PHYSICIANS' HEALTH PROMOTION PRACTICES FOR
MEXICAN AMERICAN PATIENTS AT RISK FOR
TYPE 2 DIABETES
by
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ABSTRACT

Physicians' Health Promotion Practices for Mexican American Patients at Risk for Type 2 Diabetes

by

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The relationship between physicians’ perceptions of Mexican American patients at risk for Type 2 diabetes and the subsequent care they provide was studied. Primary care providers responded to questionnaires about their health promotion practices. A 2x2 analysis of variance was used to identify differences in reported treatment of patients that accounted for both ethnicity and risk. Results indicated Hispanic patients received less time with their providers than Caucasian patients regardless of risk for Type 2 diabetes. Both groups received about the same reported care in terms of information gathered for diagnosis, diagnosis made, and treatment regimen prescribed. Data also suggested that providers’ scores for treatment regimen and information gathered were disappointingly low, which may not only account for the lack of statistically significant findings, but may reflect a larger issue within the medical care field.

(94 pages)
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Holly McFarland
CONTENTS

ABSTRACT .................................................. iii

ACKNOWLEDGMENTS ....................................... iv

LIST OF TABLES ........................................... vii

CHAPTER

I. INTRODUCTION ........................................ 1
   Demographic Information ................................ 1
   Prevalent Health Problems ............................... 4
   Type 2 Diabetes ........................................ 5
   Preventive Care ......................................... 6

II. LITERATURE REVIEW .................................. 8
   Introduction ............................................ 8
   Type 2 Diabetes in Hispanics ........................... 9
   Need for Services ....................................... 14
   Physicians' Perceptions ................................. 22
   Conclusion ............................................. 28
   Specific Research Questions ......................... 28

III. METHOD ................................................ 29
   Participants ............................................ 29
   Instrumentation ....................................... 30
   Procedure ............................................. 32
   Analyses ............................................... 34

IV. RESULTS ................................................ 36
   Scenarios .............................................. 36
   First Research Question ................................ 37
   Second Research Question ............................. 38
   Third Research Question .............................. 44
   Fourth Research Question ............................. 46
V. DISCUSSION ................................................................. 48
   Introduction ........................................................................ 48
   Findings ........................................................................... 48
   Implications ....................................................................... 54
   Limitations ........................................................................ 56
   Directions for Future Research .......................................... 57

REFERENCES .......................................................................... 58

APPENDICES .......................................................................... 67

Appendix A: Participant Questionnaire ...................................... 68
Appendix B: Patient Scenarios and Questions ............................ 69
Appendix C: Knowledge Scale of the Mexican American
   Attitude and Knowledge Scale ........................................... 71
Appendix D: "Ideal" Diagnostic Method and Rating Form ............. 75
Appendix E: "Ideal" Treatment Regimen and Rating Form .......... 76
Appendix F: Written Debriefing Statement for the Knowledge Scale
   of the MAAKS ................................................................. 77
Appendix G: Formulas for Approximate Test for Two Proportions .... 80

CURRICULUM VITAE ................................................................. 81
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Four Humors</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>Participants’ Responses for Additional Information Requested</td>
<td>38</td>
</tr>
<tr>
<td>3</td>
<td>Participants’ Responses for Prescribed Regimen</td>
<td>39</td>
</tr>
<tr>
<td>4</td>
<td>Analysis of Variance for Estimated Time by Ethnicity and Risk</td>
<td>41</td>
</tr>
<tr>
<td>5</td>
<td>Analysis of Variance for Information Gathered by Ethnicity and Risk</td>
<td>42</td>
</tr>
<tr>
<td>6</td>
<td>Descriptive Information of Care by Ethnicity and Risk</td>
<td>43</td>
</tr>
<tr>
<td>7</td>
<td>Descriptive Information of Treatment Regimen by Ethnicity</td>
<td>43</td>
</tr>
<tr>
<td>8</td>
<td>Descriptive Information for Time Spent with Caucasian, Hispanic, and Average Patients</td>
<td>45</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Demographic Information

Hispanics\(^1\) are one of the fastest growing minorities in the United States (Bureau of the Census, 2000). According to the Bureau of Census, Hispanics now represent 12% of the general population, as compared to 74% White, and 12% Black. By the year 2050, the Bureau of Census estimates Hispanics will comprise 22.5% of the general population. Over the last 10 years the Hispanic population grew by 53%, compared with a 6% growth by non-Hispanic European Americans, and 13.2% growth by African-Americans. The term “Hispanic” refers to a people who are diverse in culture and heritage and thus can be misleading. For clarity, the term Hispanic will only be used to describe people of Latin-American or Spanish origin, or people whose primary language is Spanish when information about more specific subgroups is not available.

Large families are likely to represent a significant part of the rapid growth of this population. Mexican American families are more likely to have five or more family members than non-Hispanic Whites or other Hispanic groups (Hoffman, 1991). Immigration also accounts for much of this growth, however, the data are limited because it is nearly impossible to accurately account for all documented and undocumented immigrants who cross the Mexican border each day.

Caudle (1993) called Hispanics the “silent minority,” because so little is known about them, particularly with respect to health care issues. She argues few researchers have studied this group’s health needs, health status, health beliefs, health behaviors, or family roles. To be certain, the research examining the various barriers to medical care is

\(^1\)The Bureau of Census uses the term “Hispanic” to refer to Latin American and other primarily Spanish-speaking groups.
lacking in depth. Additionally, because researchers are only now beginning to study the needs of this population and the difficulties associated with obtaining medical care, there have been few efforts to produce change in the systems that make it more difficult for Hispanics to obtain care.

Hispanics are a diverse group of people of Spanish descent whose ancestors have lived in North America since the 1400s or who have immigrated more recently from Cuba, Puerto Rico, Mexico, and other Central and South American countries. The subgroups included under the Hispanic label differ in culture, socioeconomic status, and language. The three largest Hispanic groups currently living in the United States are Mexican Americans, Puerto Rican Americans, and Cuban Americans. Mexican Americans comprise the largest percentage of the Hispanic population (66%) followed by Puerto Rican Americans and Cuban Americans (Bureau of the Census, 2000).

The Hispanic population tends to be a young one. Thirty-eight percent of Mexican Americans are under age 18 (Bureau of the Census, 2000). Cuban Americans have an average age of 39.1 years, Puerto Rican Americans 27 years, and Mexican Americans 24.1 years (Stroup-Benham & Trevino, 1991). Hispanics also tend to have less education than other ethnic groups. In 1995, only 50% of all Hispanics finished high school (Council on Scientific Affairs, 1996). In the year 2000, that number rose to 57%. Over a quarter of the Hispanic population has less than a ninth grade education (Bureau of the Census, 2000). In one survey, 15% of all first-generation Mexican Americans had less than 5 years of formal education. Mexican American women tend to receive less education than their White female counterparts and Mexican American males. Of those entering high school, only 36% finish (Ginsberg, 1991). It may come as no surprise that Moore (1995) found that Hispanic men and women are not being awarded doctorates in line with their proportion of the general population. The author also states that other groups that were
historically underrepresented in award of postgraduate degrees, such as women, are making significant advances, but Hispanics in general, are not.

Because of their youth and lack of education, many Hispanics are typically either unemployed, work in low-paying manual labor jobs, or work as seasonal migrant farm workers often with little or no health care benefits. It is estimated that over 23% of Hispanic families live below the poverty level and the unemployment rate among Hispanics is twice as high as for non-Hispanic Whites (Bureau of the Census, 2000; Garcia & Montgomery, 1991). Olson, Zuiker, and Montalto (2000) have suggested that some self-employed Hispanics have enjoyed more economic success than wage earners, but stated that this may be related to level of acculturation and characteristics of the worker. They note that the differences in income between wage earners and self-employed Hispanics are likely due more to differences in the characteristics of the worker (e.g., work ethic) than to differences in the two employment sectors.

Most of the Hispanic population tends to live in urban areas, typically in overcrowded, substandard housing. Along the Mexican border, some living conditions are primitive. *Colonias* (equivalent to shanty towns) on both sides of the border between Texas and Mexico lack septic tanks, sewers, or running water. Such conditions contribute to the spread of preventable diseases and to the overall poor health experienced by many Hispanics (Warner, 1991; Zambrana, 1996, 1997). Evidence suggests that social and economic factors are influential determinants of health. Morales, Lara, Kington, Valdez, and Escarce (2002) have argued that there is empirical evidence supporting the existence of a Hispanic health paradox. They cite literature suggesting that Hispanics are healthier than would be expected given their poverty, lack of education, and lack of access to medical resources. The authors continue to state that despite this health paradox, Hispanics are more vulnerable to preventable diseases than are non-Hispanic Whites, and
they suggest that programs and policies be created to improve access to health care and
the economic conditions among Hispanics.

Sabogal, Perez-Stable, Otero-Sabogal, and Hiatt (1995) found higher risk-taking
sexual behaviors among Hispanics as compared to non-Hispanic Whites. Their research
noted that Hispanics of both genders were more likely to begin having sexual intercourse
at an earlier age and less likely to use condoms and other barrier contraception. They
report that less acculturated Hispanic men and women tended to have fewer sexually
transmitted diseases and fewer sexual partners than those who were highly acculturated.
This suggests Hispanics may be increasingly vulnerable to sexually transmitted diseases
and other associated health-risk factors, and potentially even more so as they become
acculturated to the morals and mores of the United States.

Prevalent Health Problems

Similar to other lower socioeconomic status (SES) groups, Hispanics suffer from
problems associated with poverty, lack of education, and lack of resources. A search of
the recent literature indicates Hispanics as a group have higher incidences of heart disease,
hypertension, obesity, lead poisoning, injuries and violent deaths, cervical cancer, stomach
and pancreatic cancer, tuberculosis, substance abuse, human immunodeficiency
virus/acquired immunodeficiency syndrome (HIV/AIDS), and Type 2 diabetes mellitus
(T2DM) than non-Hispanic Anglos (Council on Scientific Affairs, 1996; de la Cancela,
1989; de la Rosa, 1989; Ginsberg, 1991; Lorenzo et al., 2002; Munoz, 1988; Novello,
Wise, & Kleinmean, 1991; Warner, 1991). There is also evidence that suggests Hispanics
are underimmunized, delay seeking care when ill, and seldom obtain screening
examinations for diabetes, hypertension, and cervical and breast cancer (Furino & Munoz,
1991; Lorenzo et al.; Moccia & Mason, 1986; Munoz; Novello et al.). Romero et al.
(2001) found a significant difference in the prevalence of self-reported illness between
Hispanic and non-Hispanic Whites with Hispanics reporting significantly more T2DM, leg ulcers/pressure sores, and Parkinson’s Disease. They note that the observed differences remained significant even after statistically adjusting for age, education, income, and language.

Type 2 Diabetes

One of the most important medical problems for Hispanics is Type 2 diabetes (Hanus et al., 2000; Munoz, 1988; Neufeld, Raffel, Landon, Chen, & Vadheim, 1998; Tucker, Bermudez, & Castaneda, 2000). The prevalence and incidence of T2DM are disproportionately larger in Mexican Americans than in non-Hispanic Whites (Stern & Haffner, 1990). The age of onset for T2DM is also earlier for Hispanics (47 for non-Hispanic whites vs. 44.7 in Hispanics; N. Burrows, personal communication, July 1, 2003). Johnson, Bazargan, and Cherpitel (2001) found that Hispanic patients with T2DM reported an earlier age of onset when they used alcohol, illicit drugs, or combined substances. The greater susceptibility for T2DM combined with the earlier age of onset and younger structure of the Hispanic population makes T2DM a significant public health problem in this population, and one that strikes people in the prime of life (Stern & Haffner). Research also suggests that in addition to the increased likelihood of Hispanics acquiring T2DM, this group may be more likely to suffer from microvascular and other complications of the disease (Stern & Haffner).

Some research points to T2DM as a risk factor for hip fracture in Mexican American older adults (Ottenbacher, Ostir, Peek, Goodwin, & Markides, 2002). The authors note that hip fracture alone poses a serious and significant medical, social, and economic concern for society. Their research suggests that T2DM is associated with an increased likelihood in hip fracture for older adults. They note that high incidence and
prevalence of T2DM in the Mexican American population highlights the need for additional research on risk factors and treatment in this ethnic group.

It is likely that both genetic and environmental factors contribute to T2DM. There has been speculation that environmental factors such as access and cultural barriers to medical services contribute to the overall poorer health of Hispanics compared to non-Hispanic Whites (Hiss, Anderson, Hess, Stepien, & Davies, 1994). Acculturation may also be a contributing factor to the T2DM epidemic, and includes, among other things, the adoption of poorer eating habits, sedentary lifestyle, and lack of knowledge of nutrition practices and information about the risks and symptoms of T2DM (Neufeld et al., 1998). To the extent that T2DM is mediated by environmental factors, it may be amenable to behavioral change. Assuming medical care plays a role, a major opportunity—and challenge—exists to reduce the morbidity, mortality, and economic burden associated with T2DM and its complications in the Hispanic population (Haffner, 1998; Stern & Haffner, 1990).

