compared with 36.1% in TAU,  $P = 0.004$ ), increased their servings of fruit per day (1.89 compared with 1.68,  $P = 0.016$ ), and increased vegetable servings (2.24 compared with 2.06,  $P = 0.011$ ). However, they did not decrease their weight (Jones et al. 2003).

Izquierdo et al. (2003) compared diabetes education given through telemedicine versus in person. Type 2 diabetics ( $N = 56$ ) were randomized to either receive diabetes education in person or via telemedicine (intervention group). Education consisted of three visits with nurses and nurse educators. Comparisons were made on HbA<sub>1c</sub> and questionnaires to assess patient satisfaction and psychosocial functioning as related to diabetes. Measurements were taken at baseline, after the diabetes education program, and three months after the last educational visit.

The telemedicine group reported high patient satisfaction compared with the control group. HbA<sub>1c</sub> improved from 8.6 ± 1.8% at baseline to 7.8 ± 1.5% immediately after education, and 7.8 ± 1.8% three months after the last educational visit (P < 0.001 unadjusted, P = 0.089 adjusted for BMI and age). Changes were similar in both the control and the telemedicine groups. The authors concluded that both forms of diabetes education are effective, and that patients enjoyed the telemedicine method, making it a viable way of educating in the future (Izquierdo et al. 2003).

In a study working toward the prevention of type 2 diabetes, Tate et al. (2003) looked at the effects of an Internet behavioral counseling program aimed at weight loss in adults at risk for type 2 diabetes. A total of 92 overweight adults participated, with a mean age of 48.5 ± 9.4 years, and a mean BMI of 33.1 ± 3.8. Subjects were randomized to either a basic Internet or an Internet plus behavioral e-counseling program. Both groups received one in-person counseling session and the same core Internet programs, and were asked to submit weekly weights. Subjects in e-counseling submitted calorie and exercise information, and received weekly email behavioral counseling and feedback from a counselor. Weight and waist measurements were taken at baseline and 12 months.

Analysis revealed that participants who received e-counseling lost more weight (-4.4 ± 6.2 kg) after 12 months than the basic Internet group (-2.0 ± 5.7 kg) (P = 0.04). The e-counseling group also had greater decreases in

percentage of initial body weight (4.8%) as compared with the basic Internet group (2.2%) (P = 0.03). The e-counseling group had a greater decrease in BMI (-1.6 ± 2.2) compared with the basic Internet group (-0.08 ± 2.1) (P = 0.03). Finally, the e-counseling group had a greater decrease in waist circumference (-7.2 ± 7.5cm) compared with the basic Internet group (-4.4 ± 5.7 cm) (P = 0.05). The authors concluded that email counseling, added to a basic Internet weight loss education program, could significantly increase weight loss in adults with type 2 diabetes (Tate et al. 2003).

One study looked at patient satisfaction with diabetes education workshops in rural Arkansas. Fifty-nine patients and their family members attended half-day diabetes education workshops. Workshops lasted four hours and included diabetes information from physicians, a pharmacist, nutritionist, and diabetes educator. Topics discussed included diagnosis and complications; updates on diabetes medications; lifestyle changes; foot care and sick-day care. Instruction was also given on how to read food labels, counting carbohydrates, calories and fat grams, along with simple exercises that could be done at home (Carter et al. 2002).

Participants were asked to evaluate the program using a five-point Likert scale (1-poor, 2-fair, 3-average, 4-good, 5-excellent). Patients and their families gave the program an overall rating of 4.7. The lowest rating was 4.1 for the length of the program. Facilities were rated 4.4; educational content was rated

4.5; relevance of the information provided was rated 4.6; and presenters' knowledge of the topics was rated 4.7. (Carter et al. 2002).

### **Education Programs for Latinos with Type 2 Diabetes**

Studies have suggested that Latinos with diabetes would like more education about diabetes and how to care for themselves (Piette 1999; Zierold et al. 1999). In one study, 70% of Latinos with diabetes responded, "yes" to the question, "Do you feel the need for more diabetes education?" Respondents who had diabetes for a shorter duration felt more need for education than respondents who had the disease for a longer period of time and/or who had a family member who also had diabetes (Zierold et al. 1999). Another study that used automated phone calls to provide diabetes education and self-care tips showed that Spanish-speakers were twice as likely to listen to the health messages than English-speakers. Spanish-speakers were also more likely to choose to listen to diet tips than English-speakers. After 12 months of automated calls, most Spanish-speakers were still listening to the messages, whereas only 25% of English-speakers were still listening (Piette 1999). These studies suggest that, if more widely available, diabetes education programs would be accepted and utilized by Latinos.

Several studies have focused on existing education programs aimed at Latinos with diabetes, and each has valuable information to offer as to what is important to emphasize when teaching these groups about the disease (Brown and Hanis 1999; Corkery, et al. 1997; Gagliardino and Etchegoyen 2001; Piette

1999; Quinn and McNabb 1999; Taylor, et al. 2000; Zierold, et al. 1999).

National Standards suggest that people with diabetes should have a basic understanding of diabetes, and be aware of the following issues associated with diabetes: psychological adjustment, medications, hygiene, family support, nutrition principles, exercise, the signs and symptoms of high or low blood sugar, monitoring blood glucose, illness management, use of the health care system, long-term complications, and community resources (in Brown & Hanis 1999). All of these principles need to be presented in a culturally sensitive manner to the Latino community living in the United States so that they can understand these issues as well as white non-Hispanics.

One study and education program that has been particularly successful is the Starr County study in Texas that focuses on diabetes education among Mexican-Americans. Through data obtained in focus groups and individual interviews, the Starr County study found six key points important to Mexican-American diabetics in this community. First is that there are explicit cultural preferences for dietary choices; second, that although the community is the poorest in the state, there were dramatic differences in wealth within the community; third, the importance of lowering blood glucose levels; fourth, the belief that nothing could be done about type 2 diabetes because so many people in the community have it or have a family member who have it; fifth, that simple but interesting dietary changes would have to be emphasized given low literacy rates and lack of interest in learning complex diet exchanges; and sixth, the

importance of including family members in education and support (Brown & Hanis 1999).

As a result of this information obtained in the focus groups, the Starr County Study designed and implemented a diabetes education program that focuses on culturally sensitive dissemination of knowledge for the management of diabetes. The Starr County study has particularly focused on diet and nutrition because they believe dietary improvements may have the greatest positive impact on diabetes management. The study strongly encourages healthy adaptations to traditional Mexican recipes. Primary dietary goals were to reduce portion size, reduce fat intake, and reduce sodium intake. Bilingual health educators and dietitians were hired from the community to provide classes on diabetes basics, diet and exercise. In addition, the health educators demonstrated how to cook healthy Mexican meals. Family and friends were encouraged to attend these sessions. Participants were also shown videotapes made with other diabetics in the community that included basic diabetes information and care information (Brown & Hanis 1999).

The Starr County education program was well received in the community. Participants especially like seeing people they know in the videos, making them more at ease with having diabetes and more likely to engage in the recommended self-care activities. Participants also found the inclusion of traditional foods prepared in a healthy manner a positive of the program. It was also important to participants that family members and friends were included in

the intervention. Participants in the study significantly reduced their hemoglobin A1C levels, showing the success of the program (Brown & Hanis 1999). The Starr County project is an on-going education program that has proven one of the most successful to work with Latinos.

Another study by Corkery et al. (1997) also used bilingual community health workers to provide diabetes education to Latinos. This study found that participants in the education program were more likely to complete the program when there is a bilingual community health worker present (80% completed) compared to an educator from another community (47% completed,  $p = 0.01$ ). The presence of a community health worker did not, however, significantly affect diabetes knowledge, self-care behavior or HbA<sub>1c</sub> improvement. The education itself had positive effects on these outcomes such as increased knowledge levels and self-care practices, and glycohemoglobin levels improved from a baseline of 11.7% to 9.9% at completion ( $p = 0.04$ ) and 9.5% at follow-up ( $p < 0.001$ ). However, the community health worker only increased the chances of the participant completing the program. Since more knowledge is obtained by completing the program, the affect of the community health worker was indirectly positive in improving diabetes knowledge, self-care and HbA<sub>1c</sub>.

In addition, Taylor et al. (2000) employed Latino *abuelas* (grandmothers and grandmother-figures) to provide nutrition education to low-income Latino mothers. The program entitled *La Cocina Saludable* (The Healthy Kitchen) used these older women because they are respected in the Latino community,



especially for their knowledge of family, cooking, health and nutrition. The study found that this type of program, which uses older female community members, is effective in changing and improving nutrition related knowledge, skills and behaviors that lead to healthy lifestyles (Taylor et al. 2000).

Another education program aimed at reducing certain risk factors associated with diabetes in Latinos used bilingual lay health educators to conduct home-based education (Quinn et al. 1999). Eight to ten participants at a time met at the health educator's home for short education on nutrition, diet and exercise. After that, the health educator visited each participant's home once a month to provide individual assistance in meal planning, food preparation and exercise. The results of this program were that participants were able to significantly increase the amount of exercise they do each week, and modify their diets to be healthier (Quinn et al. 1999).

One education program included 10, two-hour classes in Spanish. The classes were taught by a diabetologist, a dietician or a psychologist. Classes included 12-14 patients and were taught biweekly, covering topics such as diabetes basics, complications, nutrition, exercise and medications. There were a total of 79 subjects (53 women, 26 men), age  $57 \pm 11$  (mean  $\pm$  SD) years who had type 2 diabetes  $6.2 \pm 5.6$  years. Weight, HbA<sub>1c</sub>, and lipid profile were measured at baseline and at the end of the 10-session program. These measures were available in 41 patients at six and 12 months after the program ended, and in 30 patients at two years (Caballero et al. 2002).

After the education program, there was significant improvements in weight, HbA<sub>1c</sub>, and cholesterol (the authors do not give the statistical significance.) However, after six months, HbA<sub>1c</sub> levels returned to what they were at baseline, and cholesterol levels returned to baseline after one year. Weight tended to be lower but not significantly different in the follow-up. The authors concluded that a culturally appropriate education program for Hispanics can be effective, but there needs to be continuous follow-up and classes to encourage improvements to continue (Caballero et al. 2002).

Another study conducted in Costa Rica looked at the effectiveness of a type 2 diabetes education intervention in type 2 diabetics in rural Costa Rica. Subjects (N = 75; mean age 59 years) were randomized to the intervention or control group. All subjects received basic diabetes education. Participants in the intervention group also received 11 weekly 90-minute nutrition classes and participated in triweekly walking sessions that lasted 60 minutes each. HbA<sub>1c</sub>, fasting plasma glucose, total cholesterol, triglycerides, HDL and LDL cholesterol, height, weight, BMI and blood pressure were measured at baseline and at the end of the 12-week study (Goldhaber-Fiebert et al. 2003).

The intervention group lost  $1.0 \pm 2.2$  kg compared with a weight gain in the control group of  $0.4 \pm 2.3$  kg ( $P = 0.028$ ). In addition, fasting plasma glucose decreased in the intervention group  $19 \pm 55$  mg/dl compared with an increase in the control group  $16 \pm 78$  mg/dl ( $P = 0.048$ ). HbA<sub>1c</sub> decreased in the intervention

group  $1.8 \pm 2.3\%$  and in the control group  $0.4 \pm 2.3\%$  ( $P = 0.028$ ) (Goldhaber-Fiebert et al. 2003).

## **Conclusion**

These studies show both the need for, and variety of, health education programs for Latinos with diabetes. Many things have to be taken into consideration when designing a diabetes education program for Latinos—like cultural values such as *simpatico*, *respeto*, *familismo* and *fatalismo*. Also important is the need for diet and nutrition recommendations that are culturally relevant. Most successful programs have used bilingual health educators who are from the community where the intervention takes place.

The following chapter, Chapter Three, discusses the methods used in the FHLS and this smaller sub-study. In addition, the four primary research questions are presented for which the rest of this thesis has been laid out.

## **Chapter Three**

### **Methods**

This chapter discusses the methods by which the data was acquired during the internship. This chapter provides descriptions of each of the sites involved in this internship. This chapter also outlines the research questions and the methods used to address those questions. This is followed by a discussion of the limitations involved with the research methods used for this internship and thesis. The research for this thesis was conducted during the fall of 2002 and the spring of 2003.

#### **Goal of the Florida Health Literacy Study**

The overall goal of FHLS is to improve the health literacy of Medicaid and uninsured type 2 diabetics and hypertensives in community health centers in Florida through health education designed at a low health literacy level, and taught by qualified bilingual health educators. The education programs are designed to improve patients': understanding of their health; self management of their health; medication compliance; health outcomes; quality of life; and communication with health care providers (Perrin et al. 2003).