Preventive Care

The literature clearly indicates Hispanics as a group receive less medical prevention and intervention than non-Hispanic Caucasians (Caudle, 1993; Herholz et al., 1996; Ruiz, 1995; Shapiro & Saltzer, 1981; Sleath, Rubin, & Arrey-Wastavino, 2000). This is a troubling reality given the prevalence of certain diseases and the vulnerability of this population. Research also indicates Hispanics rarely obtain screening for T2DM, as well as other medical problems (Caudle; Marks, Garcia, & Solis, 1990). When Hispanics do present with an illness, it is frequently in a more advanced stage (Otiniano, Black, Ray, Du, & Markides, 2002). Consequently, Hispanics are at a greater risk of morbidity and mortality from a host of medical problems than the general United States population (Haffner, 1998).
Whether Hispanics as a group obtain screening and other medical prevention has been shown to be affected by a number of factors, including access to health care, cultural variables, and sociodemographic factors (Marks et al., 1990). The area of physicians’ perceptions of Hispanics as it pertains to health and the subsequent care their doctors provide has received little attention. The purpose of this study was to assess physicians’ knowledge of and attitudes toward their Hispanic patients and to determine whether discrepancies exist between the preventive care they offer to their White and Hispanic patients. If discrepancies are found, this dissertation will help to explain the factors associated with these discrepancies.
CHAPTER II
LITERATURE REVIEW

Introduction

Type 2 diabetes (T2DM) is a growing concern for the U.S. population in general, and remains an important problem for members of Hispanic heritage. Recent literature suggests prevalence and incidence are increasing dramatically in the general population, but increasing even more quickly in Hispanics than in both the general population and in any other minority population (Benjamin, Valdez, Geiss, Rolka, & Narayan, 2003; Burke, Williams, Haffner, Villalpando, & Stern, 2001; Flores et al., 2002; Neufeld et al., 1998). Type 2 diabetes represents a significant problem, particularly for Hispanics who historically have received less prevention and treatment than their White counterparts (Harris, 2001). Hispanics also tend to exhibit more risk factors for T2DM, both as children and adults, and more complications (Harris, Klein, Cowie, Rowland, & Byrd-Holt, 1998; Trevino et al., 1999).

The higher incidence and prevalence rates of T2DM in Hispanics relative to Whites has prompted researchers to identify and explore the factors associated with increased risk from the disease itself and the subsequent complications that can arise (Bastida, Cuellar, & Villas, 2001). Research has also addressed the relative lack of health care access and utilization by Hispanics (Harris, 2001). Physicians' perceptions of their Hispanic patients and the resulting care they provide have received little attention, but may prove to be important to the understanding of the T2DM epidemic within the Hispanic population.
Type 2 Diabetes in Hispanics

Description

Diabetes mellitus is a chronic disorder characterized by abnormal glucose metabolism due to the problems associated with the production or utilization of insulin. Historically, T2DM was considered a condition that primarily threatened the elderly. Recent trends suggest, however, that overweight children and adolescents represent an alarming incidence over the past decade (American Diabetes Association, 2000). Many instances of T2DM involve impaired sensitivity to insulin (i.e., insulin resistance). Initially, insulin resistance may be offset by increased insulin production, however, production eventually declines as the pancreas becomes exhausted. In other patients, insulin production is impaired at onset and insulin resistance develops either alongside or as a result of this impairment (Goetsch, Wiebe, Veltum, & Van Dorsten, 1995).

The onset of T2DM is associated with both genetic and environmental factors (Gonder-Frederick, Cox, & Ritterband, 2002). For example, more than 60% of T2DM patients have a first- or second-degree relative with the disease and 80% are significantly overweight (Haffner, 1998). The high correlation between T2DM and obesity suggests that lifestyle factors such as diet and exercise may play an important role in the management of the disease.

In the general U.S. population, estimates for prevalence range between 6% and 11% (Haffner, 1998; Lorenzo et al., 2002; Mokdad et al., 2000). Estimates for T2DM are twice as high for Hispanic populations (Kaufman, 2002). Accuracy in estimating the prevalence and incidence of T2DM is somewhat impaired by the fact that many people are unaware they have the disease. Some researchers have identified a "prediabetes" condition that includes obesity, impaired glucose tolerance and/or impaired fasting glucose levels. Benjamin et al. (2003) estimated over 12 million overweight individuals
between the ages of 45 and 74 have prediabetes. They suggest these numbers will grow substantially over the coming years.

Once diagnosed with T2DM, many patients are at-risk to develop one or more of the numerous complications associated with this disease. Diabetes is the leading cause of adult blindness, kidney failure, and nontraumatic amputation of the lower limbs. Diabetes is also a significant risk factor for heart disease and stroke (American Diabetes Association, 2000). Gonder-Federick et al. (2002) noted the presence of clinical depression in 15-20% of patients with T2DM and suggest this may interfere with adequate self-treatment and blood sugar control. They also cited evidence that demonstrates that long-term high levels of blood glucose can lead to “central neuropathy,” or damage to neural structures in the central nervous system.

**Epidemiology**

Numerous research investigations over the past 20 years have documented the high prevalence of T2DM in the Hispanic population. In all of these studies, the prevalence of T2DM in Hispanics was identified as being two to three times the prevalence for non-Hispanic Whites (Flegal et al., 1991; Kaufman, 2002; Romero et al., 2001; Samet, Coulta, Howard, Skipper, & Hanis, 1988; Stern, 1985; Stern et al., 1981; Stern, Rosenthal, Haffner, Hazuda, & Franco, 1984).

A recent and disturbing trend in research suggests there is an earlier age of onset of T2DM for all Americans (Gonder-Frederick et al., 2002). In the past, Hispanics were known to have an earlier age of onset than the general U.S. population, and recent research suggests this is still the case. Based on data from the National Health Interview Survey 2000, the Center for Disease Control estimates that the average age of onset of T2DM for Whites is 47; for Hispanics, 44.7 (N. Burrows, personal communication, July 1, 2003). It should be noted that the above numbers represent only one statistical calculation. Earlier age of onset for Hispanics has not been demonstrated recently for
each age decade. Thus, it is possible that demonstrated earlier age of onset for Hispanics is merely a reflection of the younger age structure of that population. While the distinction between Hispanics and Whites may be somewhat unclear in terms of age of onset, there is clear and convincing evidence in the direction of earlier age of onset across all groups (Bastida et al., 2001; Neufeld et al., 1998).

The earlier age of onset has major public health significance, because it means diabetes is more likely to affect patients in the prime of life. Stern and Haffner (1990) applied age specific diabetes prevalence rates that were reported in the Second National Health and Nutrition Examination Survey (NHANES-II) and the Hispanic Health and Nutrition Examination Survey (HHANES) to the age and ethnic-specific population of the state of Texas according to the 1990 U.S. census. Hispanics, although they comprised only 17.3% of the total population of Texas, represented 26.3% of people with diabetes. This disparity was even more striking in the 25-44 year-old age range where Hispanics accounted for 46.2% of the diabetic case load even though this age group represented only 19.4% of the total population.

Burke, Gaskill, Hazuda, Haffner, and Stern (1999) have argued there was a rapid rise in the incidence of T2DM from 1987 and 1996 in the Mexican American population, particularly among those living in the Southwest. They noted that some cardiovascular risk factors, such as cigarette smoking and blood pressure, are either declining or under progressively better medical management. They suggested, however, that both obesity and T2DM are exhibiting increasing trends for both Hispanics and non-Hispanic Whites that if unchecked, could potentially become the preeminent U.S. public health problem.

Genetic Risk Factors

Extensive literature exists that documents the various genetic determinants of T2DM, however, for the purposes of this dissertation, these factors will be discussed only as they relate to the Hispanic population.
Mexican Americans and Puerto Rican Americans are hybrid populations with both European (mostly Spanish) and Native American ancestry. Because most Native-American populations have a high prevalence of T2DM, researchers have speculated that the predisposition to diabetes observed in Mexican Americans and Puerto Rican Americans is derived from Native American ancestry (Stern & Haffner, 1990). Researchers have also speculated that the prevalence of T2DM in Mexican Americans is in direct proportion to the extent of that ancestry (Samet et al., 1988). Using genetic markers and skin color measurements, some researchers have attempted to determine the percentage of Native American ancestry in 14 populations, including three Mexican American populations (Gardner et al., 1984; Relethford, Stern, Gaskill, & Hazuda, 1986). The correlation between Native American ancestry and prevalence of T2DM was very high ($r = .92$), but Stern and Haffner note that this is an ecological association and may be confounded by factors also associated with genetics and diabetes (e.g., socioeconomic status).

Tucker et al. (2000) noted that T2DM is prevalent and poorly controlled particularly among Hispanic elders. They used a cross-sectional analysis with a sample of Hispanic elders and a comparison group of non-Hispanic Whites. They noted that not only was T2DM significantly more prevalent in the Hispanic population, but that ethnicity was more strongly associated with the control of diabetes than were socioeconomic factors or measured health behavior variables such as Body Mass Index (BMI). They suggest that culturally related factors may explain these differences. Other studies have reached similar conclusions.

Bermudez and Tucker (2001) found that T2DM was prevalent among both Hispanics and non-Hispanic Whites. They found, however, that the presence of diabetes was strongly associated with obesity and other health behaviors for non-Hispanic Whites,
but not for Hispanics. Hispanics as a group, tended to have a higher prevalence of diabetes, even in individuals who were not obese.

Florez et al. (1999) found that female relatives of Hispanic patients with T2DM were more likely to exhibit metabolic disturbances that put them at greater risk for the disease in later years. While there is evidence that suggests there is a genetic component to T2DM, there is also evidence suggesting that other factors may be as important and perhaps more important to the extent that they are amenable to change.

Environmental Risk Factors

Some of the most compelling evidence for environmental risk factors includes the various “epidemics” that have been documented in several underdeveloped societies throughout the world (Jackson, 1978; Knowler, Pettitt, Savage, & Bennett, 1981; Zimmet, 1982; Zimmett et al., 1983). Researchers have noted that the diabetes epidemics have coincided with a rapid change in lifestyle, often from “hunter/gatherer” to a more modernized and sedentary lifestyle. The elements of this modernization that have been given the most attention in the literature include increased intake of total calories, dietary fat, refined sugars, and decreased physical activity.

Hazuda, Haffner, Stern, and Eifler (1988) suggested an inverse relationship exists between prevalence of T2DM in Hispanics and acculturation that is independent of SES. They indicate that as people become increasingly affluent, they become aware of and attempt to reverse some of the negative consequences of modernization. For example, in the San Antonio Heart Project, researchers noted a trend in the exercise behavior of Mexican American women across three SES groups. Women in the highest SES group were statistically significantly likely to exercise more often, and consequently to be less obese than women in the lower two SES groups. They were also less likely to have diabetes (Hazuda et al.). If knowledge of T2DM in Hispanics is to be valuable, it must be
translated into a viable public health strategy. The environmental components of T2DM are important because they are currently the most amenable to behavioral change.

Need for Services

Hispanics are at a greater risk for developing T2DM than the general population. Once acquired, this group may also be more likely to develop numerous complications from the disease (Stern & Haffner, 1990; Ottenbacher et al., 2002). The genetic and environmental risk factors that exist for Hispanics have prompted researchers to consider this population highly vulnerable and in vast need of competent health care services (Neufeld et al., 1998). Unfortunately, Hispanics as a group tend to receive less in the way of medical attention and services than their Caucasian counterparts. There are numerous theories about the causes of inadequate health care for Hispanics. The most prominent theories are discussed below.

Cultural Preferences

There are two general theories explaining the lack of health care services for Hispanics as a group. One hypothesis is that the level of acculturation of Hispanics influences their utilization patterns (Berkanovic & Reeder, 1974; Quesada, 1996; Quesada & Heller, 1997). Keefe (1990) defined acculturation as the process of change that occurs as a result of continuous contact between cultural groups. While this definition does not specify the types, degree, or direction of change expected, studies have, in general, presumed that Hispanics who have adopted the behavioral practices and values of the dominant society are more likely to utilize health care services (Quesada). Hispanics have been hypothesized to use traditional self-care and consequently to underutilize services because they dislike some aspect of the medical services, or because they culturally prefer to consult alternative lay helpers (e.g., curanderos, herbalistas). Some Hispanics may believe that behaving in a way that violates cultural standards (e.g., seeking medical help
Evidence for this theory has been inconsistent. Many studies indicated that Mexican Americans used health services less than the general population even after controlling for sociodemographics and health insurance coverage (Anderson, Lewis, Giachello, Aday, & Chiu, 1991; Dutton, 1998; Garcia & Juarez, 1998; Roberts & Lee, 1990). These studies, however, did not measure acculturation directly, but rather focused on language preference as a measure of acculturation. Thus, the results of these studies can only presume the differences found are due to cultural factors. There are problems associated with using language preference as a proxy for acculturation. The most obvious is that the adoption of English is only one aspect of acculturation. Acculturation is a multidimensional and nonlinear process; it is believed that individuals acculturate along separate cultural dimensions (Borrayo & Jenkins, 2003). Thus, it is possible for a Mexican American to prefer to speak Spanish and still be relatively acculturated, or to prefer English and remain unacculturated.

Some studies have measured acculturation directly, using multidimensional scales, and have produced mixed findings with some suggesting an effect of acculturation on utilization of health care services while others do not (Chavez, Cornelius, & Jones, 1995; Chesney, Chavira, Hall, & Gary, 1982; Deyo, Diehl, Hazuda, & Stern, 1995; Lopez-Aqueres, Kemp, Staples, & Brummel-Smith, 1984; Markides, Levin, & Ray, 1995; Marks et al., 1987; Wells, Hough, Golding, Burnham, & Karno, 1987). Despite these inconsistent results, a trend is apparent. It is interesting to note that those studies that defined acculturation as language preference found that use of English related to fewer perceived barriers to medical care. Additionally, Marks et al. measured acculturation using a multidimensional scale including, among others, language preference, country of origin, and contact with native country. Their results indicated language was the only
dimension that predicted use of medical care among elderly Hispanic women: Those who spoke English had gone for screening more recently than those who did not speak English.