FHLS was started in one community health center in Florida with a pilot study. Following the pilot, appropriate changes were made to program materials, and the full study began in May of 2002. From 48 health centers for which data

were available, the 14 best matching pairs were identified (N=28). Each pair was then randomly assigned as either an intervention (experimental) or "usual care" (comparison) site. One of the comparison sites dropped out of the study, leaving 27 health centers to participate. Thus, the program is being implemented in 27 community health centers; 14 clinics are intervention sites; the remaining 13 sites are comparison sites. Clinics were matched using Euclidian distances for the following variables: comparable services and programs; staffing configurations; and patient characteristics. The intervention sites received Pfizer's *For Your Health* or *Para Su Salud* program. The usual care sites did not receive the program and were asked to provide their "usual" services to patients with type 2 diabetes and/or hypertension (Perrin et al. 2003).

### **Internship Goals and Research Questions**

Since this internship was a smaller sub-study as part of the larger FHLS, it was not necessary to design a full study but, rather, to use some of what was already being done in the larger study and to expand on it. FHLS involved the implementation of a type 2 diabetes and hypertension education program. The education program was designed both in English and Spanish and bilingual (English and Spanish) health educators were hired, when possible, in all sites (12 of 14 sites.) The Spanish portion of the program was directly translated from the English version of the program. Therefore, the goal of this internship was to specifically look at the Spanish portion of the program for its language and cultural appropriateness for the diverse Spanish-speaking Latino population in

the community health centers in Florida. Thus the research questions were as follows:

Research Question 1: Is the language and presentation of the Spanish curriculum appropriate?

Research Question 2: What issues are important to the Spanish-Speakers in relation to diabetes?

- 2a. What are the causal ideas and understanding about diabetes?
- 2b. What symptoms associated with diabetes are discussed?
- 2c. What foods and dietary issues are commonly mentioned and discussed?
- 2d. Is alcohol discussed? If so, what is said?
- 2e. Is ideal body image discussed? If so, what is said?
- 2f. What is discussed about exercise and barriers to exercise?
- 2g. Are folk illnesses discussed in relation to diabetes? If so, what is said?
- 2h. Are home or folk remedies discussed? If so, what is said?

Research Question 3: What are the overall experiences with the program of health educators and the Spanish-speaking patients?

- 3a. What issues are involved in the Spanish-speaking classes?
- 3b. What is the overall opinion of the program materials?
- 3c. What prevents patients from coming to classes or meetings with the health educator?

Research Question 4: What other issues and core cultural values are involved in participating in this program and navigating the health care system in general?

### **Internship Location**

The internship took place in 12 federally funded community health clinics with Spanish-speaking patients across the state of Florida. This section summarizes the information the clinics provided to the FHLS coordinators after they were selected for the study. The information focuses on Medicaid patients, and does not provide information on uninsured patients as they were not

originally part of the study. See Appendix A for a table of Services Information that were provided by some of the clinics described below.

Site #20 employed two full-time primary care physicians, three full-time nurse practitioners, and one full-time RN or LPN. This staff served a patient population of 1,991, 286 of whom are Medicaid recipients. There were 43 reported Medicaid patients with diabetes. The clinic had 7,538 patient encounters per year, 1000 of those with diabetics. Fifty-two percent of the patient population was non-Hispanic/Latino White, 21% was Hispanic/Latino, and 24% was non-Hispanic/Latino Black. The clinic reported 77 migrant or seasonal farm-worker patients. The clinic did not report having any diabetes or diet and nutrition health education. This clinic also did not provide any of its services information.

Site #21 also employed just one full-time primary care physician and 1101 patients, 183 of who are on Medicaid. The clinic reported 12 diabetic patients on Medicaid, and approximately 3,450 patient encounters per year, 378 of those with diabetics. Sixty-one percent of the patients at this clinic were non-Hispanic/Latino White, 34% Hispanic/Latino, and 2% non-Hispanic/Latino Black. The clinic reported 23 migrant or seasonal farm-worker patients. This site did not provide any diabetes or diet and nutrition classes, and it did not provide any of its services information.

Site #24 employed one full-time primary care physician and one full-time physician assistant. The clinic reported a total patient population of 2,428, 509 of

whom are Medicaid patients. Forty-five of those Medicaid patients were reported as diabetics. The clinic had 7,971 patient encounters per year, 631 of those with diabetics. Seventy-seven percent of the patient population was non-Hispanic/Latino White, 17% Hispanic/Latino, and 4% non-Hispanic/Latino Black. The clinic did not report any diabetes or diet and nutrition education given at the clinic, nor did it report any of its services information.

Site #26 employed one full-time primary care physician. The physician has a total of 2029 patients at this clinic, 212 of whom were Medicaid recipients. The clinic reported 17 Medicaid patients with diabetes. The clinic had 6,722 patient encounters per year, 576 with diabetics. Sixty-nine percent of the patients were non-Hispanic/Latino White, 18% were Hispanic/Latino and 7% were non-Hispanic/Latino Black. This site reported 25 migrant or seasonal farm-worker patients. The clinic did not have any diabetes or diet and nutrition education. The clinic also did not provide any services information.

At the start of FHLS site #30 employed three full-time primary care physicians, four full-time physician assistants, one part-time nurse practitioner, one full-time RN and/or LPN, and three full-time outreach workers. The staff provided care for 4,834 clinic patients, 684 of whom were on Medicaid. The clinic had 13,936 patient encounters per year. The patient population is 75% Hispanic/Latino, 22% non-Hispanic/Latino White, and 4% Black. The clinic did not report holding any diabetes or diet and nutrition education classes.



Site # 31 employed seven full-time primary care physicians, one full-time nurse practitioner, 17 full-time physician assistants, three full-time RNs and/or LPNs, one full-time pharmacist and six full-time outreach workers. The clinic had a patient population of 13,256, 1,663 of those on Medicaid. The clinic had approximately 41,442 patient encounters per year. Seventy-one percent of the patients at this clinic were Hispanic/Latino, 20% were non-Hispanic/Latino White and 5% were non-Hispanic/Latino Black. The clinic did not offer diabetes or diet and nutrition education.

Site #34 is located in a rural area. At the beginning of FHLS, the clinic employed approximately three full-time physicians, three full-time RNs and/or LPNs and one full-time pharmacist. This clinic did not employ any outreach workers, nurse practitioners or health educators when the study began. The clinic had a total of 4,056 patients, 1,292 of whom were Medicaid patients. There were a recorded 48 Medicaid patients with diabetes. The clinic had 12,534 patient encounters per year, 848 of those with diabetics. The clinic did not report having any health education classes for diabetes or diet and nutrition. Seventy-five percent of the patients at this clinic were non-Hispanic/Latino White, 21% were non-Hispanic/Latino Black, and 4% were Hispanic/Latino. The clinic reported having 28 seasonal farm-worker patients. The following table summarizes the services provided at site #34.

Site #37 employed a total of three primary care physicians on staff, three nurse practitioners, one physician assistant, five RNs and/or LPNs, one full-time

pharmacist and one full-time outreach worker. The staff supported a clinic patient population of 5,683, 1,350 of whom are Medicaid patients. The clinic had approximately 23,125 patient encounters per year. The patient population at this clinic is 65% Hispanic/Latino, 30% non-Hispanic/Latino White and 3% non-Hispanic/Latino Black. The clinic did not report teaching any diabetes or diet and nutrition classes.

Site #39 employed four full-time primary care physicians, three full-time nurse practitioners, 10 full-time RNs and/or LPNs, one full-time pharmacist, one full-time outreach worker, and one part-time health educator. The clinic had 7,950 patients, 1,240 of whom were on Medicaid. The clinic had an average of 27,384 patient encounters per year. Fifty-seven percent of the patients at this clinic were Hispanic/Latino, 39% were non-Hispanic/Latino White, and 2% were non-Hispanic/Latino Black. Although the clinic had a part-time health educator, it did not provide information on how many, if any, diabetes education classes were taught.

Site #42 employed one full-time primary care physician and one full-time RN or LPN. The clinic had 788 patients, 123 of which are on Medicaid. The clinic reported one Medicaid patient with diabetes. The clinic had an average of 3,080 patient encounters per year, 43 of those with diabetics. Ninety-two percent of the patients were Hispanic/Latino, 4% were non-Hispanic/Latino Black and 2% were non-Hispanic/Latino White. This clinic reported 625 migrant or seasonal farm-

worker patients. The clinic did not provide diabetes or diet and nutrition education.

Site #43 had five full-time primary care physicians on staff, one full-time physician assistant, ten full-time RNs and/or LPNs, and one full-time outreach worker. This staff had 9,060 patients, 2,122 of who were Medicaid recipients. The clinic reported 14 diabetic patients on Medicaid. This site had approximately 42,545 patient encounters per year, 2,138 of those with diabetics. Forty-seven percent of patients at this clinic were Hispanic/Latino, 29% were non-Hispanic/Latino Black and 7% were non-Hispanic/Latino White. This clinic reported having 2,142 migrant or seasonal farm-worker patients. This clinic did not provide any diabetes or diet and nutrition education.

### **Internship Timeframe**

I was hired on to the FHLS in May of 2001. However, the research portion of my time on the project for this thesis did not begin until August of 2002. The year prior to the official beginning of the internship was spent writing the project implementation plan, finalizing the educational materials, setting up the project pilot site, and training health educators to implement the program.

I was hired for 20 hours per week for the first year, and 30 hours per week the following year. Given the extensive time spent traveling, a good portion of those hours was spent on the road. During the initial time of the internship in the fall of 2002, 20-25 hours per week were spent traveling to the 14 implementation sites, and observing classes taught by the health educator. I took notes during

the class observations and clinic visits; about two hours per week were spent typing the notes. I spent the remaining 5-10 hours per week working to collect relevant articles via the Internet or from the USF library and interlibrary loan, and subsequently, comprise the literature review in Chapter Two.

During the second part of the internship in the spring of 2003, during which interviews were conducted with health educators, about 20-25 hours per week were spent traveling to implementation sites to meet with the health educators to discuss how the project was going, and to observe classes if they were still being taught. The remaining 5-10 hours per week during this time were spent interviewing health educators. Most of the health educator interviews were conducted over the telephone, which is discussed later.

### **Literature Review**

Prior to and throughout the internship, I conducted an in-depth search for the literature review in the previous chapter. The literature review had to be conducted for both the anthropological and epidemiological backgrounds for this thesis. Since these two disciplines are very different in nature, epidemiology being more quantitative and straightforward and anthropology being more qualitative and descriptive, the literature searches were conducted in different ways using different Internet search engines.

First, I conducted the epidemiology portion of the literature review, looking for other health education programs for diabetes that were measuring specific outcomes such as a reduction in blood sugar levels, weight loss, or reduction in

diabetes related ailments such as blindness, kidney failure, neuropathy, or amputations to name a few.

The first search was conducted on-line using the Medline search engine. The terms used for this search were "diabetes" and "health education" in the keywords of the articles between the years 1993-2003. This search yielded 1,974 results. By looking at the abstracts of these results, articles were chosen for their relatedness to this project. In addition, it was more desirable to use articles and research that had both an experimental and control group, making them more relevant to an epidemiological discussion. Once the articles from this search were obtained and read completely, more articles were obtained from the references in the read articles.

The second search for anthropological literature was a bit more time consuming and complicated since anthropological research, especially that focusing on health, is often published in a variety of journals, many of which are not anthropological. For this search, I focused on health issues for Latinos, folk illnesses, and Latino nutritional patterns.

This search was conducted using a variety of Internet search engines including First Search, Social Science Abstracts, JSTOR, and Ovid. These search engines yielded hundreds of results, all of which were carefully examined for their relevance to this thesis and their anthropological significance. Articles were sorted and read thoroughly and, from their references, more articles were obtained. With such a plethora of information from both searches, it was difficult

to decide what to use and what to eliminate. However, it soon became clear that some articles were more relevant and helpful to this endeavor than others.

## **Sampling**

### *FHLS Study Patients*

Since the research conducted during this internship was already part of a larger study, the sampling was done for me through the larger study. Patients eligible for the FHLS were those who are 18-64 years of age, on Medicaid or uninsured, had been diagnosed with hypertension and/or diabetes and had been "out of control" in the last six months. Patients were "out of control" if they have had a random blood sugar reading of 200 mg/dl or above, a fasting blood sugar reading of 126 mg/dl or above or a HbA<sub>1c</sub> of 7 or above, and/or a blood pressure reading in which the systolic reading is 140 or above, or the diastolic reading is 90 or above. Patients could either be English-speaking or Spanish-speaking. The ethnicity of each study patient was never identified on any paperwork. The only way to determine ethnicity was by the health educators asking or the patients offering the information. Unfortunately, many of the health educators and clinics were unaware of the country of origin of their patients, except in those areas where one ethnicity is the majority such as in well-known Mexican migrant farm-worker areas.

If the patient was eligible for the study, the doctor referred the patient to the health educator. The health educator explained the program and the study and asked if the patient wanted to enroll. Once the patient signed the informed

consent s/he went through a baseline interview and clinical measures, attended the three diabetes classes and/or one hypertension class, and participated in follow-ups at two, three and six months from enrollment to collect baseline measures again. For the research portion of this internship, only the Spanish-speaking patients with type 2 diabetes were part of my sample.

### Health Educators

The sample for the health educator portion is limited to the 13 bilingual health educators. Some sites were unable to find bilingual health educators to fill the position and became "English-only" sites. The health educators in the English and Spanish sites were all bilingual Latinos, except for one who was Haitian but fluent in Spanish, and were hired through a job advertisement placed by the University of South Florida College of Public Health in local newspapers, on the Internet, and at various colleges across the state. While USF helped to find qualified health educators, it was the clinics' final decision on whom to hire.

Qualifications for the health educator position were as follows:

Minimum – Bachelor prepared in health education or other health related field; experience in health education and patient counseling; basic computer skills; excellent written and oral communication, organizational and problem solving skills; ability to interact with members of the community in a professional and friendly manner

Preferred – Masters prepared Health Educator with experience in diabetes and/or hypertension education; experience in clinical settings; experience with diverse populations; CHES certification (Perrin 2003).

The health educators hired were from diverse backgrounds and qualifications. From the 13 health educators only 10 remained in the sample for interview purposes because three left the project early.

Seven of the health educators were from Puerto Rico, six of these were female; one was a male. The male had previous experience as a health educator and fitness expert. The qualified females from Puerto Rico included an administrative assistant who had been very active and familiar in the community; two nurses who had also been active in community outreach at one time or another; and three who had been health educators, one of whom had an MPH. Two of the health educators, one female and one male, were medical doctors from Cuba. The woman had practiced medicine in the U.S. while the man was still trying to obtain records from Cuba to prove he is a physician. Three of the health educators, all female, were born in the U.S. but their parents were from Bolivia, Panama and Honduras, respectively. Two of these women were master's students in public health and anthropology at USF, while the other had some experience in health education. Finally, one female health educator was from Haiti and had previously worked as a case manager at the clinic for which she was hired for FHLS. Once the health educators were hired, the implementation team (Kay Perrin, PhD; Somer Goad, MPH and myself) spent two days training the health educators about how the study would be conducted, and on type 2 diabetes facts if they previously did not know much about the disease.

Three of the health educators left the study for different reasons. One fell ill and was unable to continue her position, one got another job in a higher paying health education position, and one did not feel that she could stay at the clinic



because the administration was not giving her the pay and benefits she was promised when hired for the study.

### **Clinic Observations**

The implementation team traveled to all 14 intervention sites at least one time per month for 12 months. This allowed for clinic observations during site visits. A good amount of time was spent in the clinic waiting rooms and in the health educator offices, which are located near exam rooms. Detailed field notes were taken during site visits and later typed into my personal computer. General observations were noted such as who was in the clinic including patients, family members of patients, and clinic staff. Notes were taken about how many people were in the clinic waiting rooms as well as the overall atmosphere of the clinics, whether they were crowded and loud or empty and quiet. In addition, notes were taken on general interactions with clinic staff, among clinic staff, and between clinic staff and their patients.

### **Class Observations**

During the fall of 2002 and spring of 2003, I traveled to 12 sites to observe the bilingual health educators teaching the type 2 diabetes classes in Spanish. Classes had anywhere from one to eight Spanish-speaking patients. Classes were taught using flipcharts that use few words and many pictures to explain either type 2 diabetes or hypertension in an easy to understand format. Patients also followed along in their own workbooks. Classes lasted from one to three

hours, depending on how many patients were in the classes, the health educator's method of teaching, and/or the chapter being taught.

During the classes, I acted strictly as an observer rather than as a participant-observer. Occasionally, the health educators or patients would ask an opinion of me, or for an answer they did not know, but this did not happen very often, and I was usually busy taking notes on what was transpiring in the class. In total, I observed 21 Spanish classes. Detailed hand-written field notes were taken during the classes in a notebook and later typed into my personal computer, to which only I have access. As much as possible, what happened in the classes was noted with particular attention to interactions between the health educator and the patient, patient interaction and class involvement, discussions of food and diet, and any cultural concerns related to diabetes. Quotes were taken as often as possible. Patients were not identified by their names but rather by pseudonyms or numbers.

### **Interviews**

In addition to class observations, in-depth interviews were conducted (in English) with the bilingual health educators who teach the Spanish curriculum to get their opinions and experiences with the program. A structured interview guide was developed based on the issues in the literature review and the research questions (see Appendix B) Dr. Forthofer, my internship supervisor. My thesis committee made comments and corrections to the interview guide before

the final version was sent to and approved by the Institutional Review Board (IRB) at USF.

Interviews were conducted in person when possible, but more commonly over the telephone as some of the sites are considerable distances from Tampa. Interviews lasted anywhere from 30 to 60 minutes. For the most part, the interviews were casual and friendly as I had become well acquainted with the health educators over the year. Since the interviews were commonly conducted via telephone, detailed notes were taken during the interview, rather than recording them. After notes were taken, the interviews were immediately typed so that no valuable information was misconstrued or forgotten.

### **Patient Satisfaction Survey**

Much later in the study, the implementation team thought it would be prudent to not only collect the data on patients from their baseline and follow-up interviews, blood sugar readings and medical chart reviews, but also to collect the patients' actual opinions of and experiences with the program. The implementation team, Co-PI Kay Perrin, Implementation Coordinator Somer Goad, and myself, developed a patient satisfaction survey using what we thought the patients might want to tell us based on class observations and discussions with the health educators. The survey was never tested with the patients as there was no time for this process, and the questions were basic and left room for additional comments by the patients.

Once the English version was completed, I was responsible for translating the survey into Spanish. As has been evident in the past, it can be disastrous when an English-speaking person, even with fluency in Spanish, tries to translate something into writing. Therefore, I asked a friend who is a native Spanish-speaker to help translate the survey. Once this was completed, it was sent to four of the Spanish-speaking health educators for review and comment. Two of them responded with similar comments and appropriate changes were made so the survey would be most suitable for the diverse Spanish-speaking population in the community health clinics.

The implementation team then sent both versions of the survey to the rest of the FHLS team, consisting of seven others, for their review and comment. Since the patient satisfaction survey was conceived so late in the study, there was not time to test it with patients. Final changes were made after comments from the FHLS team, and the survey was sent to all of the health educators with a letter (see Appendix C) explaining the survey. In addition, self-addressed stamped envelopes were provided so that the patients could take the surveys with them and complete them anonymously as it asks questions about the health educator and his/her abilities. The surveys came directly to the implementation team, and were entered into an Access database as they were received. A total of 31 Spanish surveys were returned.

## **Limitations**

There were many limitations to this internship. The first was that it was difficult to observe as many classes as would be necessary to achieve statistical power in the data analysis. Some clinics did not have many patients enrolled in the program because patients did not meet the eligibility criteria for the program. In addition, patients did not show up for classes for a variety of reasons including but not limited to: lack of desire to participate; lack of time; lack of transportation; and job constraints. Patients also dropped out of the study for a variety of reasons including those just mentioned and the fact that many patients, especially migrant farm-workers, moved away and were unable to be located. Since the clinics spanned the entire state of Florida, and class schedules in each clinic varied, it was difficult to see all of the Spanish classes I would have liked in one week. Despite the real and potential limitations involved in the class observations, I was able to observe 21 Spanish-speaking classes, almost all of which had at least three patients.

Another weakness was my limited Spanish-speaking ability. While I understood most of what was being said in the Spanish-speaking classes, I may have missed some of the discussion or misinterpreted what was being said. One way I resolved this was to take detailed notes, and then to clarify points with the health educator when the class concluded. Furthermore, it would have been ideal to interview program patients to get direct opinions of the program. However, due to time and travel constraints, my limited Spanish-speaking ability,

and the fact that patients were already giving so much time to the program and study, it was too inconvenient to obtain interviews. However, interviewing the health educators proved very useful since they are deeply involved with their patients and the program, and they had the most to say about what does and does not work in the Spanish curriculum.

One drawback in interviewing the health educators was that three of the Spanish-speaking health educators left the program before I had a chance to interview them about their opinions of, and experiences with, the Spanish curriculum. It is likely that some valuable information was missed from these health educators. Furthermore, most of the health educators were interviewed over the telephone. While this method worked fine, it may have elicited more information had the interviews been conducted in person. However, I feel confident that the 10 interviews I was able to complete provided ample and thorough information for the purposes of this thesis.

A further limitation involved the patient satisfaction survey. The survey was conceived late in the study and there was no time to do proper pre-testing. The evaluation team of FHLS was not very interested in using the survey for its statistical review and it was not as important to the study. However, the implementation team felt it was important to at least attempt to get the patients' perspectives of the education program. Thirty-three surveys were completed and returned and should prove useful in understanding what patients thought of the program.

## **Conclusion**

The implementation phase of the FHLS continued into October of 2003 but because of time constraints, I limited my data collection to the fall of 2002 and the spring of 2003. Chapter Four discusses the results from the data collected during this internship. Chapter Four also discusses the results from this sub-study. The results are presented in the context of the research questions that were presented in this chapter.

## Chapter Four

### Results

This chapter discusses the results from the data gathered from interviews with the 10 health educators, observations of classes and clinics, and the patient satisfaction survey. Data were coded by themes discussed in the literature review, and other important aspects relevant to this diabetes education program. The computer software program *Ethnograph* was used to code the data. The results of the data are presented in the context of the research questions presented in Chapter Three.

#### **Research Question 1: Is the language and presentation of the Spanish curriculum appropriate?**

One hundred percent (100%) of the health educators said that the low literacy level of their Spanish-speaking patients was an issue. All of the health educators said that almost all of their patients were illiterate in English and most of them in Spanish as well. All of the health educators also thought that the simple graphics and pictures in the curriculum made it easier for the Spanish-speakers to understand.

As just mentioned, 100% of health educators thought that the pictures and straightforward text made the curriculum easy for their Spanish-speaking patients to understand. They all thought that the simple pictures and little



amounts of text were the best part of the curriculum. Other health educators had problems with a few of the translations but noted, “nothing major” that needed to be changed in the translation of the curriculum. One health educator noted that the term “*leche desnatada*” was not appropriate for skim milk and should be “*leche descremada*.” She and her patients were not sure what “*desnatada*” was but all agreed it was an incorrect translation. Another health educator was not sure about the word “*encurtidos*,” and whether it meant that patients should not have anything in vinegar or if it meant something else. Yet another health educator said that the word used for sweeping was incorrect (should be *barrer* ). Another pointed out that on one of the flip charts, the explanation on the back of one page is in English rather than in Spanish.

Eighty percent (80%) of the health educators thought that the curriculum needed work but when probed for specifics, had difficulty thinking of any. They were asked later, via email and in person, if they had thought of specifics but they could not name any. These 80% mentioned that they would like to see a separate curriculum for Mexicans from the rest of Latino groups from Central and South America as Mexican Spanish is quite different from that of other Spanish-speaking countries.

Twenty percent (20%) of the health educators said that their patients had mentioned not identifying with the characters used in the curriculum. The curriculum cover features a diverse group of people, but throughout the curriculum the most commonly used characters are a Black man and a White

woman. The Spanish-speaking patients of these two health educators said they would have liked to see more Latinos in the curriculum because it would be easier for them to identify with the topic. The other 80% of health educators also mentioned this as an issue for their Spanish-speaking patients.

**Research Question 2: What issues are important to the Spanish-speakers in relation to diabetes?**

**2a. What are the causal ideas and understanding about diabetes?** Health educators were asked what their patients said about how they got diabetes.

Table 1 below summarizes what the health educators said about what their patients' attributions for their diabetes. Eighty percent (80%) of the health educators heard more than one explanation for how their patients got diabetes. Individual patients usually named more than one cause of their diabetes. Twenty percent (20%) of health educators heard heredity as the only attribution of diabetes.

Table 1: Causes of diabetes

<b>Health Educator</b>	<b>Attributions given by patients in order of importance</b>
1	Eat too much sugar Don't take care of themselves Stress Heredity
2	Not sure Heredity
3	Eat too much sugar Did something bad
4	Heredity Stress
5	Heredity
6	Heredity

Continued on the next page

Table 10 (Continued)

7	Not sure—mention family but don't connect to genetics Pregnancy
8	Stress Accident (on the job or fell) Heredity
9	Heredity Horrorifying experience or car accident
10	Eat too much Not exercising Heredity

**2b. What symptoms associated with diabetes are discussed?** Health educators were asked about the diabetic symptoms most described by their Spanish-speaking patients. In addition, symptoms were discussed in many of the classes and noted during class observations. Table 2 summarizes the symptoms described by the Spanish-speaking patients in class, and mentioned by health educators during the interviews. All of the health educators (100%) said that the symptoms experienced by the Spanish-speakers are about the same as the English-speakers except for the mention of *nervios* and *temblors*. *Nervios* is not necessarily meant to mean the folk illness *nervios* but simply as a symptom of diabetes. One health educator (10%) said that the difference between the English-speakers and the Spanish-speakers is that the English-speakers associate these symptoms with diabetes, whereas the Spanish-speakers do not.