**Traditional health beliefs and practices.** Culture plays a significant role in health beliefs and the help seeking behaviors of Hispanics (Ailinger, 1988). The Mexican American conceptualization of illness often differs drastically from traditional western thought. For example, while most western philosophy adheres to a medical model to assess, diagnose, and treat medical problems, Mexican Americans tend to conceptualize illness as a direct result of sin, or as a punishment from God for sinning.

A second cause of illness is believed to be imbalance. Whether physical, emotional, or social, balance needs to be maintained by avoiding excesses in all areas of life including work, play, eating, and drinking (Scheper-Hughes & Stewart, 1993). The most obvious application of this emphasis on balance is the “hot/cold” theory of illness and curing. Based on ancient Greek pathology, this system attributes illness to an imbalance of “hot” and “cold” substances in the body. Hippocrates classified four liquids, or humors, within the body as hot or cold and wet or dry (Table 1). If illness is caused by imbalance, then curing involves return to balance by adding or removing heat, cold, wetness, or dryness. These differences in the health beliefs and practices of Mexican American patients and Anglo doctors may lead to a lack of help-seeking behavior of traditional western medicine. Additionally, if sought, adherence to a doctor's advice may be low when it is seen as conflicting with cultural beliefs (Suarez, 1992).

Ruiz (1995), a medical doctor, noted distinct differences in the conceptualization of illness by his Mexican American patients. **Empacho,** for example, is typically related to gastrointestinal pain and is believed (by Mexican Americans) to result when the digestive system fails to pass a chunk of food. Generally speaking, these patients are taken to local older women, who are supposed to know how to treat this illness. The diagnosis is made
Table 1

The Four Humors

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<th>Humor</th>
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by holding the patient face down by the skin of the back. If a crack is heard by the local healer during this procedure, the diagnosis of empacho is made. The treatment is based on body massages, particularly in the back and the waist in order to restore the balance of “hot” and “cold” temperatures in the body, and thus permit the chunk of food to pass through the intestine.

*Mal de Ojo* (evil eye) is believed to occur when someone pays attention to another person as a result of his or her beauty or ugliness. It is believed certain persons in the community cause this illness and certain others, particularly women and children, are most vulnerable to it. Symptoms associated with this disease are headaches, fretfulness, high fever, and weeping. When this occurs, family members typically try to trace where and with whom the affected person has been during the preceding hours in order to locate the person who might have caused this illness. When diagnosed, treatment consists of mixing one hen’s egg in water and placing the mixture under the head of the bed where the patient sleeps. This mixture is believed to have the power to dry out the body and cure the mal de ojo.

*Susto* is a very common illness that is believed to be caused by a frightening experience or exposure to upsetting situations. The illness is manifested by periods of languor, listlessness, and decreased appetite. Mexican Americans believe that the
frightening experience can lead to the temporary loss of one’s own spirit. The treatment involves putting the patient on the floor with hands outstretched like a cross, while being swept with indigenous herbs by a healer (curandero or herbalista) who also prays in order to bring the spirit back into the patient’s body.

Cultural differences. In addition to differences between Hispanics’ perceptions of medical illness and those of western medicine, there are many cultural differences that exist that may inhibit Hispanics’ use of medical services in the U.S. For example, Hispanics in general value personalismo and simpatia. These refer to positive, smooth interpersonal relations with health care providers whom they have come to know through pleasant conversation. Unfortunately, it appears many physicians are perceived by Hispanics as more interested in money than client welfare. With the continuing rise in cost of health care and the need to serve as many people as possible, doctors may simply not have enough time to engage in the “small talk” during health care visits that is so highly valued by many of the Hispanic cultures. This perception may go “hand-in-hand” with a similar perception of the medical community as unfamiliar and insensitive to the needs of Hispanic patients (Caudle, 1993).

The medical community may also be unfamiliar with Hispanic culture. For example, la familia, the family is the most important source of emotional and physical support for family members who become ill. Decision making about health matters is a family affair and is usually not left solely to the individual. The wife or mother usually attends to the ill person and decides when someone needs medical attention. She will typically consult the husband or father, who is often in charge of finances, transportation, and the decision to seek medical care. Without the support of the patriarch, medical interventions may not be accepted and used (Ruiz, 1995).

A focus group conducted with T2DM Hispanic patients suggested that Hispanics’ attitudes toward treatment may influence their willingness to accept treatment (Lipton,
Losey, Giachello, Mendez, & Girotti, 1998). The researchers identified fear of insulin therapy as one such belief that led to decreased adherence to treatment. They also note that Hispanics felt that family needs were most important, and viewed adhering to a treatment regimen as self-indulgent.

Collectivism, or the importance of friends and extended family in supporting and advising an ill person, is another cultural value shared by many Hispanics. It also refers to a preference for health care providers who are Hispanic. Unfortunately, there are few Hispanic doctors or nurses in practice (Caudle, 1993).

Some researchers have acknowledged that cultural differences play a part in the type of treatment a patient prefers and have suggested that the medical community ought likewise to recognize this fact and become more flexible and sensitive to patient needs and preferences. Frewer, Salter, and Lambert (2001) have emphasized the need to develop innovative methods that are sensitive to differences in patient preferences for a particular condition. They particularly discuss T2DM as being ripe for such investigative research. The authors argue that understanding patient preferences for treatment options is of utmost importance if treatments are to have a significant impact on patient quality of life. Similarly, Fitzgerald et al. (2000) concluded that the treatment modality for T2DM has a significant effect on attitudes toward diabetes and that these attitudes can affect the efficacy of treatment. Oomen, Owen, and Suggs (1999) conducted a review of the professional literature to evaluate whether current treatment models address the cultural factors that are relevant to treatment adherence in Hispanic females with T2DM. They found that established health behavior models are inadequate for addressing the unique needs of this population, particularly those Hispanic women who hold more traditional religious and cultural beliefs. They argue that it may be possible to reduce the negative effects of T2DM among Hispanic women by devising a comprehensive and culturally
sensitive model that takes into account the attitudes, beliefs, and values of Hispanic women.

Cultural Barriers

The barriers theory suggests that the differences in culture do not result in Hispanics' preferences for traditional medical practices, but that they interfere with access to modern medical care. Hispanics face constraints such as lack of access to formal medical services that are often cultural in nature (Suarez, 1992). Access can be defined in terms of factors that influence the ease with which medical care can be obtained (Anderson et al., 1991; del Portillo, 1997; Furino, 1992). These factors may include, but are not limited to, the availability of health insurance, having a routine place of care and a regular health care provider, the health care facility's proximity to residence, being able to get time off work, or being able to find child care (Giachello, 1995; Gurnack, 1990; Solis, Marks, Garcia, & Shelton, 1990).

Compared to the general population, Hispanics are less likely to have health insurance coverage and less likely to have a routine place for obtaining health services (Aday, Anderson, & Fleming, 1990; Anderson, Giachello, & Aday, 1986; Anderson et al., 1991; Gurnack, 1990; Kaspar & Barrish, 1992). This is usually a reflection of their low income, low education, and employment in positions that do not provide health insurance benefits (Anderson et al., 1991; Roberts & Lee, 1990). Because of these barriers, they may be more likely to rely on public health care facilities, hospital outpatient clinics, and emergency rooms and are not likely to see any one physician on an ongoing basis (Aday & Anderson, 1994; Anderson et al., 1986; Kaspar & Barrish; Mundinger, 1985; Weaver, 1976). Both of these theories are discussed in more detail below, and include specific examples and practical applications of the difficulties associated with accessing health care.
One of the most significant barriers, if not the most significant barrier to Hispanics' ability to access health care is limited financial resources. One study found only a small percentage (31%) of Hispanics have health insurance. The "working poor," a term usually describing seasonal farm workers, do not have medical insurance and are usually ineligible for other types of government assistance, such as Medicare (Solis et al., 1990). Wells et al. (1987) found that the most likely Hispanics to underutilize health care were women, youth and the "working poor."

Functional barriers may significantly impede Hispanics’ ability to access medical care. One study found that Hispanics encountered significant obstacles related to transportation, knowledge about health care facilities, obtaining time off work to go to a doctor’s appointment, finding a babysitter to care for children, and negotiating the complex medical bureaucracy. Often, these obstacles represented such a significant barrier as to completely prevent Hispanics from obtaining the medical care they needed (Suarez, 1992).

Language has been identified as a significant barrier by those who argue the most serious obstacles are cultural (Chesney et al., 1982). However, other research suggests this barrier may be more an access issue than a cultural issue (Estrada, Trevino, & Ray, 1990; Solis et al., 1990; Suarez, 1992). Solis et al. studied the influence of both cultural and access factors on Hispanics’ use of medical care. Multidimensional scales were used to measure both cultural variables and access variables. Among the cultural variables identified in the study were ethnic identification of respondent, respondent’s mother and father, birthplace, and language preference in speaking, reading, and writing. Among the access variables were health insurance, whether the respondent had a routine place to visit, type of health care facility, whether the respondent typically sees a particular provider at the facility, and the distance between residence and the facility used. The results indicated access barriers were more closely associated with underutilization of health care than
cultural variables with one exception. Language preference and use was the single greatest predictor of underutilization. It is interesting to note that the researchers decided to label language as an access factor, not a cultural factor, because it was language only, and not ethnic identification or other cultural factors (such as ethnicity of the health care provider) that predicted underutilization. They conclude use of English favors access to services.

Lipton et al. (1998) suggested that the language barrier also impacts physicians' perceptions. They conducted focus groups with health care practitioners who agreed that their communication with patients was hindered by low reading levels, lack of proficiency in English, and an excessive respect for physicians.

Physicians' Perceptions

One variable that has received considerably less attention in the literature is physician's perceptions of their Hispanic patients. One possibility for this lack of attention may be the difficulty inherent in studying attitudes and perceptions of socially loaded issues, particularly with regard to race and ethnicity. Participants in such studies have often been known to give socially desirable or acceptable responses (Suarez, 1992). While there has been little done in the way of the effects of physicians' perceptions of Hispanic patients and the subsequent care they offer, there is literature peripheral to this issue. There are several studies that suggest that physicians' interactions with patients are influenced by the patients' ethnicity, social class, and clinical complaints. Sleath et al. (2000) studied cross-cultural resident physician-patient interactions. Their findings indicated that resident physicians were significantly more likely to express positiveness to non-Hispanic white patients. Among Hispanic patients, resident physicians were more likely to express empathy to those who rated their health as better and to those who were more educated. This is a troubling finding because Hispanic patients who are less
educated or who view their health as poor would seem to represent two especially vulnerable subgroups within the U.S. population.

Shapiro and Saltzer (1981) also analyzed doctor-patient interactions on several dimensions. Their raters perceived physicians to be significantly less able to establish rapport with their Hispanic and Spanish-speaking patients, appeared to provide significantly poorer explanations of the therapeutic regimen, and were significantly less able to elicit feedback from these patients. Hispanic patients were also found to be less likely to return for a follow up appointment. Of those that did return, Hispanic patients were less likely to have followed the medical regimen. Given the cultural emphasis placed on smooth personal interactions, he authors suggest Hispanic patients' follow up for appointments and for adherence to the prescribed medical regimen may have been impeded by what could have been perceived as a lack of sensitivity and understanding of the Hispanic culture.

There are other studies that suggest poorer health care and health-care related matters are influenced by race. Researchers at the Epidemiology Research Center at the University of Texas-Houston studied treatment factors related to the increased morbidity and mortality following a myocardial infarction for Hispanics as compared to non-Hispanic Whites. Though numerous factors such as cigarette smoking, age, hypertension, and serum cholesterol were held constant, Hispanics were significantly less likely to receive cardiovascular drugs than non-Hispanic Whites (Herholz et al., 1996). The authors note that this difference in treatment may, at least in part, explain why the mortality rate after suffering a heart attack for Hispanics is so much higher than for non-Hispanic Whites. They further conclude that race was the only factor that explained the difference in treatment between Hispanics and non-Hispanic Whites.

Kasiske, London, and Ellinson (1998) studied the current system for placement of patients for cadaveric renal transplantation. Variables such as gender, age, and disease
severity were held constant. The authors found that racial and ethnic minorities, those less well educated, and those with fewer financial resources were less likely than their counterparts to be listed for renal transplantation before dialysis. Similarly, other researchers have found that ethnic minorities were referred for liver transplantation at a later stage and were more critically ill at the time of referral than their White counterparts (Eckhoff et al., 1998). The authors note there appears to be a selection bias at the level of referral that is not explained by factors other than race. While the authors have been reluctant to make firm conclusions regarding the causes of the discrepancy, they have suggested one possibility involves the perceptions of physicians who may see their Hispanic patients as uninterested and unlikely to follow medical advice (Ontivaros, Black, Jakobi, & Goodwin, 1999).

The notion that physicians' perceptions influence the care they offer to their patients is not a new one. Bernstein and Kane (1981) noted that physicians' care and treatment of their patients were significantly affected by their perceptions of patient characteristics such as gender, age, and emotional expressiveness. While the focus of this study was not race, the inferences they draw about how physicians' approaches to treatment and evaluation may be affected by the doctors' perceptions seem particularly applicable. They argue that physicians absorb demeaning societal attitudes regarding women, then use these perceptions as a basis for differential treatment. Specifically, they accuse physicians (and society) of viewing women as more dependent, emotionally unstable, volatile, and demanding than men. The result of these perceptions includes less thorough diagnostic evaluations and more prescriptions for psychoactive drugs in lieu of specific treatment.

In his review, King (1996) explored racism within the medical field. He cites research beginning in 1977 that indicates differential treatment between Whites and African Americans based on race. Overwhelmingly, the studies suggested Blacks were
less likely to receive the care they needed when relevant variables were held constant. King emphasized that society in general, has created and maintained negative race-related stereotypes that are manifested overtly and covertly at systemic and individual levels.

Clearly, the literature indicates that physicians and other primary care providers are not immune to the racial attitudes, stereotypes, and beliefs often held by people in the majority population. The literature also suggests that these negative attitudes can potentially affect the type and quality of care doctors provide to their ethnic-minority patients.

Physicians’ attitudes toward the disease itself may also influence their prevention and treatment. Larme and Pugh (1998) noted that primary care providers have been slow to adopt standards of care for diabetes and little has been found that has been effective in changing provider behavior. Their research surveyed the attitudes of primary care providers toward the treatment of several chronic diseases, including T2DM. They found that providers consistently rated T2DM as being more difficult to treat than other chronic diseases including hypertension, angina, and arthritis. They cite the characteristics of the disease itself, the complexity of its management and physicians' perceived lack of support from society, and the health care system for their efforts to control diabetes. The authors suggest that changes be made within the health care system to accommodate a chronic rather than acute, disease model to effectively support providers' efforts to manage and treat diabetes.

Physicians’ Prevention Practice Patterns

Vulnerability in the Hispanic population seems to be mitigated at least in part, by such factors as SES, English fluency, genetic and environmental factors, education, and possibly membership in the Hispanic cultural group. Given the vulnerability and high risk for medical problems associated with this population, this group should be the target of increased attention both in practice and research. Of particular importance would seem to
be preventive care, with those who are at highest risk receiving superior preventive interventions. Unfortunately, research indicates this is not occurring.

Ewing, Selassie, Lopez, and McCutcheon (1999) summarized national survey results for key clinical preventive services provided by primary care physicians and characterized these results by demographic and practice attributes of the physicians. The services included exercise, diet, alcohol/drugs, immunizations, family planning, and screening procedures. While they found small differences in the provision of these services between specialty and demographic subgroups, their overall conclusion indicated no group of primary care physicians reported providing clinical preventive services to their patients at adequate levels.

An abundance of literature indicates that while physicians support health promotion in theory, many feel ineffective in helping their patients make lasting behavioral changes. Yeager et al. (1996) assessed physicians’ beliefs about the importance of health promotion and their ability to influence patient behavior regarding dietary change, exercise, smoking, and alcohol and drug intake. While over 80% perceived health promotion behaviors as very important, less than 10% thought they could be successful in effecting change in their patients.

Williford, Barfield, Lazenby, and Olson (1992) surveyed physicians’ attitudes toward exercise promotion and found that less than half of those surveyed required an exercise history as part of their initial examination. Additionally, although 91% encouraged exercise in their patients, less than 23% were familiar with the American College of Sports Medicine guidelines relating to the development of exercise prescriptions. They conclude that while physicians support exercise for health promotion and rehabilitation, greater emphasis is needed to involve physicians in more directly prescribing exercise.
Hunt, Kristal, White, Lynch, and Fries (1995) examined the prevalence, content and impact of physician dietary recommendations on patients' dietary behavior. Of those surveyed, 20% had received a physician's recommendation for dietary change during the past year. Respondents receiving these recommendations were statistically significantly more likely to report decreased use of high-fat foods and increased use of high-fiber foods, suggesting that physicians' recommendations can effect behavioral change. Logsdon, Lazaro, and Meier (1989) conducted a similar study, with similar findings. Patients who had received a physician's recommendation were more likely to have begun regularly exercising, losing weight, and decreasing their alcohol intake. While these studies suggest physicians' recommendations can encourage patients to make lifestyle changes, the samples involved did not include people of Hispanic origin. Thus, it is not known how applicable these findings are to this population.

Unfortunately, there is little research pertaining to physicians' health promotion practices for Hispanic patients at risk for T2DM (Haffner, Rosenthal, Hazuda, Stern, & Franco, 1984). One of the only studies conducted specifically to examine preventive care with Hispanic patients was done by Gemson, Elinson, and Messeri (1988) but did not include diabetes. The researchers surveyed doctors whose patient populations consisted of either mostly non-Hispanic Whites or Hispanics. Doctors who served primarily Hispanic patients were found to be significantly less likely to follow guidelines from nationally recognized organizations for health promotion and disease prevention, although they were just as likely to value the importance of preventive care. For example, physicians with predominantly Hispanic patient populations were significantly less likely to recommend mammography screening or influenza vaccinations than their counterparts. These doctors also tended to spend less time with each patient and were less likely to be board certified. The authors conclude the disparity in physician prevention practice patterns may contribute to the overall poorer health status of Mexican Americans.
Conclusion

While the literature indicates increased vulnerability to various health-related problems and complications in the Hispanic population, little is known about physicians' attitudes toward these patients and how those attitudes affect the subsequent care they provide. Research is needed to determine the relationships between these variables, with particular emphasis on minority group membership and high-risk behavior. The purpose of this study was to contribute to the literature on health promotion with reference to T2DM by primary care givers within the Hispanic population and to determine how primary care givers' perceptions affect the care they provide to their Hispanic patients.

Specific Research Questions

1. How much do caregivers know about the Hispanic culture?

2. In response to questions based on patient scenarios, does the reported care that would be provided to patients vary by risk or ethnicity or both in terms of time spent with patients, information requested, diagnoses made and regimen prescribed?

3. How does time spent with Caucasian and Hispanic patients compare with each other and with average time spent per patient?

4. Is the level of knowledge of Hispanic culture related to differential treatment?
CHAPTER III
METHOD
Participants

Participants were four types of primary care providers, including physicians, physician’s assistants, interns, and advanced medical students. Nurse practitioners were originally identified as potential participants, but were not present in the locations selected for data collection. Participants were recruited from continuing education classes, grand rounds, and from hospitals and clinics. The researcher contacted the continuing medical education directors for three hospitals, three medical schools, and two medical conferences in a metropolitan Texas community and in rural Utah and North Dakota, and obtained permission and an endorsement to attend a continuing medical education class, conference, or grand rounds session. Surveys were distributed and the researcher collected them at the end of the class. Participation was completely voluntary and anonymous. No names were requested and all measures were identified by a code for collection and organization purposes only and were not used to identify individual participants.

The sample consisted of 207 primary care providers out of 424 who were approached, yielding an overall response rate of 49%. Sixty-two participants were from 69 providers attending grand rounds sessions (overall response rate 91%). A total of 101 providers participated out of 235 attending a continuing medical education conference (response rate 43%). Forty-four participants of 97 providers were from hospital education classes (response rate 45%). Most of those who chose not to complete the survey were attending conferences and may have been rushed for time or eager to engage in other activities. One hundred fifty-nine of the respondents (77%) were male and 48 (23%) were female. The age of the respondents varied from 23 to 60 with an average of 39 (SD =
Most ($n = 172, 83\%) were Caucasian. Two (1\%) identified themselves as African American, 4 (2\%) as Mexican American, 10 (5\%) as Asian American, and 19 (9\%) as other. Most respondents ($n = 122, 59\%) were practicing medical physicians. Residents comprised 20\% ($n = 42$) of the sample, and physician assistants comprised 16\% ($n = 33$). Medical students made up 5\% of the sample ($n = 10$). A total of 71\% ($n = 148$) of the respondents were board certified, and 17\% ($n = 36$) indicated fluency in Spanish.

**Instrumentation**

A packet of self-report assessments was administered. Each packet contained a brief demographic questionnaire, one patient scenario, and the Knowledge scale from the Mexican American Attitude and Knowledge Scale (MAAKS). The packets required approximately 10-15 min to complete.

**Biographical Questionnaire**

This questionnaire included 11 items designed to gather background information on the participants. Questions related to training, certification, current or future patient population, and basic demographic information (see Appendix A).

**Patient Scenario**

Each packet included one of four patient scenarios. These scenarios presented the participant with information about a fictitious patient and asked for probable diagnosis, along with the recommended tests and treatment regimen (see Appendix B). Each scenario featured a middle-aged man who was either Caucasian or Hispanic. Hypothetical patients were also presented as having either few risk factors for T2DM or significant risk factors. After reading the scenarios, participants were asked to answer a series of open-ended questions about the amount of time they would need to spend with the patient before making a diagnosis, the types of tests, if any, they would order, additional patient
symptoms they would inquire about, the most likely diagnosis, and the treatment regimen they would prescribe.

The scenarios were evaluated prior to data collection by a panel of experts including two Ph.D. professors with expertise in the health field, two licensed nurse practitioners/physicians’ assistants, and two licensed practicing physicians. The purpose of the panel was to determine whether the high-risk patients exhibited sufficient and appropriate symptoms and the low-risk patients exhibited few symptoms. The panel was also able to give an adequate determination as to how easy it is to distinguish between the high- and low-risk scenarios. As the purpose for the panel review was only symptom specification, the ethnicity-related information was kept out of the scenarios.

Panel members agreed that the original blood pressure of the high-risk patient, 170/140 was too high, and might suggest medical problems other than diabetes. Per their suggestion, the high-risk patient’s blood pressure was reduced to 165/105. Additionally, the high-risk symptom of blurred vision was replaced with “sedentary lifestyle” as panel members felt that blurred vision indicated an advanced stage of T2DM and that it was unlikely to occur in an initial appointment. One panel member noted that the diagnosis of obesity could be correctly made in the high-risk scenario and expressed concern about generically asking participants to make a diagnosis that would be coded as incorrect. Other panel members, however, felt that the patient obesity should not be changed, because it is an important risk factor and significant clinical marker of T2DM. The researcher decided to keep obesity in the high-risk scenario, but agreed to change it from “morbidly obese” to “obese.”

Knowledge Measure

The Knowledge scale from the MAAKS was used to assess participants’ knowledge about Hispanic culture (see Appendix C). The authors report good inter-rater reliability (.80) for this instrument. They claim the measure is valid because it has been
shown to be capable of distinguishing between those who are highly knowledgeable about the Hispanic population and those who are not. The scale is made up of 15 multiple-choice items designed to measure knowledge of traditional, less acculturated Mexican American culture as it pertains to health care delivery. The scale is scored by adding the number of correct responses. High and low scores indicate high and low degrees of knowledge of traditional Mexican American culture. Scores of 0-5 indicate a low knowledge level, 6-10 a moderate level, and 11-15 a high level of knowledge. The highest knowledge score is 15.

The MAAKS also contains an attitude scale that was designed to measure respondent attitudes toward working with Mexican American patients in a health care setting. Upon inspection of the individual items, however, it was felt that they were relatively transparent, and that the “right” answer (i.e., the socially acceptable or desirable answer), was so easily identified as to make the instrument of questionable validity. Additionally, it was felt that administering the attitude scale in this study potentially could affect participants’ responses to the scenarios by increasing their sensitivity and awareness of cultural issues to the point that their responses may have differed markedly from their actual behavior. Instead, respondent attitudes were measured covertly in the between-subjects design. Unfortunately, the authors did not report any description of covariation between the knowledge and attitude scales, however, some literature indicates that those with less knowledge of a culture may subsequently have a more negative attitude toward that culture (Chesney et al., 1982).

Procedure

A pilot test was conducted prior to data collection and included 10 physicians and physician’s assistants who were tasked with identifying and correcting problems in the packets. Their suggestions were taken into account and problems with the instruments and
format were remedied. For example, 7 pilot participants questioned why they had to identify their alma mater. Upon consideration, the researcher agreed that such information was not relevant to the study and removed the item. Five of the pilot participants indicated a dislike for the time measure at the top and bottom of each page, stating the test felt like a timed test. They agreed, however, in the importance of ensuring participants did not turn back to change their responses. Four of the pilot participants disliked at least one aspect of the MAAKS (e.g., that the use of double-negatives in some items were confusing, or that the choices after some of the questions seemed unrelated to each other and increased confusion), but the researcher was not at liberty to make changes.

Each actual participant was given a packet containing the three measures. The patient scenario and questions regarding treatment were broken down into two pages. The scenario and questions asking about time spent with the patient, tests/information requested, and diagnosis made appeared on the first page. After completing these items, the respondents were informed that the patient in the scenario has T2DM. Respondents were then asked to describe a treatment regimen. This was primarily done because so few symptoms were listed on the low-risk scenarios that numerous diagnoses were possible. Informing every respondent of the diagnosis allows for more meaningful comparisons across groups in terms of suggested treatment and regimens. After completing the packets, the groups were given a written debriefing statement about the differences between the Mexican American and the predominant Caucasian culture (see Appendix F). This statement provided participants with feedback for responses that hopefully served to educate and replace incorrect assumptions with accurate understanding. The authors of the MAAKS warned that negative race-related stereotypes inadvertently could be triggered if corrective feedback is not given.

"Ideals" (see Appendices D and E) were devised for method of diagnosis and treatment regimen using the American Diabetic Association (ADA) criteria. Participants’
responses to the items regarding tests ordered/information gathered and treatment regimen prescribed were scored on a point system, which identified how closely the respondents’ answers resembled the “ideal” diagnostic indicators (i.e., fasting blood glucose level, patient report of symptoms), and treatment regimen. Each indicator listed on the “ideal” rating form was worth 1 point. If a respondent listed all indicators, he or she received a total of 10 points for that item. Similarly, for the treatment regimen, 30 ideal components are listed, each worth 1 point. A participant received 1 point for each response listed on the “ideal” rating form.

Analyses

First Research Question

How much do caregivers know about traditional Hispanic culture? All data were coded and entered into SPSS 10 for analysis. Means for the Knowledge scale of the MAAKS were calculated to yield information about participants’ general knowledge of traditional Mexican American culture. This information was used to answer subsequent research questions.