Table 2: Diabetic symptoms

Symptom	Number of times mentioned	Percent
Tired	7	23%
Thirsty	6	19%

Continued on next page

Table 2 (Continued)

Nerves ( <i>Nervios</i> )	4	13%
Headaches	4	13%
Tremors ( <i>Temblors</i> )	3	10%
Blurred vision	3	10%
Pee a lot	3	10%
Constant Hunger	2	6%
Dizziness	2	6%
Cold/Chills	1	3%

n = 31 (21 class observations and 10 interviews)

**2c. What foods and dietary issues are commonly mentioned and**

**discussed?** Eighty percent (80%) of the health educators named diet as the most important issue to the Spanish-speaking patients when it comes to diabetes management. The other 20% named diabetic supplies (glucose monitors and testing strips) as the most important thing to the Spanish-speakers, with diet being the second most important thing. Health educators said supplies are important to the Spanish-speakers because many of them are uninsured due to legal status and cannot afford the supplies.

All of the health educators (100%) said that prior to their enrollment in the program their Spanish-speaking patients had trouble or simply could not diet properly to control their diabetes. This was also the case throughout the study, although 80% of health educators said that their Spanish-speakers were able to successfully make small changes to their diet. Twenty percent (20%) of the health educators said they referred their patients having a lot of trouble controlling their diet to a dietician at the clinic.

Health educators were asked about the barriers to a healthy diet faced by their Spanish-speaking patients. Table 3 summarizes the responses given by

health educators to diet barriers. Some health educators named more than one barrier.

Table 3: Barriers to healthy diet

<b>Barrier</b>	<b>Number of health educators indicating</b>	<b>Percent</b>
Cultural issues	6	60%
Cost of healthy food	4	40%
No control/can't stop eating	3	30%

n = 10

Cultural issues were most notably traditional Latino foods and cooking styles such as frying that may not be healthy but are a staple of Latino diet; difficulty adjusting to daily eating patterns such as eating the largest meal in the evening as opposed to the afternoon; and acculturation to American foods that are unhealthy such as fast foods. Forty percent (40%) of health educators said that their Spanish-speaking patients ate fast food quite often. Of those who said their patients ate fast food, 50% said that the younger patients were more likely to talk about eating fast food than the older patients.

Health educators were asked about what they thought or knew about what their Spanish-speaking patients eat. In addition, notes were taken during class observations about what Spanish-speaking patients said about food. Table 4 is a summary of all the foods mentioned by the health educators and/or by the patients themselves during class.

Table 4: Foods commonly mentioned

Food	Times mentioned	Percent	Food	Times mentioned	Percent
Tortillas	15	48%	Fruits	2	6%
Rice	14	45%	Oil	2	6%
Beans	14	45%	Potato	2	6%
Plantains	13	42%	Refried Beans	2	6%
Bread	7	23%	Yucca	2	6%
Fried Food	7	23%	Arroz con Leche	1	3%
Soda	6	19%	Bacon	1	3%
Butter	6	19%	Canned Foods	1	3%
Cheese	5	16%	Canola Oil	1	3%
Chicken	5	16%	Eggs	1	3%
Fish	5	16%	Empenadas	1	3%
Arepas	4	13%	Fajitas	1	3%
Meat	4	13%	Flan	1	3%
Coffee	4	13%	Ground Beef	1	3%
Bananas	3	10%	Ham	1	3%
Cereal	3	10%	Lard	1	3%
Corn	3	10%	Olive Oil	1	3%
Juice	3	10%	Papaya	1	3%
Licuado (milkshake)	3	10%	Pasta	1	3%
Salad	3	10%	Yam	1	3%
Soup	3	10%	Yautia	1	3%
Turkey	3	10%	Soy Milk	1	3%
Vegetables	3	10%	Sugar Cereal	1	3%
Avocado	2	6%	Sweet Potato	1	3%
Chicharonnes	2	6%	Sweets	1	3%
Chuletas	2	6%	Tacos	1	3%
Crackers	2	6%	Watermelon	1	3%
Dessert	2	6%			

n = 31

All of the health educators (100%) said that rice, beans, tortillas and plantains (*platanos*) were the most important foods for Latinos. Seventy percent (70%) of the health educators said that the way food is prepared is a big issue for

Latinos because they usually fry everything. Tortillas are often fried in butter, oil or lard, and meats are fried as well.

Eighty percent (80%) of the health educators said that their Spanish-speaking patients don't drink water. Eighty percent (80%) of health educators also said that their Spanish-speaking patients do not or rarely drink milk. If they do drink milk, they drink whole milk. The reasons they give for not drinking milk are that skim milk tastes like water, they just don't like milk, and their stomachs are not accustomed to milk. Twenty percent (20%) of health educators said that their Spanish-speakers do buy and drink skim milk now.

Sixty percent (60%) of health educators said that their Spanish-speaking patients talked about their stomachs not being accustomed to certain foods such as milk, and food practices such as eating a big meal in the evening rather than in the middle of the day. They also said that patients talked about being accustomed to certain foods such as sweets, coffee, tortillas and beans and could not change those eating habits. This was especially true for older patients.

Eighty percent (80%) of health educators said that food label reading should be included in the diet section of the curriculum—in both the English and Spanish versions of the curriculum. However, it was even more important for the Spanish version to include a label written in English with the Spanish translations next to it because many Spanish-speakers do not read English. Although not included in the curriculum, 40% of the health educators teach their patients how to read food labels.

**2d. Is alcohol discussed? If so, what is said?** Health educators were asked about their patients' consumption of alcoholic beverages. In addition, observations were made during classes about discussion of alcohol by patients. Eighty percent (80%) of the health educators said that their Spanish-speaking patients did drink alcohol. Of these 80%, 25% said that they thought their patients lied in the baseline interview, claiming that they do not drink alcohol when, in fact, they do. Another 62.5% of those who said their patients drink alcohol said that it is the men who drink more often than women, and usually drink beer, while 12.5% of those who said their patients drink alcohol said that women drink mixed drinks. The other 20% of health educators said that they were sure that most of their patients did not drink alcohol because the patients were adamant about not consuming alcohol in the baseline interview conducted when the patient enrolled in the study.

In addition, in 48% of class observations patients, asked about the effects of alcohol on blood sugar. In only a couple classes did patients discuss former alcohol abuse.

**2e. Is ideal body image discussed? If so, what is said?** One hundred percent (100%) of the health educators said that most of their Spanish-speaking patients are overweight. Within this 100% who said their patients are overweight, 30% of health educators said that their patients do not talk about body weight or body image. Twenty percent (20%) of health educators said that most of their patients should lose 30-40 pounds, but they see themselves as thin. Another



20% said that their patients think they have to lose 5-10 pounds but really need to lose a lot more. Ten percent (10%) said that many of her patients do want to lose weight, except for a few who think that it is good to be fat. This health educator said that body fat is a sign of wealth, so it's good to be overweight. One class observation noted that women discussed that it is better to be a little fat.

**2f. What is said about exercise and barriers to exercise?** One Hundred percent (100%) of health educators said that almost all of their patients gave excuses as to why they could not exercise. See Table 5 below for a summary of excuses patients gave to the health educators for not being able to exercise.

Table 5: Exercise excuses

<b>Excuse</b>	<b>Number of health educators noting</b>	<b>Percent</b>
Pain	5	50%
Work too hard	4	40%
Don't have money for gym	3	40%
Nowhere to exercise	2	20%
No one to go with	2	20%

n = 10

In addition, health educators had their own opinions about the exercise habits of their Spanish-speaking patients. Only 10% of health educators thought that exercise was one of the most important issues to Spanish-speaking patients. Ten percent (10%) of health educators said that their Spanish-speaking patients were lazy and did not do any exercise, and 10% said that most of his Spanish-speakers really don't have any excuses when it comes to exercise because they do not work. However, another 60% thought that their patients did attempt some exercise. Ten percent (10%) of health educators said that their Spanish-

speakers just don't know about exercise, and 30% said that their Spanish-speakers think they have to go to the gym to exercise. They added that the Spanish-speakers don't realize that brisk walking in their neighborhoods is good exercise as well.

**2g. Are folk illnesses discussed in relation to diabetes?** Health educators were asked if their Spanish-speaking patients ever mentioned any folk illness in connection with diabetes. Surprisingly, 40% of the health educators had never heard the term “folk illness” and did not know what *susto* was and did not consider *nervios* as a folk illness but as more of a symptom. Thirty percent (30%) said that they heard about *susto* often, or mention of a frightening or horrifying experience and accidents in connection with the onset of diabetes. Twenty percent (20%) of health educators did not hear about folk illnesses but were surprised they had not. Ten percent (10%) of health educators had heard about *susto* and *nervios* with other diabetes education programs they had worked on but did not hear it working with this program. See Table 6 below for a summary of responses.

Table 6: Folk illnesses

<b>Health educator response</b>	<b>Number</b>	<b>Percent</b>
Never heard of folk illnesses	4	40%
Heard about folk illnesses a lot from patients	3	30%
Surprised did not hear about folk illnesses from patients	2	20%
Did not hear about folk illnesses with this diabetes program but with others	1	10%

n = 10

**2h. Are home or folk remedies discussed?** Health educators were asked if their Spanish-speaking patients used any home, folk or herbal remedies for the treatment of diabetes. Seventy percent (70%) of health educators heard a variety of home remedies used by their patients to treat diabetes. The remaining 30% had not heard of any home remedies used by their patients. See Table 7 below for a list of home remedies used by patients.

Table 7: Home or herbal remedies

Remedy	Number	Percent
Herbal Tea (not sure what kind)	3	30%
<i>Chayote</i> and cucumber blended	1	10%
Cactus	1	10%
Root from Brazil (plant)	1	10%
Rice Bran	1	10%

n = 10

**Research Question 3: What are the overall experiences with the program of the health educators and the patients?**

Health educators were asked about their overall experience with the Spanish-speaking patients in during the program. Seventy percent (70%) of health educators said that their overall experience with the Spanish-speakers was positive. The other 30% of health educators said that their Spanish-speaking patients were less compliant than their English-speaking patients, noting that the Spanish-speakers drop out of the program earlier and more often than the English-speakers, and that once the Spanish-speakers get the supplies (blood glucose monitors and testing strips) they don't come back. Ten percent (10%) of health educators said that none of his Spanish-speakers finished the program but had no idea why this was the case, and another 10% said that only

10% of her Spanish-speakers finished the program, while others gave about a 50% program completion rate for Spanish-speakers (about average for the entire program.) Another 10% thought that many of the Spanish-speakers might not finish the program because they are migrant workers and leave the area.

### **3a. What issues are involved in the Spanish-speaking classes?**

Eighty percent (80%) of health educators thought that the Spanish-speakers had good class attendance, and often better than their English-speaking patients. The other 20% of health educators thought that the Spanish-speakers showed worse attendance than the English-speaking study patients. These two health educators noted that the Spanish-speakers either never showed up or never finished all of the classes. They did not know why this was the case.

Eighty percent (80%) of the health educators said that the Spanish-speaking study patients really get involved in the classes, asking a lot of questions and sharing their experiences with diabetes. Ten percent (10%) of health educators said that the Spanish-speakers only get involved and open-up in a small group setting. This health educator said that in bigger classes the Spanish-speakers were quiet and subdued. Ten percent (10%) of health educators thought that her Spanish-speaking classes were much quieter and less involved than her English-speaking classes. She thought this might be out of *respeto* but she was not sure why this was the case. Eighty-one percent (81%) of class observations demonstrated a lot of involvement by the Spanish-

speakers. The classes that were quieter were those where the patient was one-on-one with the health educator.

Seventy percent (70%) of health educators did not think that *respeto* was an issue in the classes. They thought that their Spanish-speaking patients were not intimidated or did not ask questions out of respect for their status as a teacher. These seven health educators thought it was their accessibility to and familiarity with their patients that allowed the patients to see them as knowledgeable equals. Thirty percent (30%) of health educators thought that their patients would sometimes be quiet or not ask questions in classes or privately because of *respeto*. They could not be sure of this but could not think of any other explanation.