Second Research Question

In response to questions based on patient scenarios, does the reported care that would be provided to Hispanic patients differ from that to be provided to White patients in terms of time spent with patients, information requested, diagnoses made and regimen prescribed? Descriptive statistics for time spent with patients, method of diagnosis, diagnoses made, and regimen prescribed were calculated. Responses to the item regarding anticipated time spent with patients were converted into minutes per patient. Means for information gathered and regimen prescribed were calculated using the rating system as previously explained. The diagnosis item was analyzed with descriptive statistics to determine agreement in diagnoses and differences in diagnoses between groups.
The independent variables included race of patient (Hispanic or Caucasian) and risk (high or low). The dependent variables included time spent with patient, method of diagnosis (information gathered), and regimen prescribed. A 2x2 ANOVA was used to ascertain whether the means for the dependent variables differed significantly from each other. Effect size statistics for all significant differences were calculated.

Third Research Question

How does time spent with White and Hispanic patients compare with each other and with average time spent per patient? Responses to the questionnaire item asking about minutes spent with patients were used as the independent variable. Participants' responses to the anticipated time spent with each patient constituted the dependent variable. Correlations were calculated between the actual time spent with the average patient and the anticipated time spent with Hispanic and White patients.

Fourth Research Question

Is the level of knowledge of Hispanic culture related to differential treatment? Correlations were calculated between the Knowledge scale of the MAAKS as the independent variable and anticipated time spent with patient, method of diagnosis, and treatment regimen prescribed as the dependent variables. These statistics help explain the nature of the relationship between knowledge of the Hispanic culture, attitude toward the Hispanic culture, and the subsequent care physicians provide to Hispanic patients.
CHAPTER IV
RESULTS

Scenarios

Descriptive statistics were calculated for the scenarios. Fifty-three (26%) providers completed the Caucasian low-risk scenario; 51 (25%) completed the Hispanic low-risk; 48 (23%) completed the Caucasian high-risk, and 55 (27%) completed the Hispanic high-risk scenario. A total of 104 (50.2%) of the participants completed low-risk scenarios, and 103 (49.8%) completed high-risk scenarios. A total of 101 (49%) completed Caucasian scenarios, and 106 (51%) completed Hispanic scenarios.

Providers were asked to estimate the time they needed with their hypothetical patient. Responses ranged from 0-60 min, with an average of 18.4 (SD = 6.87). Physicians reported needing 18.5 minutes (SD = 12.20); physician’s assistants reported needing 17.42 minutes (SD = 13.53). Residents reportedly wanted 18.81 minutes (SD = 12.44) and medical students reported needing 19.30 minutes (SD = 10.43).

Providers’ scores for additional information needed to make a diagnosis ranged between 0 and 6 out of a possible 10. The average was 1.4 (SD = 1.19). Physicians averaged 1.18 (SD = .98). Physician’s assistants averaged 1.45 (SD = 1.03). Residents and students averaged 2.19 (SD = 1.55) and .50 (SD = .53), respectively. Most providers (N = 155, 75%) gave the correct diagnosis. Only 52 providers (25%) gave a diagnosis other than T2DM. Of the group of physicians, 85 (70%) gave the correct diagnosis. A total of 28 physician’s assistants (85%) gave the correct diagnosis; 36 (86%) of the residents gave the correct diagnosis; and 6 medical students (60%) gave the correct diagnosis. Participants’ scores for the prescribed regimen scale ranged from 0-8 out of 30 points possible. The average was 3.3. Physicians scored an average of 3.47 (SD = 2.00).
Physicians' assistants averaged 3.3 (SD = 1.85). Residents scored an average of 2.76 (SD = 1.64) and students scored an average of 2.9 (SD = 1.45).

The uniformly low scores for additional information requested for diagnosis and the regimen are of concern. One provider indicated he or she knew the guidelines from the ADA for treatment, but did not have the time or space to elaborate. Two others stated their treatment would involve sending the patient to the "diabetes management class" that may have included many of the ADA criteria, but these respondents were not more specific. Over all the low scores are disappointing. See Table 2.

As Table 3 indicates, providers reported not closely adhering to ADA guidelines in requesting information pertaining to diagnosis or in prescribing treatment. An interesting note is that despite the lack of information requested to assist in diagnosis, most providers gave the correct diagnosis regardless of risk factors. It is possible that the risk factors were too blatant and that despite the input from the pilot group, the diagnosis of T2DM was too easily discernable. It is also possible that the doctors surveyed are simply well trained and aware of the various risk factors associated with T2DM.

First Research Question

The first research question focused on the level of knowledge of traditional Mexican American culture in the sample of primary care providers. This variable was measured using the Knowledge scale of the MAAKS. Scores of 0-5 indicate a low level of knowledge, 6-10 a moderate level, and 11-15 a high level of knowledge. The highest score possible is 15. Norms for the MAAKS have not been established and published to date. Participants' scores ranged from 3 to 12, with a mean of 8.1, and a standard deviation of 2.03, indicating an overall moderate level of knowledge of the Mexican American culture and very little variance in knowledge level among participants. Physicians scored an average of 8.24 (sd =2.0) and physician’s assistants scored 7.88
Table 2

*Participants' Responses for Additional Information Requested*

<table>
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<th>Response</th>
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<tbody>
<tr>
<td>Fasting plasma glucose (general)</td>
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</tr>
<tr>
<td>Level above 120-130 mg/dl</td>
<td>89</td>
</tr>
<tr>
<td>Casual plasma glucose (general)</td>
<td></td>
</tr>
<tr>
<td>Equal to or above 200 mg/dl</td>
<td>85</td>
</tr>
<tr>
<td>Additional patient symptoms</td>
<td></td>
</tr>
<tr>
<td>Increased thirst</td>
<td>26</td>
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<tr>
<td>Increased hunger</td>
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<td>Sudden weight loss</td>
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<td>Tingling in hands</td>
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<td>Tingling/numbness in feet</td>
<td>16</td>
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<tr>
<td>Blurred vision</td>
<td>7</td>
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</tbody>
</table>

$(SD = 2.32)$. Residents averaged 8.10 $(SD = 1.88)$ and medical students, 7.20 $(SD = 1.81)$.

While the authors of the MAAKS do not offer correlations between the Knowledge and Attitude scales, research elsewhere suggests a direct positive relationship between knowledge of a culture and attitude toward that culture (Chesney et al., 1982).

More advanced statistics were not conducted on the Knowledge scale of the MAAKS to determine whether differences in scores existed between providers’ gender, ethnicity, or other demographic variables. This is largely because of the unequal sample sizes of the different groups. For example, only two African American providers completed the survey, as opposed to 172 Caucasian providers.

Second Research Question

The second research question was designed to identify differences in reported care that vary by risk or ethnicity in terms of time spent with the scenario patient, information gathered for diagnosis, diagnosis made, and treatment regimen prescribed. Descriptive
Table 3

Participants’ Responses for Prescribed Regimen

<table>
<thead>
<tr>
<th>Response</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meal Planning (general)</td>
<td>144</td>
</tr>
<tr>
<td>Portion control</td>
<td>--</td>
</tr>
<tr>
<td>Low cholesterol guidelines</td>
<td>--</td>
</tr>
<tr>
<td>Low fat guidelines</td>
<td>24</td>
</tr>
<tr>
<td>Low sugar guidelines</td>
<td>14</td>
</tr>
<tr>
<td>Label reading</td>
<td>--</td>
</tr>
<tr>
<td>Snacking adjustments</td>
<td>--</td>
</tr>
<tr>
<td>Exercise</td>
<td>122</td>
</tr>
<tr>
<td>Frequency</td>
<td>5</td>
</tr>
<tr>
<td>Intensity</td>
<td>--</td>
</tr>
<tr>
<td>Duration</td>
<td>2</td>
</tr>
<tr>
<td>Self-monitoring blood glucose levels</td>
<td>43</td>
</tr>
<tr>
<td>Blood glucose goals</td>
<td>4</td>
</tr>
<tr>
<td>Accuracy of results</td>
<td>--</td>
</tr>
<tr>
<td>Interpreting values</td>
<td>--</td>
</tr>
<tr>
<td>Diabetes facts/knowledge</td>
<td>94</td>
</tr>
<tr>
<td>Causes of high and low blood sugar</td>
<td>25</td>
</tr>
<tr>
<td>Symptoms</td>
<td>--</td>
</tr>
<tr>
<td>Symptom prevention</td>
<td>7</td>
</tr>
<tr>
<td>Symptom treatment</td>
<td>1</td>
</tr>
<tr>
<td>When to call a provider</td>
<td>--</td>
</tr>
<tr>
<td>Foot care</td>
<td>36</td>
</tr>
<tr>
<td>Daily foot care</td>
<td>--</td>
</tr>
<tr>
<td>Proper foot care</td>
<td>3</td>
</tr>
<tr>
<td>Sick day management</td>
<td></td>
</tr>
<tr>
<td>Preventing life-threatening problems</td>
<td>--</td>
</tr>
<tr>
<td>What to eat and drink</td>
<td>1</td>
</tr>
<tr>
<td>Blood glucose monitoring</td>
<td>--</td>
</tr>
<tr>
<td>Medication schedule</td>
<td>--</td>
</tr>
<tr>
<td>When to call provider</td>
<td>--</td>
</tr>
<tr>
<td>Yearly tests</td>
<td></td>
</tr>
<tr>
<td>Glycohemoglobin</td>
<td>--</td>
</tr>
<tr>
<td>Kidney function</td>
<td>--</td>
</tr>
<tr>
<td>Cholesterol/triglycerides</td>
<td>--</td>
</tr>
<tr>
<td>Foot exam</td>
<td>--</td>
</tr>
<tr>
<td>Eye exam</td>
<td>34</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>20</td>
</tr>
</tbody>
</table>
statistics and frequencies were calculated for each of the relevant variables. Table 4 presents the data reflecting the reported care to be given by patient ethnicity and risk.

A 2x2 factorial ANOVA was calculated with estimated time needed as the dependent variable (DV) and scenario risk and scenario ethnicity as the independent variables (IV). A significant main effect was found for ethnicity, \( F(1,203) = 3.88, p = .05 \). Hispanic patients received significantly less reported time with their providers \( (m = 16.83, SD = 11.14) \) than Caucasian patients \( (M = 20.2, SD = 13.27) \). The main effect for patient risk was not significant, \( F(1,203) = .02, p = .90 \). That is, patients received about the same amount of reported time with their providers regardless of their level of risk. The interaction was also not significant, \( F(1,203) = .95, p = .33 \). Thus, it appears that patient ethnicity is the only factor that has a statistically significant effect on reported time spent with the scenario patient. This is a potentially interesting finding, in that a group known to be vulnerable to T2DM, and known to experience difficulty accessing medical care received significantly less of the provider’s time than did patients in less vulnerable groups, however, subsequent analyses shed a different light on the interpretation of these data.

It should be noted that the means for time spent with actual patients between the two provider groups (i.e., those whose patients were Hispanic vs. Caucasian) were different. That is, by chance, providers whose scenario patients were Caucasian reported spending more time with their average actual patients \( (M = 20.03 \text{ min}) \) than did providers whose scenario patients were Hispanic \( (M = 16.93 \text{ min}) \). ANOVA was calculated to determine whether this difference was statistically significant. The results indicate providers with Hispanic scenario patients reported spending statistically significantly less time with their average actual patients than providers with Caucasian patients, \( F(1,205) = 11.01, p = .00 \). Because this appeared to be an important factor that could influence providers’ predicted times with their patients, a one-way between-subjects ANCOVA was
Table 4

*Analysis of Variance for Estimated Time by Ethnicity and Risk*

<table>
<thead>
<tr>
<th>Effect</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk</td>
<td>2.62</td>
<td>1</td>
<td>2.62</td>
<td>.02</td>
<td>.90</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>583.21</td>
<td>1</td>
<td>583.21</td>
<td>3.88</td>
<td>.05</td>
</tr>
<tr>
<td>Risk x ethnicity</td>
<td>143.11</td>
<td>1</td>
<td>143.11</td>
<td>.95</td>
<td>.33</td>
</tr>
<tr>
<td>S within-group error</td>
<td>30520.65</td>
<td>203</td>
<td>150.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

calculated to examine the effect of ethnicity on predicted time needed, covarying out the effect of time spent with actual patients. Time with actual patients was significantly related to predicted time, $F(1,204) = 19.65, p = .00$. The main effect for ethnicity was not significant, $F(1,204) = 1.00, p = .32$, with Hispanic patients receiving about the same amount of reported time ($M = 16.80, SD = 11.14$) as Caucasian patients ($M = 20.14, SD = 13.28$) when the effects of time spent with actual patients were statistically removed.

A second 2x2 ANOVA was calculated with additional information gathered as the DV and scenario risk and scenario ethnicity as the IVs (see Table 5). The main effect for ethnicity was not significant, $F(1,203) = .86, p = .36$. The main effect for risk was also not significant, $F(1,203) = .04, p = .84$. Finally, the interaction was not significant, $F(1,203) = .53, p = .47$. It appears that neither patient ethnicity nor patient risk factors had any significant effect on information gathered for a diagnosis. The most likely explanation for this finding is that the low scores providers consistently and uniformly received for information requested created a "floor effect," effectively restricting the range on the criteria variables and masking any possible real differences.

In order to test whether the proportions of the different populations were equal, $Z$ scores were calculated to compare correct diagnosis between risk levels and ethnicity (Christensen, 1977). See Appendix G for the formulas. With alpha set at .05, a
Table 5

*Analysis of Variance for Information Gathered by Ethnicity and Risk*

<table>
<thead>
<tr>
<th>Effect</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk</td>
<td>5.56</td>
<td>1</td>
<td>5.56</td>
<td>.04</td>
<td>.84</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>1.23</td>
<td>1</td>
<td>1.23</td>
<td>.86</td>
<td>.36</td>
</tr>
<tr>
<td>Risk x ethnicity</td>
<td>.75</td>
<td>1</td>
<td>.75</td>
<td>.53</td>
<td>.47</td>
</tr>
<tr>
<td>S within-group error</td>
<td>289.46</td>
<td>203</td>
<td>1.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

statistically significant difference was found \(z = 2.67, p = .05\) for correct diagnosis between low-risk and high-risk scenarios. Patients who were at greater risk for T2DM were significantly more likely to receive a diagnosis of T2DM than were patients who had few risk factors. A second statistically significant difference was found between high- and low-risk Hispanic patients \(z = 2.67, p = .05\). High-risk Hispanic patients were more likely to receive a diagnosis of T2DM than were low-risk Hispanic patients.

Comparisons between other groups did not yield statistically significant results. Hispanic and Caucasian patients who were at low risk for T2DM were about as likely to receive a diagnosis of T2DM \(z = .56, p > .05\). No statistically significant difference was found in T2DM diagnosis for high-risk Caucasian patients compared to low-risk Caucasian patients \(z = 1.22, p > .05\). Hispanic and Caucasian patients who were at high risk for T2DM were also as likely to receive a correct diagnosis \(z = -.38, p > .05\). Similarly, no statistical difference in correct diagnosis was found between Caucasian and Hispanic patients \(z = 0, p > .05\). The data suggest that patient risk was the only variable that had an impact on whether the patient received a diagnosis of T2DM (see Table 6).

Table 7 presents the data for treatment regimen prescribed by ethnicity. Because the last page of every scenario indicated the patient’s diagnosis was T2DM, statistics calculated for prescribed regimen did not include risk factors. Instead, the means on the
Table 6

*Descriptive Information of Care by Ethnicity and Risk*

<table>
<thead>
<tr>
<th>Ethnicity and risk</th>
<th>Anticipated time</th>
<th>Information for diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Caucasian low risk</td>
<td>19.25</td>
<td>11.7</td>
</tr>
<tr>
<td>Caucasian high risk</td>
<td>21.14</td>
<td>14.89</td>
</tr>
<tr>
<td>Hispanic low risk</td>
<td>17.55</td>
<td>9.66</td>
</tr>
<tr>
<td>Hispanic high risk</td>
<td>16.11</td>
<td>12.41</td>
</tr>
</tbody>
</table>

Table 7

*Descriptive Information of Treatment Regimen by Ethnicity*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Treatment regimen</th>
<th>M</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td></td>
<td>3.42</td>
<td>1.76</td>
<td>101</td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td>3.13</td>
<td>2.01</td>
<td>106</td>
</tr>
</tbody>
</table>

regimen score for respondents with Hispanic and Caucasian patients regimen score were compared using a one-way ANOVA. No statistically significant difference was observed, $F(1,205) = 1.16, p = .21)$. Hispanic patients were as likely to receive the same reported treatment for T2DM as Caucasian patients. Again, of note are the providers’ consistently low scores on the prescribed regimen scale, which may not only mask real differences in care based on ethnicity, but may be of concern in and of themselves, as a larger issue within the medical care field. Tables 2 and 3, which indicate participants’ reported care in terms of additional information requested and prescribed treatment regimen, demonstrate consistently low scores for all respondents. For example, of 207 participants, only 89
(43%) requested information on the patient's fasting plasma glucose level and only 3 of those specified the upper limit of 120-130 mg/dl. Similar numbers were found for casual plasma glucose levels; only 85 (41%) requested the information and only 3 specified the level of ≥ 200 mg/dl. Providers' requests for additional patient symptoms were even lower. A total of 26 (13%) inquired about increased thirst, and 6 (3%) asked about increased hunger. No participants inquired about sudden changes in weight. A total of 25 (12%) requested information about tingling in hands, and 16 (8%) asked about tingling/numbness in feet. Only 7 (4%) inquired about blurred vision.

Participants' responses for prescribed regimen were similarly low. A total of 144 (70%) mentioned making some change to the patient's diet, but none discussed portion control, low cholesterol guidelines, label reading, or snacking adjustments. Twenty-four (12%) responded that they would discuss low fat guidelines, and 14 (7%) indicated they would discuss low sugar guidelines. While a majority of the respondents (N = 122, 61%) indicated they would discuss exercise in general, only 5 (2%) mentioned frequency; 2 (1%) mentioned duration, and none discussed intensity.

Diet and exercise were by far the most common components of participants' reported treatment regimens. Discussing diabetes information was reported by 94 (45%) of participants. Self-monitoring blood glucose levels were reported by 43 (21%), and foot care by only 36 (18%). Sick day management was mentioned by only 1 respondent. Yearly tests were reported by 34 (17%) of the respondents. As shown in Table 7, out of a possible 30 points for treatment regimen, participants' scores were remarkably low, regardless of ethnicity.

Third Research Question

The third research question addressed the differences in time spent with Caucasian-scenario patients, Hispanic-scenario patients, and the average patient. Table 8
Table 8

Descriptive Information for Time Spent with Caucasian, Hispanic, and Average Patients

<table>
<thead>
<tr>
<th>Patient condition</th>
<th>Reported time</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>Caucasian</td>
<td>20.14</td>
<td>13.28</td>
<td>101</td>
</tr>
<tr>
<td>Average patient Caucasian scenario</td>
<td>20.03</td>
<td>6.70</td>
<td>101</td>
</tr>
<tr>
<td>Hispanic</td>
<td>16.80</td>
<td>11.14</td>
<td>106</td>
</tr>
<tr>
<td>Average patient Hispanic scenario</td>
<td>16.93</td>
<td>6.72</td>
<td>106</td>
</tr>
</tbody>
</table>

presents the descriptive information for these variables. ANOVA conducted earlier on time estimated by providers and scenario number indicated no statistically significant difference between the four groups, but when ethnicity only was used as a factor, a statistically significant difference was found. The ANOVA conducted on estimated time needed with Caucasian patients and estimated time needed with Hispanic patients was significant, $F(1,205) = 3.86, p < .05$. As a group, Hispanic patients received significantly less of the provider’s time ($M = 16.80$ mins) than Caucasian patients ($M = 20.14$ min). As previously explained, however, when the effects of time spent with actual patients was covaried out, no differences in predicted time between Caucasian and Hispanic patients was found.

A paired-samples $t$ test was calculated to compare the means between time with actual patients and predicted time with Caucasian patients. The mean for time with actual patients was 20.03 min ($sd = 6.70$) and the mean for predicted time with Caucasian patients was 20.14 min ($sd = 13.28$). No significant difference was found between reported time spent with actual patients and predicted time with Caucasian patients, $t(100) = -.08, p .05$. This suggests Caucasian patients in the scenario were reportedly
likely to receive the same amount of time on average, as respondents’ reported spending with actual patients.

A paired-samples *t* test was conducted to compare the means between time spent with actual patients and time spent with Hispanic patients. The mean for time spent with actual patients was 16.93 (*sd* = 6.72), and the mean for predicted time with Hispanic patients was 16.80 (*sd* = 11.14). No significant difference between time spent with actual patients and estimated time with Hispanic patients was found, *t* (105) = .13, *p* > .05.

Scenario patients who were Hispanic were as likely to receive the same amount of time as providers reported spending with the average actual patient. While Hispanic patients as a group received less reported time with the provider than Caucasian patients, they did not receive less time than actual patients.

Fourth Research Question

The fourth research question was designed to address whether the level of knowledge of the Mexican American culture was related to providers’ treatment of patients. Three Pearson correlations were calculated between the MAAKS and respondents’ anticipated time needed with the scenario patient, information needed for diagnosis, and treatment regimen. The correlation equation for anticipated time needed with the patient was not significant, *r* (2) = .00, *p* > .96. Scores on the MAAKS are not related to respondents’ anticipated time with patients. This seems to be inconsistent with other literature that suggests that providers with less knowledge of a culture are more likely to have negative attitudes toward that culture, and consequently, may treat patients from that culture differently. It is possible that the MAAKS is too indirect a measure of attitude toward the Mexican American culture, and as such, cannot explain differences found in reported time spent.
A second Pearson correlation was calculated to determine the relationship between participants' anticipated information needed for diagnosis and their MAAKS scores. A weak correlation that was not significant was found, \( r(2) = .07, p = .30 \). Scores on the MAAKS are not related to the information providers requested for diagnosis. This may be explained by the consistently low scores providers received on the information gathered item. It is possible that a "floor effect" was created by the low scores and that the correlation coefficient does not accurately reflect the true nature of the relationship.

A third Pearson correlation was calculated examining the relationship between participants' regimen scores and their MAAKS scores. No significant relationship was found, \( r(2) = .12, p = .08 \). It seems likely that the uniformly low scores on the regimen scale may have produced a restriction of range that concealed real differences and presented an incomplete picture of the relationship between these two variables. Overall, it would appear that no relationship exists between the MAAKS scores and patient care. However, as noted, it is possible that the true nature of the relationship was masked by the low scores for information gathered and treatment regimen prescribed.
CHAPTER IV
DISCUSSION

Introduction

The results of this research yielded valuable information regarding the reported care given to Hispanic patients and whether such care differs from the care given to Caucasian patients. Additionally, the use of the Knowledge scale of the MAAKS is of value to the MAAKS’ authors, who encouraged use of the instrument for research purposes, as well as to other researchers interested in the relationship between knowledge of a culture and attitude toward that culture.

Findings

First Research Question

Results indicated an overall moderate level of knowledge demonstrated by participants. While detailed information regarding interpretation of MAAKS scores is not available, much can be said about how knowledge of different cultures influences medical care. Previous research has indicated a relationship between level of knowledge of a culture and attitude toward that culture. Fluency in the language of that culture is a further indicator of positive attitude (Chesney et al., 1982). The level of knowledge of the Mexican American culture, as well as the low number of health care providers that spoke Spanish may be of concern, particularly since the Mexican American and Hispanic populations are experiencing a health epidemic in the alarming incidence of T2DM. This disease represents a significant problem for the Hispanic population. Accessing the medical system represents another problem. The literature suggests that Hispanics may be likely to encounter additional problems even after accessing the medical system (Gonder-Frederick et al., 2002; Harris, 2001; Neufeld et al., 1998).
The level of care, moderate level of knowledge, and low level of Spanish fluency endorsed by participants may also cause problems for the medical community. Hispanics represent a substantial and growing segment of the population, and are likely to continue to grow and to need medical services. Previous research has indicated Hispanics are most likely to receive less care, and care in later stages of disease progression, than Caucasian patients (Harris, 2001). This could mean the Hispanic patients with whom providers are most likely to come into contact may have advanced stages of T2DM. Physicians have already noted that T2DM is a particularly difficult disease to treat (Larme & Pugh, 1998; Yeager et al., 1996), and preventing the disease from advancing is very desirable, but may be nearly impossible in the case of Hispanic patients, who may already have significant disease progression or whose cultural and language differences may justify more time and care than the average Caucasian patient.

Second Research Question

The second research question identified differences in reported care that vary by risk or ethnicity, and include the amount of time to be spent with the patient, information gathered to aid in diagnosis, diagnosis made, and treatment regimen prescribed. Results indicated Hispanics received significantly less time with their providers than did Caucasian patients. Additional analyses, however, revealed no differences in amount of reported time between Hispanic and Caucasian patients when the effects of time spent with actual patients were statistically removed. It seems intuitive that patients of different cultures, and who need care for a medical condition that has been acknowledged to be difficult to treat, would need more time with a provider than the average patient. This was not demonstrated by the participants. Hispanic patients were not more likely to receive additional time than average patients. This calls into question the providers' abilities to get an accurate understanding of the patients' conditions, as well as to be able to explain a
typically difficult and demanding diabetic treatment regimen in a way that a patient of another culture will grasp.

Previous research has shown disparities in communication patterns between physicians and their patients that vary by race. Shapiro and Saltzer (1981) reported physicians struggled in their interactions with Hispanic patients. They noted physicians were less likely to be able to build rapport successfully, that they did not thoroughly explain the medical regimen, and were less successful in eliciting patient feedback with Hispanic patients compared to Caucasian patients.

This again reflects growing concern about the quality and quantity of health care Hispanic patients receive. While they do not appear to receive less time than their Caucasian counterparts, it may be argued that they do not receive enough time with their providers to be able to adequately address medical concerns with the additional barriers of culture and language.

Analyses indicated no significant differences for information gathered to aid in diagnosis between Hispanic and Caucasian patients. There were also no significant differences found related to risk factors. It is possible that real differences did exist between some of these groups, and that these differences were masked by the floor effect created by the low level of endorsement of information gathered.

Perhaps of equal concern is the finding that indicates providers did not follow ADA guidelines for making a diagnosis of T2DM, regardless of patient ethnicity or risk level. The ADA recommends using at least two blood work tests, as well as asking about numerous physical symptoms. Most participants indicated they would use only one test, and most did not ask for more than two additional physical symptoms. This is concerning, because T2DM is associated with many significant physical symptoms, particularly in its advanced stage. Additionally, some estimates indicate most people who receive a diagnosis of T2DM have had the disease for at least 5 years (ADA, 2000). This means it
is very possible that T2DM may be in an advanced stage in some patients before they present to their physicians. If physicians do not ask about other medical symptoms, they will be unable to treat and monitor them, which could lead to additional medical complications. This neglect creates obvious problems for the patient, whose symptoms may worsen. It also creates problems for the medical providers trying to manage a complicated and serious disease. It should be noted that it is possible that participants were thinking sequentially when completing the survey, and were intending to wait for the results of one test to come back before requesting additional diagnostic information. Thus, providers' overall diagnostic methods may be more thorough than are reflected in these data.