Ninety percent (90%) of health educators said that Spanish-speakers were more likely to bring family members or friends to class. However, on the patient satisfaction survey, only 25% of the patients said that they brought a family member to class. This was not much different from the English-speaking patients, of which 19% reported bring family members. Out of the 90% of health educators who said that Spanish-speakers were more likely to bring family members, 77% said that those who do bring family members would usually bring the person who does the cooking in the household. In addition, 77% of those who said Spanish-speakers were more likely to bring family members or friends to class also said that men will bring their wives and women will bring their daughters. Twenty-two percent (22%) said that wives will bring their husbands,

and 11% said that wives never bring their husbands. All of the health educators reported that sons and brothers never came to class. Ten percent (10%) of the health educators said that more of her English-speaking patients brought family members to class. She thought this was strange and had expected the opposite.

**3b. What is the overall opinion of the program materials?** On the patient satisfaction survey, patients were asked what program materials they liked and used the most. The one item that the Spanish-speakers said they liked and used the most (62.5%) was the Passport to Health (*Passaporte a Salud.*) This is like a real passport with the patient’s photo inside, where they can record medications, doctor’s appointments and their blood sugar numbers twice a day. The second favorite item mentioned by 53% of patients was the pillbox. The materials they liked or used the least were the magnets (18.5% did not use) and the calendar (20% did not use.) The other responses were spread out among the other materials.

**3c. What logistical issues are involved for patients coming to classes or meetings with the health educator?**

Patients in the study were asked on the patient satisfaction survey how they came to class. Table 8 is a summary of the answers given by patients on how they got to the clinic during class times.

Table 8: Transportation to clinic

Method of transportation	Number of patients indicating	Percent
Drove	18	58%
Someone drove me	7	23%
Walked	6	19%
Rode the bus	1	3%

n = 31

Health educators were also asked about transportation issues with their patients. Sixty percent (60%) of health educators said that transportation was a major barrier to getting their patients to come for appointments and classes. Of that 60%, 16.5% thought that their patients just used lack of transportation as an excuse not to come because public transportation in the area was very good. Another 30% of health educators said that their patients were often late to class because of the bus or waiting for someone to take them to the clinic.

Health educators mentioned the same modes of transportation as the patients but added more specifics. One health educator said that her patients would hitch a ride or pay someone to take them to the clinic, and another health educator said that a large extended family usually shares one vehicle so scheduling can be difficult. Forty percent (40%) of health educators said that their clinic provided transportation but of those, only 25% said that her patients used the service. This health educator said that she set up transportation for about 75% of her patients. The other 75% who said their clinic provided transportation said that their patients did not use the service. One said the transportation was mainly for pregnant women, one said only Americans use it (she did not know why), and one did not know why they did not use it.

Health educators were asked about the occupations of their Spanish-speaking patients. Table 9 is a summary of the occupations held by Spanish-speaking patients.

Table 9: Occupations

Occupation	Number of health educators indicating they had patients in occupation	Percent
Field worker	8	80%
Home maker	8	80%
Maid	5	50%
Retired	4	40%
Construction	2	20%
Other service industry	2	20%

n = 10

Eighty percent (80%) of the health educators said that their Spanish-speaking patients missed classes or could not come because of their long work schedules. These health educators noted that it might be more important to go to work than to come to the clinic and their patients could not afford to take time off from work. This was especially true for men who were more likely to be working out of the home. The other 20% said that many of their Spanish-speaking patients do not work so that there was no reason they could not come to the clinic for classes.

**Research Question 4: What other issues and core cultural values are involved in participating in this program and navigating the health care system in general?**

Although health educators were not specifically asked about the immigration status of their Spanish-speaking patients, the subject came up in casual conversations with the health educators during regular site visits. See Table 10 for a summary of health educator comments about the immigration status of their Spanish-speaking patients.



Table 10: Immigration status

<b>Health educator comments</b>	<b>Number</b>	<b>Percent</b>
Illegal but don't talk about it	4	40%
Illegal	2	20%
None are illegal (if they are they don't talk about it)	2	20%
Legal status never comes up	1	10%
Illegal and a lot of talk about it	1	10%

n = 10

While 20% of the health educators said that they thought illegal status kept Latino patients from the program, the other 80% did not think this was an issue because the clinics were set up to cater to immigrants.

Twenty percent (20%) of health educators said that their Spanish-speaking patients mentioned not wanting to burden their families with their disease and that there is not much family involvement. These health educators also noted that their diabetic Spanish-speaking patients kept their disease completely separate from the family. These patients told the health educators that they cooked things differently for themselves than they did for the rest of the family. One of these health educators also stated that even in large extended families where the diabetic could get a lot of help, the family was not involved.

Eighty percent (80%) of health educators said that there are gender differences in family involvement in disease management. The health educators noted that if it was the woman of the household who had diabetes, no one really cared. The women did not burden their families with their disease; they cooked separately for themselves, and cooked the family the foods to which they were accustomed. If the man of the household had diabetes he was catered to and taken care of by the females in the household whether it was the wife or

daughters. Twenty percent (20%) of health educators said that they did not really notice any gender differences in family involvement in disease management.

One Hundred percent (100%) of the health educators said that they try to get the whole family involved in disease management because family members are also at risk for getting diabetes if one family member already has the disease. Sixty percent (60%) of health educators said that their patients said they were trying to get the rest of the family involved in changing their diets but were not always successful as seen above. Forty percent (40%) of health educators said that they knew for sure that their patients were not trying to change the diet for the rest of the family, nor trying to get the family involved.

When asked if their Spanish-speaking patients expressed fatalistic views in relation to their diabetes, 70% of the health educators said “yes,” noting that there is a lack of acceptability of the disease, and that their patients think that there is nothing they can do about diabetes until they start coming to class and learning how to manage the disease. The other 30% of health educators did not think their patients were fatalistic, but had positive outlooks on life and their diabetes. However, 80% of health educators said that their patients are in denial about the severity and consequences of diabetes.

Ninety percent (90%) of the health educators thought or knew that their Spanish-speaking patients were depressed. Only 10% said that they did not think their patients were depressed. Patients gave many reasons for depression.

Those health educators who suspected that their patients were depressed but did not receive confirmation (30%) said this was so because depression or talking about depression is considered a weakness. See Table 11 below for a list of reasons for depression.

Table 11: Reasons for depression

<b>Reason for Depression</b>	<b>Number of Health Educators citing</b>	<b>Percent</b>
Sexual side effects (erectile dysfunction)	2	20%
No control (over diabetes)	2	20%
Can't eat what they want	1	10%
Other factors (bad home life, no job, no money) plus diabetes	1	10%
Depressed but don't want to talk about it	3	30%

n = 10

In conclusion, this chapter has presented the results from the data collected from interviews with the health educators, class observations, and the patient satisfaction survey. The results were presented in the context of the research questions presented in Chapter Three. Chapter Five provides an analysis and discussion of the results in the context of the literature presented in Chapter Two.

## **Chapter Five**

### **Analysis and Discussion**

This chapter analyzes and discusses the results from Chapter Four. Again, the analysis and discussion are framed within the research questions presented in Chapter Three, and in the context of the literature review presented in Chapter Two. There are several important findings from the results that are discussed here. The most important issue is the diet section of the curriculum, which should include more culturally appropriate foods and include food label reading. Other important issues for which recommendations are made in the next chapter include gender differences in family involvement in disease management; explanatory models of diabetes including folk illnesses; use of home remedies; alcohol consumption, erectile dysfunction and depression; body image and concepts of exercise; lack of pictorial representations of Latinos in the curriculum; and development of separate curriculums for Mexicans and other Latinos.

#### **Research Question 1: Is the language and presentation of the Spanish curriculum appropriate?**

As found by previous research (Dreger and Tremback 2002; Flores 2000), illiteracy among the Spanish-speakers is a major issue that needs consideration in any health education program for Latinos. All of the health educators said that

illiteracy was an issue with most of their Spanish-speaking patients. One health educator said, *The women [who were just in class] are illiterate and only had a couple of years of schooling. They were intimidated to take a class at first but I talked them into it and they are doing very well.* Another said, *[The Spanish-speakers] were scared of the quiz at the end of class. They may not have had much schooling and were afraid of not doing the right thing.*

Other health educators said that they had to repeat a lot of things for their Spanish-speaking patients before they understood the concepts noting, *[The Spanish-speakers] have very low education levels. I have to repeat things a lot for them;* another telling me, *I had to repeat a lot of things for the Spanish-speakers. The English-speakers were more knowledgeable and had higher education levels.* This shows the importance of having a program, such as Pfizer's, that keeps teaching at a low literacy level for easy understanding.

Others working with Latino populations and health education have noted the importance of language, suggesting that Mexicans have a separate curriculum from other Latino groups (Hall 1987; Brown and Hanis 1999). Most of the health educators indicated that the translations in the curriculum were pretty good except for a few errors. Most also said that Mexicans use words that are much different than other Latino groups. Ideally, there would be a separate curriculum for each ethnic group but this is not always possible given time and money constraints.

The Pfizer curriculum successfully follows what others in this field have said is one of the most important in designing a health education program: using a low literacy level with easy to understand pictures (Hall 1987; Brown and Hanis 1999). While illiteracy is an issue, the Pfizer program presents the curriculum and workbook in an easy to understand manner with very few words and easy to understand pictures. All of the health educators thought this was the best thing about the curriculum, and that very few changes should be made in terms of language and presentation. One health educator noted, *The best part of the program is the pictures. It makes everything easy to understand, especially for those who cannot read.* And another said, *I like the pictures a lot in the curriculum because illiterate people still know what it is "saying."*

Others have noted the importance of being able to identify with others who have the disease, and suggest using pictorials of people from the target population's ethnicity and/or culture (Hall 1987; Brown and Hanis 1999). Although only 20% of the health educators mentioned it, the characters in the pictures in the curriculum may not be as culturally sensitive as they could be since they feature a white woman and a black man and few representations of Latinos.

**Research Question 2: What issues are important to the Spanish-speakers in relation to diabetes?**

**2a. What are the causal ideas and understanding about diabetes?** The literature suggests that Latinos most often name heredity as the cause of diabetes but cannot alone explain disease onset (Hunt et al. 1998; Weller et al.

1999). Often other explanatory models are given in addition to heredity. In their study, Weller et al. (1999) found that Guatemalans were likely to name stress and emotions as a cause for diabetes and that Mexicans were likely to name *susto* as a cause (*susto* is discussed further in section 2g below.) As the literature proposes, in this study heredity was named by participants as the main cause of diabetes but could not alone always explain how patients got the disease. Participants usually told health educators several causes for why they had diabetes with heredity being the central one. However, it is clear from the literature and this internship that other attributions must be recognized and are still part of many Latinos' explanatory models of diabetes.

For example, three of the health educators said their patients thought eating too much sugar was the cause of their diabetes, another three said their patients thought stress was the cause, and two said that their patients thought an accident or horrifying experience caused their diabetes.

In connection to stress, one health educator explained, *Some say they got it because of the way they came to the U.S. being stressful. All my patients say things like this, not just the Mexicans.*

**2b. What symptoms associated with diabetes are discussed?** The literature has shown that diabetic symptoms named by Latinos are consistent with the biomedical model (Weller et al. 1999). As mentioned before, the Spanish-speaking patients named the same symptoms as the English-speaking patients. The only notable difference was the frequent naming of *nervios* as a

symptom. However, this seemed to be mentioned more as a symptom than as a folk illness.

**2c. What foods and dietary issues are commonly mentioned and discussed?** Others have noted the importance of health education programs that emphasize culturally appropriate foods for Latinos (Brown and Hanis 1999; Hall 1987). Latino diet is far different from the traditional American diet as seen both from this internship and others who have written on the topic (Baer and Nichols 1998). By far, the most important and discussed issue for the Latinos in this internship was diet and food choices. The health educators talked about this often and said it was the most important issue for their patients. The focus most often mentioned during this internship were rice, beans, tortillas and plantains. Other traditional foods that were mentioned were *arepas*, *chicharonnes*, *chuletas* and *empenadas*. It is likely that other traditional foods, as those described by Baer and Nichols (1998), were also discussed when I was not present as an observer.

The health educators emphasized that curriculum should include more traditional Latino foods. Rice and beans are pictured in the curriculum but this is not enough. Following are some of the things the health educators said about the diet section of the curriculum: One health educator from Puerto Rico noted, *The most important issue to the Spanish-speakers is the food part of the curriculum, especially the cultural foods. I would really like to see those included in the curriculum. There are many different kinds of Spanish foods. Americans*



*are so stereotypical about this, whenever they meet a Spanish-speaking person they say things like, "Oh, you must love such and such Mexican restaurant!" as if we are all Mexican and eat Mexican food. Another told me, Diet is the most important issue to the Spanish-speakers. They all eat different. It is difficult to design a menu to help them. In the [curriculum] they tell you about carbohydrates and proteins but I have to go find specific diets for them, otherwise they do not understand these things. And yet another health educator similarly said, Diet is the biggest issue for the Spanish-speaking participants. The curriculum describes more starchy foods than they are used to.*

One of the more important issues for Latinos is that they do not understand what carbohydrates are. The term for "carbohydrates," "*carbohidratos*" is not commonly used in Spanish; many did not understand what the health educator was talking about so they had to be taught the difference between carbohydrates and proteins. If the word is not commonly used in a language or culture, it should not be taught to that group because they most likely will not grasp the concept.