Regarding correct diagnosis, high-risk patients were found to be statistically significantly more likely to receive a diagnosis of T2DM than were low-risk patients. High-risk Hispanic patients were also more likely to receive a diagnosis of T2DM than were low-risk Hispanic patients. Interestingly, there was no difference in diagnosis made for high- and low-risk Caucasian patients in receiving a diagnosis of T2DM. There was also no difference between high-risk Caucasian and high-risk Hispanic patients. It appears risk level was the only significant factor to impact diagnosis.

No statistically significant differences were found between race or ethnicity for the treatment regimen prescribed. Hispanic and Caucasian and low- and high-risk patients received the same reported care. The most likely explanation for this is the overall low scores on the regimen scale. The ADA recommends a thorough treatment regimen for patients with T2DM. Most participants did not even approach reaching the ADA level of recommendations.

While some statistically significant differences between the reported care to be given to Hispanic patients relative to White patients were found, perhaps the most striking finding of this research pertains to the larger issue of the reported medical care across the
spectrum of Hispanic, White, high- and low-risk patients. The results indicate that all patients, regardless of ethnicity or risk factors, were not likely to receive high-quality medical care in terms of procedures and information used to make a diagnosis and implement a thorough treatment regimen. Most respondents earned about one tenth of the total points possible for the two measures. While this may be a function of the limitations associated with survey research, it is also possible that the scores accurately reflect the behavior of the providers. This raises concerns and interesting questions, particularly regarding treatment.

The literature demonstrates that T2DM is becoming an increasingly important and prevalent health care problem, both for people who are at-risk for the disease, and for the medical community treating T2DM patients (Gonder-Frederick et al., 2002; Harris, 2001; Neufeld et al., 1998). Type 2 diabetes may be more of a problem for the Hispanic community, whose members tend to bear a disproportionate share of the disease prevalence. Hispanics, in general, are also known to seek medical care less often and to receive poorer care than their White counterparts (Burke et al., 2001; Harris).

The findings of this research are inconsistent with previous findings indicating poorer care for Hispanics; however, these findings may potentially shed light on another aspect of care for T2DM patients across the board. The consistently low scores for information gathered and treatment regimen prescribed are of concern to all patients, and perhaps, particularly to Hispanic patients because of the lack of detail, planning, and explanation reported by providers participating in this study.

Third Research Question

The third research question assessed differences in time spent with Hispanic, Caucasian, and the average patients. As mentioned, a statistically significant difference was found between time spent with Hispanic and Caucasian patients; however, this
difference disappeared when the effects of time spent with actual patients were statistically removed.

This lends further support to the finding that Hispanic patients, regardless of risk, were not likely to receive more time with their providers than were average actual patients. Given the low frequency of participants who spoke Spanish, and the generally moderate understanding of the Mexican American culture, that Hispanic patients are not given more time than the average patient is concerning. Significant cultural and language barriers may exist that would demand and justify spending more time with such patients to ensure quality care is provided. Perhaps a more optimistic view is that Hispanic patients did not receive less in terms of care on the measures than their Caucasian counterparts. As noted earlier, however, respondents’ reported quality of care tended to be low regardless of ethnicity of risk level.

It should be noted that participants were not specifically asked to respond about the care they provide based on ADA guidelines. That is, whether providers know the ADA guidelines is not a question that can be answered by this research. The items were written to prompt responses based on how providers actually practice medicine with their patients.

Fourth Research Question

The fourth research question assessed the impact of the level of knowledge of the Mexican American culture had on providers’ treatment of their patients. Overall, participants’ level of familiarity with the Mexican American culture was in the midrange. Their knowledge scores did not significantly correlate with any variables that measured medical care. As noted, the most likely reason for the lack of statistical significance is the overall low level of care endorsed by providers. The generally low scores (i.e., restriction of range) for information gathered and treatment regimen prescribed may have artificially lowered the correlations between these variables. It is also possible that the MAAKS
needs further research and development to establish norms and improve its validity.

Implications

The results of this research yield valuable information about the treatment of patients with high- and low-risk factors for T2DM, and for Hispanic and Caucasian patients. Perhaps more important than the differences observed is the information about how providers diagnose and treat T2DM. With some exceptions, few differences were found in terms of the way providers treat their patients; however, the data overwhelmingly suggest that providers do not report adhering to ADA guidelines for making a diagnosis of T2DM. Additionally, and perhaps of more concern, are the data that suggest that providers do not adhere to ADA guidelines in treating T2DM. While most providers, even those with low-risk patients, were able to identify the correct diagnosis, their scores in treatment of the condition were uniformly low. Over half of the providers received only 1 point out of a possible 30, and three fourths received between 1 and 3 points. The highest score in the sample of providers for treatment regimen was 6; three providers received this score.

These findings warrant concern from both a patient and provider perspective. Patients with T2DM may not be likely to receive the quality of care they need to effectively manage their disease, as well as its associated side effects. This could lead to increased medical complications, frustration, and potentially disengagement from the medical community, particularly for Hispanic patients, for whom access and comfort with the medical community is already somewhat inhibited. Further, providers may see an escalation in the frequency of their patients’ medical appointments if complications from T2DM are not treated efficiently and successfully. Complications are more difficult and expensive to treat. This would put increased strain on an already strained medical system.
Overall, providers demonstrated that they had a moderate level of knowledge about this culture. The meaning of this information is somewhat unclear because of the lack of normative data. It is also difficult to extrapolate from knowledge of the Mexican American culture to attitudes toward that culture because of the lack of correlations between the two sections of the MAAKS. Nevertheless, increasing knowledge and cultural competency among health care providers could result in better overall medical care for a vulnerable population.

Given the increasing demands on the medical community, and its growing inability to adequately meet the needs of Hispanic patients, changes in important areas would benefit both providers and patients. For example, training in cultural competence could be provided via computer assisted technologies. This would likely improve both knowledge of and attitudes toward patients of Hispanic cultures. The effects of increased knowledge and improved attitude would likely be improved care, both in terms of rapport between patients and providers and the amount and quality of the provider’s time spent with the patients.

Individual clinics could encourage a “provider by name” policy in which patients are assigned to one provider and every effort is made to book patients with their assigned providers for appointments. This would help alleviate the “handing off” of patients and reduce their dissatisfaction with seeing different providers at each visit. It would also facilitate rapport and may encourage regular visits with providers and reduce the need for patients to utilize high-end medical services, such as the emergency room.

Clinics, hospitals, and other treatment facilities may consider using a Behavioral Health Consultant (BHC) to help providers more effectively manage their patients. Typically, BHCs are psychologists by training who specialize in health-related areas and have received specific training in primary care behavioral health consultation. They function as consultants to providers who help patients change aspects of their behavior.
that may be impacting health. A BHC could assist the provider in addressing concerns such as adherence to treatment regimens, obesity, sleep disturbance, grief, as well as symptoms of depression and anxiety. This can help patients by addressing behaviors that can become problematic for their health if left unchecked. It can also help prevent the need for specialty mental health services. A culturally competent BHC could also provide training, both formal and informal, to providers. Such training could include discussion of important cultural differences particularly as they relate to the medical community.

Limitations

This research has focused on differential medical treatment between Hispanic and Caucasian patients for T2DM. The instrument used to measure knowledge of the culture, however, was specific to only one group within the larger Hispanic population (i.e., Mexican Americans). Results based on this instrument, therefore, are generalizable only to the Mexican American population, and not to the larger Hispanic population.

The survey itself has some inherent limitations. It is generally subjective in nature and lacks behavioral validation. This measure may have some of the problems associated with any measure that relies on self-report, namely, that participants responded in a manner that is inconsistent with their actual behavior.

The MAAKS posed some additional problems, particularly in the lack of normative data. As such, it is difficult to give participants scores a meaningful interpretation. The fact that the authors of the MAAKS did not publish correlations between the knowledge and attitude sections also makes interpretation less meaningful as the relationship between knowledge and attitude for this measure is unclear. Unfortunately, at the time of this research, the MAAKS was the only instrument available that was designed with medical providers in mind and purported to measure knowledge of one of the Latin American cultures.
Directions for Future Research

Future research should focus on creating norms for the MAAKS or using an instrument with established and published norms so as to allow for more meaningful interpretation. As mentioned previously, the attitude section of the MAAKS contained items that were fairly transparent, making it relatively easy for a respondent to determine which answer was the most politically correct or socially acceptable. The development of an attitude measure in which responses are not so easily discerned may yield valuable information that current measures are unable to provide.

As primary care is increasingly influenced and standardized by HMOs and managed care, it may be useful to include some of these characteristics in the patient demographic information. This would allow for analyses to determine how culture, risk factors, and ability to pay influence the kind of care a patient receives from his or her primary care provider. It is possible that insurance coverage and ability to pay are more important in terms of the treatment a patient receives than are culture and risk. Future research should focus on differentiating and clarifying these relationships.

It may also be helpful to include the patient’s preferred language as a variable in the scenarios. Doing so may prompt participants to anticipate spending more time with patients who are not fluent in English and may yield additional information about the care patients receive based on these characteristics.

Finally, a study that samples the actual behaviors of healthcare providers rather than relying on their reported behaviors would provide useful information. Such research could include a confederate going into physicians’ offices to role play the scenarios used in this research. This may shed more light on the nature of the most important factors related to health care and may help to provide a clearer picture of the nature and extent to which culture influences care.
REFERENCES


Quesada, G. (1996). Language and communication barriers for health delivery to a minority group. *Social Science and Medicine, 10*, 323-327.


APPENDICES
Appendix A:
Participant Questionnaire

**Time Started:**

- Gender: _______ Male, _______ Female
- Age
- Ethnic identity: _______ Caucasian, _______ African American, _______ Mexican American, _______ Asian American, _______ Other
- Are you a: _______ Practicing M.D., _______ Resident, _______ Intern, _______ Student, _______ P.A., _______ N.P.

5. Are you board certified? _______ Yes, _______ No, _______ N/A

6. How long have you been practicing? _______

7. Approximately how many patients do you see each day? _______

8. Approximately how much time do you spend with each patient on average, during an office visit? _______

9. Approximately what percentage of your client population is Hispanic? _______

10. Do you speak Spanish? _______ Yes, _______ No

**Time Finished:** _______
Appendix B: Patient Scenarios and Questions

**Scenario I (White low risk)**

Alan Whitman is a mildly obese Caucasian man in his mid-forties. During a routine physical examination, he complains of having to urinate frequently. His blood pressure is 110/74. After interviewing him, you learn his diet consists mostly of high-fiber, low-fat foods; his lifestyle includes moderate exercise and his family has no history of diabetes.

**Scenario II (Mexican American low risk)**

Hector Garcia is a mildly obese Hispanic man in his mid-forties. During a routine physical examination, he complains of having to urinate frequently. His blood pressure is 110/74. After interviewing him, you learn his diet consists mostly of high-fiber, low-fat foods; his lifestyle includes moderate exercise and his family has no history of diabetes.

**Scenario III (White high risk)**

Alan Whitman is an obese Caucasian man in his mid-forties. During a routine physical examination, he complains of having to urinate frequently. His blood pressure is 165/105. After interviewing him, you learn his diet consists mostly of high-fat, high-carbohydrate foods, his lifestyle includes little exercise and his family has a history of diabetes.

**Scenario IV (Mexican American high risk)**

Hector Garcia is an obese Hispanic man in his mid-forties. During a routine physical examination, he complains of having to urinate frequently. His blood pressure is 165/105. After interviewing him, you learn his diet consists mostly of high-fat, high-carbohydrate foods, his lifestyle includes little exercise and his family has a history of diabetes.
Questions

1. How much time do you feel you would need to spend with this patient before making a diagnosis?

2. What additional specific information would you need to make a diagnosis (including symptoms and tests)?

3. Given the information presented in the scenario, what is the most likely diagnosis in your opinion?

New Page

4. Tests results have confirmed the patient has Non-Insulin Dependent Diabetes Mellitus. What would you advise your patient to do?
Appendix C:
Knowledge Scale of the Mexican American Attitude
and Knowledge Scale

1. In traditional Mexican American culture, a family is one in which:
   a. only the parents and children live together.
   b. the parents are married and strictly monogamous.
   c. parents, children and relatives live together.
   d. a single mother raises the children alone.

2. Which of the following statements is false of traditional Mexican American culture?
   a. Close family ties are seen as normal and there is no need to become independent of the family.
   b. The female is regarded as the social “glue” that holds the family together.
   c. The male is expected to be the disciplinarian.
   d. Children are only valued for their economic contribution to the family.

3. In traditional Mexican American culture:
   a. the male advocates a double standard of sexual morality.
   b. the female is encouraged to be independent of the male.
   c. the elderly are treated as important only if they continue to contribute economically to the family.
   d. children who misbehave should be disciplined in public.

4. Which of the following statements regarding traditional Mexican American culture is false?
   a. Touching is commonplace among family members but not extended to non-family members.
   b. To stare at an elder or a person in authority is disrespectful.
   c. Mexican Americans speak Spanish to each other to establish rapport and camaraderie.
   d. Among Mexican Americans, a female who initiates eye contact with a male in a professional setting is showing sexual interest.
5. In *traditional* Mexican American culture, the person in authority is expected to:
   a. always be male.
   b. provide specific solutions to the problem.
   c. not share personal information with you.
   d. involve you actively in the decision-making process.