Other cultural issues in association with diet were discussed by the health educators during interviews. Several of the health educators argued for a more culturally appropriate diet section in the curriculum with one noting, *You can't really culturally change these people, they've been cooking like this for 40 years. You can only make suggestions on how to improve.* Another health educator argued, *The biggest barrier to changing diet is the influence from culture. It is*

*very difficult to change a cultural diet. They have been eating these things forever and they are not going to stop now. It is part of their culture.*

One Mexican man in a class exemplified the importance of acknowledging and discussing a culturally appropriate diet with the Latino patients when he said, *My stomach is accustomed to eating certain foods and I cannot switch now. If there are no beans in my food, then it is not food. I will not eat it.*

The health educators argued for what others in the literature have also suggested: culturally appropriate and meaningful diets that Latinos can adopt into their traditional diet (Hall 1987; Baer and Nichols 1998; Brown and Hanis 1999). For example, frying is the main way of preparing many foods in the Latino culture. Therefore, it might not be realistic to tell them to stop frying completely but, rather, to change oils and fry less often. Some health educators also remarked that the curriculum should suggest brown rice as opposed to white rice, which does not have any nutritional value, and advocate corn tortillas over flour tortillas.

However, there were a couple health educators who thought the curriculum was better being more general, and that it is the health educators' responsibility to provide additional teaching on more culturally appropriate foods. The argument here was that the Latino population is so diverse, with so many different foods, that one curriculum could not apply to everyone, so the health educator must teach specifically to the ethnicity of person or people being taught.

Besides emphasizing rice, beans, tortillas and plantains in the curriculum, health educators also argued for a food label reading section in the curriculum. This is important for both English-speaking and Spanish-speaking patients, but even more so for Spanish-speaking because many of them cannot read English, the language in which most of the food labels are written. Since most food labels contain the same basic information, the Spanish-speakers could be taught the few items that are on the labels to help them understand what amounts should be taken in daily.

**2d. Is alcohol discussed? If so, what is said?** The literature has suggested that Latino men may have bigger problems with alcohol abuse than other ethnic groups (Caetano 2003). Alcohol was an issue for many of the Spanish-speakers. Alcohol was discussed in almost 50% of the classes. Furthermore, 80% of the health educators said that their Spanish-speaking patients drank alcohol and that it was usually the men who drink and that they drink beer. The health educators also felt that their patients lied about alcohol consumption, saying that many drank even though they denied it in the baseline interviews. One health educator said of her Spanish-speaking patients, *I think some of them drink alcohol but they lie in the interview. They will say they had one beer a few weeks ago but I don't believe them. Some come to their appointments hungover.* Another health educator told me, *Alcohol comes up but they will consistently lie to me about how much they drink. Their blood sugars show it though. I know they drink but they*

*will not tell me. I think it should be part of the curriculum because it's very important and a lot of them are drinking.*

**2e. Is ideal body image discussed? if so, what is said?** As suggested by Massara (1989) and Cassidy (1991), Latinos, especially Latina women, may think that being a bit overweight is more beautiful than being skinny, as many Americans believe. All of the health educators noted that most of their Spanish-speaking patients were overweight. Only 10% said that their patients want to lose weight. Other patients said that they wanted to lose a little weight, but educators believed they could stand to lose a lot more. During one class observation a woman said the following, *When someone is thin you look at them and think, "What is wrong?" and "When is this person going to die?" But when you are fat people say, "Que lindo!" [How beautiful!]*

Although ideal body image may not be discussed very often, comments like the one above, and others from health educators, demonstrate that the ideal body image for Latinos may be somewhat different than other Americans, and this should be addressed in the curriculum and by the health educators.

**2f. What is said about exercise and barriers to exercise?** Some research (Anderson et al. 1998; Brown and Hanis 1999; Flores 2000) has argued that the family comes first and exercise can be considered a selfish act that takes away from family obligations. The health educators noted that their Spanish-speaking patients who exercise usually go walking, while some prefer dancing, a customary activity in most Latino cultures.

Since all of the health educators said that most of their Spanish-speaking patients gave excuses as to why they could not exercise, it may be important to emphasize the importance of exercise in curriculum. Many thought that the work they did either in the fields or at home was already exercise enough.

One health educator said of his Spanish-speaking patients and exercise, *Some say they like to walk but have no time. Some think they have to go the gym for exercise. Males don't think they have to exercise because they work so hard. I tell them that exercise benefits relaxation. I tell them to exercise for fun and it will release some natural healers and help them get better.*

In addition, farm workers work long, hard hours, leaving little time for the additional exercise necessary to control diabetes. Spanish-speaking patients also thought exercise meant joining a gym and spending money that could be better spent providing for the family.

**2g. Are folk illnesses discussed in relation to diabetes?** As Poss and Jezewski (2002) recently found in their study of the relation between *susto* and type 2 diabetes, there is still a strong connection between the two diseases for Mexican-Americans living in El Paso, Texas and Weller et al. (2002) also found a high prevalence of *susto* in four different Latino populations. In this internship, surprisingly, many of the health educators had not ever heard of folk illnesses or *susto*. This was unexpected because all of the health educators are also Latino. However, other health educators said that they heard *susto* mentioned quite often by their patients

The health educators in this internship who had heard of folk illnesses said that Mexicans were most likely to talk about *susto* or a frightening experience in connection with diabetes. One health educator from Honduras said, *In relation to susto or folk illness I hear people telling me they are panicking. One lady said she had a horrifying experience when she was a child and she knew she was going to get it. Yes, I have heard that a lot, especially from the Mexicans. One man blames a car accident for the diabetes. I do hear that a lot. They think it's related to trauma.* Another from Puerto Rico told me, *I hear about susto a lot, especially from the Mexicans. They also talk about a lot about nervios.*

During one clinic visit, a nurse related a story about one of her husband's relatives who is Mexican. The following is taken from field notes during the site visit: *[The relative] said, "it finally happened." [referring to getting diabetes] When the relative was young he had a big scare and that's why he finally got diabetes. It's going to happen no matter what. The nurse was angry that her husband agreed with his relative's story. They don't want to listen. It's called susto. You can't tell them anything because it's going to happen no matter what.*

Other health educators who had not heard of folk illnesses had other comments. One from Puerto Rico said, *I didn't hear anything about folk illnesses or susto. I have never heard that term before or anything like it.* It is possible health educators did not hear more about folk illnesses because they themselves did not know what they were and/or because they were not looking to discuss such issues based on the curriculum. This also suggests that folk illnesses may

be subsiding in acculturated Latinos and may not be as big an issue as they have been in the past. It may also suggest that people are not comfortable mentioning things like folk illnesses to health educators because they know it does not mesh with the biomedical model, or they may not trust the health educator enough to mention folk illness.

**2h. Are home or folk remedies discussed?** As other research has found (Trotter 1981; Winkelman 1989; Zaldivar and Smolowitz 1994), home remedies are used by Latinos in the treatment of diabetes. In this study, 70% of the health educators had heard of their patients using some sort of home remedy. While most of the Spanish-speaking patients were also on prescribed medications, use of home remedies was also commonly used. Although it is likely the case that Latinos in this study believe that type 2 diabetes is best treated by a doctor as others have found (Weller et al. 1999), home remedies are still sometimes used, and health educators should be aware of this since dangerous interactions can occur between prescribed medications and home remedies (Winkelman 1989; Pachter 1994).

**Research Question 3: What are the overall experiences with the program of the health educators and the patients?**

In general, both the health educators and the Spanish-speaking patients had a very positive experience with the program. The patients were particularly happy to have education from Latino health educators, and to receive free testing supplies and grocery store gift certificates. One health educator noted, *I have enjoyed the program and I think they have too. Most have completed the*

*program because of the free supplies. They are very friendly and willing to participate. Another said, They are just happy that there is someone who speaks their language teaching the classes. And someone who can break it down for them. I make it applicable for their culture. And yet another had this to say, They just really want the program to stay. They want to know if anything more will come. I would have at least 500 patients if I had gotten all that were referred to me.*

Only a couple of health educators said that their experiences with the Spanish-speakers were not positive. These health educators said that their patients were non-compliant and either did not show up for class or never finished the program. One health educator said, *The Spanish-speaking participants are not necessarily as compliant as the English-speaking. Once they get the free stuff they never come back. One had a sugar of 390. They are very non-compliant. One lady complained that she could not afford her test strips but then had enough money to go to Mexico for two months!*

**3a. What issues are involved in the Spanish-speaking classes?** Although the literature suggests that Latinos may be quiet out of respect for professionals (Marin and Marin 1991), *respeto* did not seem to be a reason for quietness here. Class attendance and involvement by the Spanish-speakers was good according to the health educators and class observation notes. Only a few of health educators thought the Spanish-speakers were more subdued in class. *Respeto*



may not have played a role because the health educators are also Latinos and tried to act more like friends than authorities with their patients.

The value of collectivism (Marin and Marin 1991) could also have played a role in the fact that most of the health educators noted that their patients were very involved in classes and friendly with each other. One health educator said, *There is a big difference between the English-speaking and the Spanish-speaking classes. In the Spanish-speaking they are more friendly with each other. One man brought coffee for everyone in class. There is much more comradery. The Spanish-speakers respond to this and they like talking about their disease with each other. It's like a small family in class. The English-speakers are not like that.*

#### Family in Class

Literature suggests (Flores 2000) that the family would be more involved in disease management as compared to non-Latino white families. In this study, the data on family attendance in class are unclear. While 90% of the health educators said that Spanish-speaking patients were more likely than English-speakers to bring family members to class, only 25% of the patients themselves said that they did, while 19% of the English-speaking patients said that they brought family members. These data do not seem to support the literature that argues that Latino families are much more involved than non-Latino Whites (also see section under research question 4 below.)

**3b. What is the overall opinion of the program materials?** The Spanish-speaking patients found the Passport to Health the most useful and enjoyable program material. This could be for several reasons, including having an easy place to write down blood sugar numbers, medications and doctor's appointments. For patients who are not legal citizens, or have never had a passport, it could give them a sense of pride to have a document that resembles a real passport, even including their photo on the inside cover, something that they may never obtain.

**3c. What logistical issues are involved for patients coming to classes or meetings with the health educator?**

Transportation

Although previous research (Chesla et al. 2000; D'Arrigo and Keegan 2000) has suggested that one major barrier to health care for Latinos is transportation, that was only partly true here. Most of the patients said that they drove themselves to the clinic for classes and scheduled appointments. However, the health educators did see transportation as a problem for many of their patients, although one just thought they used that as an excuse not to come to classes saying, *Many of them do mention transportation as a barrier to coming to classes and appointments but I think that is just an excuse sometimes because there is a decent public transportation system here.*

It could also be the case that while patients said they drove themselves, there could be one car for an extended family, making it difficult to schedule time

for use of the car. One health educator said, *There are problems all the time with transportation. One member of the family will have a car, usually a member of the extended family. If we had a good public transportation system they would use it.*

Health educators should ask their patients how they get to class, if transportation will ever be a problem for them, and offer alternatives. Some of the clinics have transportation but the patients may not be aware that it exists, or as one health educator noted, *There is also a transportation problem, a big problem. They get a ride from a friend or a co-worker. The clinic has transportation but there is priority for pregnant women.*

### Occupations

As others have noted (Chesla et al. 2000; D'Arrigo and Keegan 2000), occupations such as migrant farm workers, home makers, and maids can keep Latinos so busy that they cannot find time or energy to participate in a health education program. As mentioned earlier in relation to exercise, long hours and strenuous work can prevent people from being able to get the medical care they need, the health education they need the proper diet and exercise routines. Working to support the family is the most important thing; spending the time to concentrate on health and health care can get in the way.

**Research Question 4: What other issues and core cultural values are involved in participating in this program and navigating the health care system in general?**

*Familismo*

As suggested above, family is a big factor in all parts of Latino culture (Anderson et al. 1998; Brown and Hanis 1999; Flores 2000). Importance placed on the family could keep Latinos from spending the time, money and energy necessary to come to the clinic and health education classes. Taking care of oneself is considered selfish and not lending to the support of the family. Therefore, it is important that the family become involved in disease management of the type 2 diabetic, and that the whole family make changes since they are also at risk for getting the disease.

There are evident gender differences in disease management that need to be taken into consideration when teaching a health education program for Latinos. Here it was found that if the woman is the diabetic, she received little or no support from the family whereas, if the man is diabetic, he received a lot of support from the family, was often taken care of and had his needs catered to. Health educators had the following things to say about the gender differences in disease management: *If it's a woman who has diabetes there is not much attention paid to her. The family is not involved in disease management if it is the woman who has it. Another health educator observed, If it is a woman who has diabetes she does everything for herself. She might ask for help when she is testing [her blood sugar] but she does everything else on her own. If a man has*

*diabetes he gets a lot more help from the family. Another said, It is easier for men to change eating habits. Women are very sensitive about their husbands. They obey and they want to help the men get better and live longer. The men don't care about the women when they are the ones with diabetes.*

### Respeto

*Respeto*, or respect, does not seem to be a huge issue in this study as other research as suggested (Marin and Marin 1991; Flores 2000). A couple of the health educators thought that it might be a reason why some of their Spanish-speaking patients are so quiet, but others did not think this was an issue because they are also Latinos and try to deal with their patients on a very relaxed and personal level. In addition, the health educators said that their patients felt comfortable and safe at the clinics. Most of the clinics employ many Latinos and/or Spanish-speakers, making it easier for the Spanish-speaking populations to navigate the clinic system.

The other core cultural values of collectivism and *simpatica* could also play a role in the implementation of the health education program. Some of the health educators noted that their Spanish-speaking classes became more cohesive and friendly than their English-speaking. However, others thought that the Spanish-speakers do better in smaller groups because they are more private and like to keep sensitive topics to themselves. In either situation, the health educator should be aware of the patients' preferences and try to establish friendly and relaxed interactions. This did not seem to be a major issue here as

the health educators are also Latinos and the patients may have felt more comfortable immediately.

### Fatalismo

As literature that suggests Latinos are extremely fatalistic (Flores 2000; Goldsmith 1993), many of the health educators also cited this as the case with their Spanish-speaking patients. Health educators also noted that their Spanish-speaking patients were in denial about having the disease and the severity of potential complications. One health educator said, *There is a lack of acceptability that they have diabetes. They don't talk about it and they don't want to talk about it. It's like an ostrich with its head in the sand. They just think, "Everything is going to be okay and there is nothing that can really be done."*

Some health educators commented that their patients did not think there was anything they could do about the disease until they started coming to classes and saw that they could control their diabetes.

### Depression

Some research has demonstrated that Latinos are more likely to be depressed than Black or White Americans. In addition, literature has shown that Latinos are reluctant to seek out mental health care because it would be disgraceful and selfish to do so (Henderson et al. 1993).

Depression was a major issue for many of the Spanish-speaking patients. Some health educators said that they knew their patients were depressed but that they would not discuss it because depression is considered a vulnerability in

Latino culture. One health educator remarked, *A very small percentage mention depression in connection with diabetes. They are embarrassed because depression is considered a weakness. They can treat their bodies but not their minds. It is shameful to have depression.*

## **Conclusion**

In conclusion, this chapter has presented an analysis and discussion of the results that were presented in Chapter Four. This analysis was framed within the research questions first presented in Chapter Three, and in the context of the literature review in Chapter Two. Chapter Six provides conclusions and recommendations from this internship and for the *Para Su Salud* health education program, and this internship's relevance for Applied Anthropology and Public Health.

## Chapter Six

### Recommendations and Conclusions

This chapter presents conclusions and recommendations from my internship experience, the dual degree program, and most importantly, for Pfizer's *Para Su Salud (For Your Health)* type 2 diabetes health education program for Spanish-speakers. Recommendations are based on class observations, patient satisfaction surveys, but mostly on the opinions and experiences of the bilingual health educators who taught the *Para Su Salud* program and were intimately involved with the Latino patients who participated in the program.

This chapter contains nine primary recommendations, in order of importance (most to least), for the *Para Su Salud* program. First, change the diet section of the curriculum to include more culturally appropriate diet concepts, foods, and cooking suggestions. Second, emphasize family involvement in disease management, especially for female patients. Third, include food label reading in English in the curriculum with appropriate Spanish translations. Fourth, acknowledge explanatory models of illness that may be different from that of American culture, including God's will and folk illnesses such as *susto* and *nervios*. Fifth, include discussion of folk or home remedies and their potential interactions with prescribed medications. Sixth, include sections on alcohol,



depression and erectile dysfunction as these were commonly asked about topics and named as important issues by the health educators. Seventh, discuss ideal body image and exercise in ways that are sensitive to Latino beliefs and practices. Eighth, include more drawings and representations of Latinos in the curriculum. Finally, ninth, develop separate curriculums for Mexican patients and other Latin American patients. These recommendations are discussed in more detail below.

In addition to the nine primary recommendations listed above, this chapter also provides several secondary recommendations. These recommendations are deemed of less importance than the nine primary recommendations but still deserve consideration for this and other health education programs for Latinos.

### **Recommendations for the *Para Su Salud* Program**

The purpose of this internship was to evaluate the Spanish version of Pfizer's *For Your Health (Para Su Salud)* type 2 diabetes education program for Spanish-speakers on Medicaid or uninsured in community health clinics throughout the state of Florida. The end result is a set of recommendations that can be made to Pfizer, Inc. for ways to improve the program, which according to preliminary data from health educator interviews and patient satisfaction surveys, has already been very well received. I hope that these recommendations will help make the *Para Su Salud* Program more culturally relevant and sensitive for Latinos.

It should first be noted, that for the most part, both the health educators and the study patients truly enjoy the *Para Su Salud* program. Almost all comments were positive except for a few recommendations on ways to make the program better. Most of the recommendations come from the health educators themselves who, like their patients, are also part of the Latino community. Therefore, despite differences in countries of origin from each other and their patients, the health educators most likely have a better understanding of their Latino patients' needs than I do as an outside observer, or a non-Latino health educator. Since one of the limitations of this study was that the patients were not directly interviewed about their opinions, the health educators provided the next best source of information since they were from the same community as their patients, and are one of the biggest strengths of the program.

Another strength of the program is the low literacy level of the curriculum. The fact that the curriculum uses very few words and easy to understand pictures makes it accessible to everyone, whether they can read English, Spanish, or neither. In the future, to ensure Spanish translation consistency and accuracy, members of the Latino community and Spanish-speaking professionals should review and revise the Spanish curriculum.

Furthermore, the patients expressed both to the health educators and through the patient satisfaction survey, that they enjoyed the program. Whether positive changes were made in disease beliefs, attitudes and management will be determined later when the FHLS is complete and the data are analyzed.

Below are the specific recommendations that will be made to Pfizer, Inc. to improve the *Para Su Salud* type 2 diabetes education program for Spanish-speakers.

**Recommendation 1:**

Change the “Eating Healthy” section of the curriculum to include more commonly eaten Latino foods. While rice and beans are shown in the curriculum other foods should be included such as tortillas and *platanos*, which were commonly mentioned both by health educators and patients. This change in curriculum was the most asked for by the health educators.

More emphasis should also be put on the way foods are prepared in the Spanish curriculum. While many people fry their foods, Latinos do so more often and with lard or vegetable oil. Other methods of cooking traditional Latino foods should be suggested so that they do not feel like they have to give up their traditional diet. Ideally, demonstrations of how to cook traditional foods in more healthy ways should be included as well as recipes. More emphasis should be placed on reduced portion sizes for foods such as rice, beans and tortillas, which are consumed in large amounts by many Latinos.

Many Latinos prefer to eat their largest meal during the day rather than the evening. The curriculum should take this into consideration, possibly switching the examples for lunch and dinner that are presented. In addition, many Latinos said that they never drink milk, or do not like milk, because their stomachs are not accustomed to it. Other alternatives to milk such as soymilk or

lactose-free milk should be presented in the Spanish curriculum as many Latinos are lactose intolerant. Food discussions should also place importance on drinking water since many workers spend long hours in the field and do not drink much water. Furthermore, fruit juice is commonly made with large amounts of sugar; other alternatives should be given.

**Recommendation 2:**

Place more emphasis on entire family involvement in disease management, especially the patient is a female. Latino patients should be encouraged to make changes for the whole family because they are also at risk, and it is usually the woman's job to take care of her family at home. Health educators should try to emphasize to husbands the importance of helping to care for a diabetic wife. The Spanish curriculum should make note of this as it seems to be an important issue for Latinos.

**Recommendation 3:**

Include food label reading in the Spanish curriculum. This is important for English-speakers as well, but even more so for Spanish-speakers because many of them cannot read the English labels on food products. The Spanish curriculum should include a picture of a food label with the appropriate translations in Spanish so that the Spanish-speakers can come to recognize what is in the foods they buy. This should also include how much of certain items on food labels diabetics should have in one day.

**Recommendation 4:**

Although Latinos are more likely to believe that it was God's will that they got diabetes and there is nothing they can do about it, emphasize that while diabetes is not curable and that patients may have been destined to get diabetes, they can control the disease through healthier eating and exercise.

Recognize folk illnesses such as *susto* and *nervios* when discussing the reasons why people get diabetes. These illnesses do not necessarily have to be shown in the curriculum and workbooks but *susto* and *nervios* could be listed as cues for the health educators to ask or talk about on the back of the flipchart.

**Recommendation 5:**

Discuss or prompt discussion of home or folk remedies used to control diabetes. This internship and other studies have shown that while Latinos trust pharmacists and physicians, they still may be using home remedies such as herbal teas and cactus to control their blood sugar. It is important that health educators emphasize that home remedies can cause dangerous interactions with pharmaceuticals and that patients should discuss any home remedies they are using with their doctors.

**Recommendation 6:**

Discuss depression, erectile dysfunction and alcohol consumption in the curriculum. While these may be very sensitive issues, especially for Latinos, they were commonly mentioned by health educators as important for their Latino patients. Women more commonly asked about erectile dysfunction in their

husbands. Although health educators should be sensitive to the potential embarrassment these subjects can bring, they are important for the overall well-being of the patients.

The patients also often asked about the effects of alcohol on their blood sugar. Furthermore, many of the health educators thought their Latino patients, especially the men, consumed alcohol often.

**Recommendation 7:**

Emphasize in the exercise portion of the curriculum that although working hard is good exercise, it is not enough to control diabetes and that other activities such as walking and dancing salsa or merengue are necessary to keep blood sugar levels under control. Advocate that Latino patients involve the whole family in these activities as exercise may be seen as a selfish activity that takes time away from family duties.

Discuss ideal body image in relation to exercise. This could be placed as a cue on the back page that is the health educators' teaching guide. Explain that being slightly overweight may be more beautiful than being skinny, but that being very overweight can have severe consequences for diabetics and raise blood sugar levels and the need for medications.

**Recommendation 8:**

Change the pictures in the Spanish to curriculum to include more Latino characters. While the curriculum includes pictures of a variety of people to show that anyone can get diabetes, the focus is on a White woman and a Black man.

Latinos might identify with and relate better to a curriculum that includes more Latino characters.

**Recommendation 9:**

Develop a Spanish curriculum for Mexicans that is separate from that for other Latino groups from Central or South America. The Mexican dialect and diet are quite distinct from other Latino groups and most of the health educators recommended a separate curriculum for Mexicans. It would be ideal to create a curriculum for each ethnic group but this will not likely be possible.

The previous nine recommendations are of most importance for the *Para Su Salud* program. However, health educators teaching Spanish programs should be sensitive to some other issues that may affect the ways in which Latinos participate in the education and health care systems. Low education and literacy levels may cause some Latinos to be weary of the classroom setting. Health educators should be sensitive to this and make sure patients are as comfortable as possible. As one health educator noted, small groups may make some Latinos more at ease in a class setting. Health educators should also be conscious of transportation issues for Latinos. The data in this study was somewhat unclear as health educators said transportation was an issue for their patients but most patients said they drove themselves. Health educators should ask their patients if they have reliable transportation and if they do not, try to arrange it for them. Finally, immigration status may cause some Latinos to feel

nervous in the clinic setting. This did not appear to be the case in this study but health educators should be aware that it could be an issue for some.

### **Internship Experience**

This internship provided me the opportunity to work both with a collaborative team in the University of South Florida College of Public Health, Department of Community and Family Health, and with a large corporation, Pfizer Inc. Working with both offered positive learning experiences. The FHLS team consisted of an evaluation team and an implementation team, the team of which I was a member. Working closely as the implementation team, Dr. Kay Perrin, Somer Goad and I negotiated and worked with Pfizer, Inc. to develop an implementation guide for the *Para Su Salud* or *For Your Health* program. In addition, we trained the bilingual health educators to implement and teach the program and provided ongoing support and site visits throughout the study.

Working with a corporation is a much different experience from working with other academics. The politics and motives of each entity are very different and constant negotiation was required with Pfizer, Inc. to come to agreement on many issues. However, through several meetings, the program was finalized and successfully implemented in 14 community health clinics around the state of Florida. This was a helpful experience for my future as an applied anthropologist in the field of public health. It is likely that I will have to work with other large corporations and government organizations that may have different ideals than



myself. Through this internship, I was able to see that teamwork and negotiation, although sometimes a frustrating process, can produce positive end results.

### **Relevance for Applied Anthropology and Public Health**

The purpose of this internship was to evaluate the cultural appropriateness of a type 2 diabetes education program for Latinos in the community health clinics around the state of Florida. This thesis examines cross-cultural, cross-linguistic and cross-ethnic barriers to health education. In this sense, the internship uses the theory and methods of anthropology to study a program for a cultural group, in this case Latinos.

Ervin (2000:1) argues, “[Anthropology’s] strengths are a vast and deep knowledge base, holism, insights from qualitative methodologies, and most of all, grounded connections to communities’ realities, aspirations and needs.” As a discipline, anthropology has always sought to demystify stereotypes, always advocating for the uniqueness of different cultures to be considered. In this sense, this internship was difficult to navigate because Latinos comprise many different ethnicities and cultures, and to make general recommendations for the program goes against these beliefs. However, what can be argued is that the program can be *better* for Latinos in general. Furthermore, it is unlikely that Pfizer will have the time, money, or resources to develop an education program for the all of the diverse groups that make up Latinos.

Applied Anthropology lends itself well to the arena of public health, and this internship has provided the opportunity to use anthropology in a real life public health intervention. As Chambers (1985:75) contends,

The participation of applied anthropologists in work related health care delivery and other aspects of health services has been encouraged in the United States through federal legislation which calls for the health planning on the *local level* [emphasis in original], where the anthropological approach proves especially useful in identifying the clientele of health services, in clarifying their culture-specific health needs, and in evaluating the effectiveness of health-care programs.

Since this was not an anthropological research project and I was the only anthropologist on the team, and a graduate student at that, this internship and thesis provides one of the only opportunities for the anthropological voice to be heard and considered for the future of the *Para Su Salud* education program.

This internship and thesis demonstrates the importance of anthropology in public health and how the two disciplines compliment each other. Public health seeks to protect people from diseases and encourages them to change harmful behaviors. As the Florida Health Literacy Study demonstrates, public health is also concerned with prevention programs aimed at specific problems that disproportionately affect minority and economically disadvantaged groups (USF College of Public Health 2003). This internship is important for public health because it seeks to improve an already successful program through greater consideration of the beliefs and practices of Latinos.

Through this internship and thesis, part of a collaboration the Department of Community and Family Health at the University of South Florida College of

Public Health and Pfizer Inc., I have studied and evaluated a type 2 diabetes education for Medicaid and uninsured Latinos in community health clinics in the state of Florida. As a graduate student in public health and anthropology, this internship provided the perfect opportunity to combine the disciplines and demonstrate how they complement each other. Through this internship I was also able to demonstrate the positive effects applied anthropology theory and methods can have on a public health intervention for different cultural groups. As Hahn (1999:5) argues, “The failure of some public health programs to study and take into account the culture and society of the community toward which the program is directed has sometimes led to only partial program success or even to program demise.” Anthropologists are set to help make sure that public health programs take culture into account, and that programs such as Pfizer’s can be successful across cultures.

The recommendations provided here are based on data obtained from anthropological methods and its holistic approach, which considers the cultural values of a group in designing any intervention program for people of diverse cultures. The recommendations for the *Para Su Salud* program will be presented to Pfizer Inc. in the hope that they will be used to help make the education program even better than it already is for the Latinos who greatly need a diabetes education program sensitive to their values, beliefs and customs.

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## **Appendices**

## Appendix A: Site Services Information

Table 12: Site #30 Services Information

In-house pharmacy at this site	
Pharmaceuticals delivered to this site's patients	
Transportation provided to patients at this site	
Medicaid eligibility screening provided to patients at this site	√
Formal systematic outreach efforts within this site	√
Diagnostic laboratory services within this site	√
Vision screening services within this site	
Podiatric services within this site	

Table 13: Site #31 Services Information

In-house pharmacy at this site	√
Pharmaceuticals delivered to this site's patients	√
Transportation provided to patients at this site	
Medicaid eligibility screening provided to patients at this site	√
Formal systematic outreach efforts within this site	√
Diagnostic laboratory services within this site	√
Vision screening services within this site	√
Podiatric services within this site	√

Table 14: Site #34 Services Information

In-house pharmacy at this site	√
Pharmaceuticals delivered to this site's patients	
Transportation provided to patients at this site	√
Medicaid eligibility screening provided to patients at this site	
Formal systematic outreach efforts within this site	√
Diagnostic laboratory services within this site	√
Vision screening services within this site	
Podiatric services within this site	

Table 15: Site #37 Services Information

In-house pharmacy at this site	√
Pharmaceuticals delivered to this site's patients	
Transportation provided to patients at this site	√
Medicaid eligibility screening provided to patients at this site	
Formal systematic outreach efforts within this site	√
Diagnostic laboratory services within this site	√
Vision screening services within this site	
Podiatric services within this site	

## Appendix A (Continued)

Table 16: Site #39 Services Information

In-house pharmacy at this site	√
Pharmaceuticals delivered to this site's patients	
Transportation provided to patients at this site	√
Medicaid eligibility screening provided to patients at this site	
Formal systematic outreach efforts within this site	√
Diagnostic laboratory services within this site	√
Vision screening services within this site	
Podiatric services within this site	

Table 17: Site #42 Services Information

In-house pharmacy at this site	
Pharmaceuticals delivered to this site's patients	√
Transportation provided to patients at this site	√
Medicaid eligibility screening provided to patients at this site	√
Formal systematic outreach efforts within this site?	√
Diagnostic laboratory services within this site?	√
Vision screening services within this site?	√
Podiatric services within this site?	

Table 18: Site #43 Services Information

In-house pharmacy at this site	√
Pharmaceuticals delivered to this site's patients	√
Transportation provided to patients at this site	√
Medicaid eligibility screening provided to patients at this site	√
Formal systematic outreach efforts within this site	√
Diagnostic laboratory services within this site	√
Vision screening services within this site	√
Podiatric services within this site	√



## Appendix B: Interview Guide

1. What have your experiences been with Spanish-speaking participants?
2. In your opinion, what issues are important to the Spanish-speaking participants?
3. What do the Spanish-speaking participants say about how they got diabetes? Do they mention any things they think caused the diabetes such as behaviors or events?
4. In your opinion, do the Spanish-speaking patients ever make statements about their lack of ability to control their diabetes or the outcomes of diabetes?
5. What do the Spanish-speaking participants say about the diabetic symptoms they experience?
6. Do they ever mention *susto* or any other folk illness or term in connection with diabetes? What do they say?
7. How do the Spanish-speaking participants treat their diabetes? Do they ever mention home or folk remedies? If so, what?
8. Do the Spanish-speaking participants ever mention depression in connection with their diabetes? What do they say? If so, do more men or women mention it?
9. How do the Spanish-speaking participants describe their experiences with the health care system and/or clinic?
10. How do the Spanish-speaking patients get to the clinic?
11. Describe the atmosphere in the Spanish-speaking classes.
12. Do Spanish-speaking participants bring family members to class? More or less than English-speaking?
13. What role does family play in the Spanish-speaking classes?
14. In your opinion, what role does family play in the disease management of the Spanish-speaking patients?

## Appendix B (Continued)

15. Do you think that the Spanish-speaking participants understand what you are teaching them? Do you think they might sometimes nod or agree out of respect or kindness even when they do not understand or, perhaps agree with what you are saying? How can you tell?
16. What foods are typically discussed in Spanish-speaking classes?
17. Are there foods that you think should be included in the Spanish curriculum? Which?
18. What do women say about cooking different foods for a diabetic diet?
19. What do men say about eating different foods for a diabetic diet?
20. In your opinion, what are some barriers to changing diet that are mentioned in the Spanish-speaking classes?
21. Do Spanish-speaking participants ever mention their stomachs being accustomed or unaccustomed to certain foods as a barrier for changing their diets? What do they say?
22. What do participants in the Spanish-speaking classes say about exercise?
23. Do Spanish-speaking participants ever discuss body image? In your opinion, what is the ideal body image of Spanish-speaking participants?
24. Do the Spanish-speaking participants ever talk about alcohol? If yes, what do they say? How much do they drink?
25. In general, what have your experiences been with the Spanish curriculum?
26. In your opinion, what are the strengths of the Spanish curriculum?
27. In your opinion, what are the weaknesses of the Spanish curriculum?
28. Does the Spanish curriculum address the issues that are important to the people in those classes? Why or why not? What are your suggestions?

## Appendix C

### Patient Satisfaction Survey (English)

Recently you participated in a study for patients with Diabetes and/or Hypertension; the study goal is to find ways to offer better quality service for patients with these conditions. Your opinion is important to us.

Thank you for taking the time to complete this survey.

		Disagree				Agree
1.	I enjoyed going to the classes.	1	2	3	4	5
2.	I learned new facts about my disease in the classes.	1	2	3	4	5
3.	I liked the way the teacher taught the classes.	1	2	3	4	5
4.	I have made positive changes since I came to the classes.	1	2	3	4	5
5.	The teacher made the classes easy to understand.	1	2	3	4	5
6.	The teacher made the classes fun.	1	2	3	4	5
7.	How many classes did you attend? a) 1 b) 2 c) 3 d) 4					
8.	Did anyone from your family attend the classes with you? a) Yes b) No					
9.	How did you get to the classes? a) I walked b) I drove c) A friend drove me d) A family member drove me e) I rode the bus					
10.	Was the time of the class good for you? a) Yes b) No					

### Appendix C (Continued)

11. When was your class held?  
a) Morning  
b) Afternoon  
c) Evening
12. Was the day of the class good for you?  
a) Yes  
b) No
13. When was your class offered?  
a) Monday  
b) Tuesday  
c) Wednesday  
d) Thursday  
e) Friday
14. Was getting to the class easy for you?  
a) Yes  
b) No
15. Circle the gift that you use the most:  
a) Tote bag  
b) Passport to Your Health  
c) Calendar  
d) Magnet clip  
e) Pillbox  
f) Large refrigerator magnet
16. Circle the gift that you do not use too much:  
a) Tote bag  
b) Passport to Your Health  
c) Calendar  
d) Magnet clip  
e) Pillbox  
f) Large refrigerator magnet
17. What did you enjoy the most about the classes?  

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18. What did you not enjoy about the classes?  

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19. What would you change to make the classes better?  

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Thank you for your comments.

## Appendix C (Continued)

### Patient Satisfaction Survey (Spanish)

Recientemente usted participó en un estudio para pacientes con Diabetes o Hipertensión, el objetivo de este estudio es de encontrar formas de ofrecer un servicio de mayor calidad a los pacientes que sufren de estas enfermedades. Su opinión es muy importante para nosotros. Gracias por tomarse el tiempo de completar esta encuesta.

		No estoy de acuerdo			Si estoy de acuerdo	
1.	Disfruté de las clases.	1	2	3	4	5
2.	Aprendí nuevas cosas acerca de mi enfermedad en las clases.	1	2	3	4	5
3.	Me gustó la forma en que el profesor enseñó las clases.	1	2	3	4	5
4.	He hecho buenos cambios desde que asisto a estas clases.	1	2	3	4	5
5.	El profesor hizo las clases fáciles de entender.	1	2	3	4	5
6.	El profesor hizo las clases divertidas.	1	2	3	4	5
7.	¿A cuántas clases asistió? a) 1 b) 2 c) 3 d) 4					
8.	¿Alguien de su familia asistió a las clases con usted? a) Sí b) No					
9.	¿Cómo vino a las clases? a) Caminé b) Conduje c) Un amigo me trajo d) Un familiar me trajo e) Vine en bus					
10.	¿Fue el horario de clase favorable para usted? a) Sí b) No					

### Appendix C (Continued)

11. ¿Cuándo tenía clase?  
a) En la mañana  
b) En la tarde  
c) En la noche
12. ¿Fue el día de la semana en qué se llevó a cabo la clase favorable para usted?  
a) Sí  
b) No
13. ¿Cuál día de la semana fue la clase?  
a) Lunes  
b) Martes  
c) Miércoles  
d) Viernes  
e) Jueves
14. ¿Fue fácil para usted llegar a clase?  
a) Sí  
b) No
15. Encierre en un círculo el obsequio que usted usa más:  
a) Bolsa  
b) Pasaporte para Su Salud  
c) Calendario  
d) Gancho de imán  
e) Cajita para pastillas  
f) Imán de refrigerador
16. Encierre en un círculo el obsequio que no usa mucho  
a) Bolsa  
b) Pasaporte para Su Salud  
c) Calendario  
d) Gancho de imán  
e) Cajita para pastillas  
f) Imán de refrigerador
17. ¿Qué fue lo que le gustó más acerca de sus clases?  

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18. ¿Qué fue lo que no le gustó acerca de sus clases?  

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19. ¿Qué cambiaría para mejorar las clases?  

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Gracias por sus comentarios.