6. When faced with problems, the *traditional* Mexican American individual first turns to:
   a. the family for support and help.
   b. professionals whom he or she trusts.
   c. trusted friends and colleagues.
   d. telephone hotlines.

7. Which of the following statements is *false* concerning *traditional* Mexican American culture?
   a. Sexuality is not usually discussed either in family or professional settings.
   b. Excessive public display of affection even among family members is forbidden.
   c. It is not acceptable to express anger in the presence of elders.
   d. To argue in public is acceptable if you feel strongly about your position.

8. Which of the following descriptions of the *traditional* Mexican American female is *false*?
   a. A good mother centers her life around her children at great sacrifice.
   b. It is culturally acceptable for a woman to earn more than her husband.
   c. The married woman who is aware of her husband’s extramarital affairs is expected to suffer in silence.
   d. Women are expected to be submissive to male family members.

9. *Traditional* Mexican Americans often think that a hospital:
   a. and folk remedies should not be used together.
   b. is a place to get good health information.
   c. is designed to prevent health problems.
   d. is a place where you go to die.
10. Which of the following is false?
   a. Among Mexican Americans inhalant use is common among youths and young adults.
   b. Overweight is common among Mexican Americans, especially among women.
   c. High blood cholesterol is a serious problem among Mexican Americans.
   d. Smoking among Mexican American females is socially unacceptable.

11. Which of the following is false?
   a. Regarding AIDS/HIV infection, the Mexican American rate is nearly 3 times higher than for non-Mexican Americans.
   b. The Mexican American diet is thought to be low in animal fat but high in carbohydrates and fiber.
   c. The median Mexican American age is younger than for the total population.
   d. Heart disease and cancer are 2 of the leading causes of death in Mexican Americans.

12. Which of the following is false concerning traditional Mexican American culture?
   a. Direct eye contact with authority figures would be considered disrespectful.
   b. A Mexican American who is late for an appointment does not necessarily regard it as being irresponsible.
   c. Refusing an offer of food or drink when visiting a Mexican American family is considered rude.
   d. When working with a Mexican American family, school children can serve as interpreters if adults are unavailable.

13. In traditional Mexican American culture, when you are sick,
   a. it means that bacteria and viruses are responsible.
   b. it is acceptable to first seek folk remedies before visiting a physician or clinic.
   c. you expect to play an active role in treatment.
   d. you do not involve the family in your treatment.

14. Regarding sexuality in traditional Mexican American culture:
   a. it is commonly discussed among adults of the same gender.
   b. it is acceptable for a woman to have an affair if her husband first had an affair.
c. contraceptive responsibility is equally shared by both male and female.

d. homosexual behavior is permissible if the person doesn’t identify as homosexual.

15. Which of the following is false concerning traditional Mexican American culture?

a. The community is considered an extension of the family.

b. Barber shops, grocery stores and churches are the center of social life in a Mexican American community.

c. Social leaders in a Mexican American community are often more influential than elected officials.

d. Men will attend health programs if they are organized by local church staff.
Appendix D:

"Ideal" Diagnostic Method and Rating Form

The "ideal" diagnostic method for T2DM includes the following criteria:

1. Overnight fasting plasma glucose level above 120-130 mg/dl (2 points)
2. Casual plasma glucose is equal to or above 200 mg/dl (2 points)
3. Patient report of symptoms includes at least one of the following: increased thirst, increased hunger, sudden weight loss, tingling in hands, tingling in feet, blurred vision. (6 points)
4. Oral glucose test plasma equal to or greater than 200 mg/dl*

Rating System

Each of the first two diagnostic indicators is worth 2 points. One point is given if the respondent indicates the test (e.g., overnight fasting plasma glucose), and one point for the correct proportion (e.g., 120 to 130 mg/dl). The third item, patient report of symptoms, has six possible symptoms each worth one point. The total low score for this form is 0; the high is 10.

*Optional Because this test is not used often, this response is optional. A respondents’ score will not be increased or deflated if this response is present.
Appendix E:

“Ideal” Treatment Regimen and Rating Form

The “ideal” treatment regimen includes the following criteria:

1. Meal planning (portion control, low cholesterol, low fat, low sugar guidelines, label reading, snacking adjustments). 6 points possible

2. Exercise (how long, how hard, how often). 3 points possible

3. Self monitoring of blood glucose (blood glucose goals, how to get accurate results, interpreting blood glucose values). 3 points possible.

4. Knowledge of high and low blood sugar levels (factors that cause high and low levels, symptoms, how to treat, how to prevent, when to call a health provider). 5 points possible.

5. Foot care (daily foot care, how to do a proper foot exam). 2 points possible.

6. Sick day management (preventing life-threatening problems, what to eat and drink, blood glucose monitoring schedule, medication schedule, when to call the doctor). 5 points possible

7. Tests that should be done at least once a year (glycohemoglobin, kidney function, cholesterol and triglycerides, foot exam, eye exam, blood pressure). 6 points possible.

Each component listed above is worth 1 point for a total of 30 points. Respondents will receive 1 point for listing only category responses (e.g., meal planning).
Appendix F:

Written Debriefing Statement for the Knowledge Scale
of the MAAKS

*When studying cultures other than one's own, it is extremely important to keep open minds and remember that one's own culture is only one of literally thousands. In working with people of different cultures, it becomes increasingly important to respect other cultures, though they may have beliefs that are different from one's own.*

*Family Life*

In traditional Mexican American culture, a family is seen as extending beyond the typical Western “immediate” family and includes any number of relatives, including aunts, uncles, grandparents, great grandparents, cousins etc. Quite often, these family members live together, help raise children, and work to support the family financially. Family members (both children and elders) are seen as intrinsically valuable independent of financial contribution. The community is often seen as an extension of the family. The family is the primary unit for social, emotional and physical support and is considered more important than any one individual. The Mexican American culture is an *interdependent* culture (as compared to the U.S. independent culture). Dependence on friends and family members is accepted and valued. When faced with a problem, a traditional Mexican American person will turn to the family first for help. Consistent with the importance placed on family is the value of “not airing dirty laundry in public.” Thus, to argue in public is not acceptable.

In traditional Mexican American culture, the person in authority may be of either gender, but is typically male. He may provide solutions to a problem and may involve others actively in the decision-making process, but is expected to not share personal information. This reserve is considered a sign of maturity and strength.
**Sexuality**

Some gender roles are very defined in this culture, for example, it is not culturally acceptable for a woman to earn more money than her husband. Additionally, marriage in this culture may not be strictly monogamous. Males may advocate a double standard of sexual morality, but there are unwritten rules about having affairs (e.g., a man may have an affair, but he must not bring his mistress into a public place). A woman who is aware of her husband’s affair is expected to “suffer in silence.” Cultural rules do not permit her to have an affair. Homosexual behavior is permissible as long as the person does not identify him/herself as a homosexual. This is very similar to cultures in Eastern Europe in the 16th and 17th centuries. A Mexican American woman who initiates eye-contact with a man in a professional setting is not showing sexual interest, however, if in a social setting, eye contact may be indicating sexual interest.

**Health Care and Related Items**

In *traditional* Mexican American culture, a hospital is seen as a place where person goes to die. Though this may not always happen, it may help explain how members of this culture feel about hospitals, and more particularly, how they feel about their loved ones being confined to a hospital. This may also explain why many of this culture may seek traditional folk remedies before medical attention.

High blood cholesterol is not a serious problem among Mexican American in general. This population often tends to have very low cholesterol levels. Overweight and diabetes, however, are significant problems in this population. The diet of this population is thought to be high in carbohydrates and fiber, but low in animal fat. Unfortunately, men will not usually attend health programs if they are organized by local church staff.

When working with Mexican American families in a hospital or other medical setting, it is very important that children *not* be used as interpreters if no adults are available. Children often do not possess adequate vocabulary or understanding of hospital
procedures. Additionally, placing children in this role puts an inappropriate level of responsibility on their shoulders.
Appendix G:
Formulas for Approximate Test for Two Proportions

\[
Z = \frac{(p_1 - p_2) - 0}{\sqrt{\frac{p_1 (1 - p_1)}{n_1} + \frac{p_2 (1 - p_2)}{n_1}}}
\]
CURRICULUM VITAE

HOLLY DAY MCFARLAND

EDUCATION

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<td>M.S. Counseling Psychology</td>
<td>Utah State University</td>
<td>December, 1999</td>
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EXPERIENCE

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<td>Chief, Life Skills Support Center</td>
<td>319 Medical Operations Squadron</td>
<td>September 2002-Present</td>
<td>Grand Forks AFB, North Dakota</td>
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<tr>
<td>Dr. Samantha Timm, Supervisor</td>
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Currently, chief of the outpatient mental health center at Grand Forks Air Force, Base, North Dakota. Responsibilities include overseeing daily operations of the clinic, supervising two mental health technicians, and providing psychological service to Air Force members for a variety of clinical complaints, including depression and anxiety disorders, adjustment disorders, and stress. Responsibilities also include reviewing medical charts to determine whether security clearances should be granted, providing Commander Directed Mental Health Evaluations, to evaluate Air Force members' abilities to complete their missions, making recommendations to commanders for retention or separation of Air Force members, initiating Medical Evaluations Boards for Air Force members who are not able to complete their missions because of mental health problems, providing informal consultations to commanders about mental health issues such as depression prevention and the stresses associated with aspects of Air Force life (e.g., deployment), providing Critical Incident Stress Management when occasion requires, and providing on-call services every third week. Additionally, conduct groups at the Health and Wellness Center for tobacco cessation, weight management, healthy living strategies and motivational interviewing for physical fitness leaders in training.

INTERNSHIP

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<td>Wilford Hall Medical Center</td>
<td>August, 2001-September 2002</td>
<td>Lackland AFB, San Antonio, Texas</td>
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<td>Dr. Robert Klepac, Director</td>
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Completed internship at Wilford Hall Medical Center. Received training in outpatient mental health, clinical healthy psychology, triage and brief therapy, and primary care. Provided psychological services to Air Force members and their dependents to include family and marital therapy, individual counseling,
group psychotherapy for depression and anxiety, and psychoeducational counseling. Received training in clinical health techniques, including chronic pain management, relaxation, sleep stimulus-control and sleep restriction, biofeedback, tobacco cessation, weight management, and other behavioral techniques. Worked with patients with numerous physical and mental health problems, including Chronic Obstructive Pulmonary Disease, Myofacial pain, chronic back pain, Type 2 diabetes, heart disease, Sjogren’s depression and anxiety, and other health related problems. Received training to provide psychological services in a primary care setting including providing brief interventions to patients for a variety of mental health and clinical health problems, including stress, early depression and anxiety, sleep disturbance, appetite disturbance, erectile dysfunction, gastro-intestinal problems, and chronic pain, consulting with family practice doctors, and making referrals to specialty mental health when needed.

CLINICAL/HEALTH PSYCHOLOGY PRACTICUM

Brigham City Community Hospital

Dr. Kevin S. Masters, Supervisor

JUNE, 2000-DECEMBER, 2000

Brigham City, Utah

Completed practicum in the Cardiac Rehabilitation and Health and Wellness Center. Responsibilities included providing psychological services to Phase II and Phase III cardiac patients including psychotherapy, stress management and risk factor modification classes, support groups for spouses and caregivers of cardiac patients, individual goal setting for exercise and lifestyle maintenance and relapse prevention after release, contributing to monthly newsletter encouraging healthy lifestyle and creating informational packets on risk factor modification. Additionally involved in teaching assertiveness and stress management skills to diabetic patients to encourage adherence to diabetic regimen, initiating weight-management group for general public and exercise group for postpartum women.

MENTAL HEALTH SPECIALIST

Bear River Early Head Start

Dr. David Stein, Clinical Supervisor

Alissa Weller, On-Site Supervisor

JULY, 1998-JUNE, 2000

Worked as a Mental Health Specialist at Bear River Early Head Start. Responsibilities included coordinating all mental health services for staff and program families, offering comprehensive psychological services to staff and families including adult, family and couple therapy, crisis and consultation services, initiating and conducting psychoeducational and therapy groups for program families, facilitating staff group meetings and providing intervention as needed, preparing and delivering training and service workshops for staff, developing preventive and treatment strategies for staff burn-out, creating an official organizational crisis plan, writing bi-monthly articles for the EHS newsletter, maintaining accurate and timely case notes and receiving weekly individual supervision.

ON CONTRACT THERAPIST

Marriage and Family Relations Center

Child Evaluation and Treatment Center

Dr. Steven M. Gentry, Supervisor

MAY, 1999-APRIL, 2000
Responsibilities included conducting weekly therapy sessions including child, adult, couple and families, receiving weekly supervision, communicating with managed care organizations on behalf of clients and maintaining accurate and timely case notes.

COUNSELING PSYCHOLOGY PRACTICUM
Counseling Center
Dr. Gwena Couillard, Supervisor

Completed practicum in a university-based counseling center. Responsibilities included attending weekly practicum meetings, conducting weekly therapy sessions, maintaining accurate and timely treatment notes, receiving weekly individual and group supervision, preparing and delivering presentations to the practicum team, and offering outreach services.

SCHOOL PSYCHOLOGY PRACTICUM
Human Learning Center
Dr. Lani M. VanDusen, Supervisor

Successfully completed school psychology equivalent practicum as a counselor in the Human Learning Center. Responsibilities included pre- and post-service diagnostic testing and assessment of all clients, attending bi-weekly supervision meetings, supervising and training undergraduate tutors, conducting consultations with clients' parents and teachers, assisting in program development and implementation of new learning strategies, and various other organizational responsibilities.

RESEARCH ASSISTANT
Dr. Carla J. Reyes, Supervisor

Assisted in research focused on developing and validating a trauma assessment for native Spanish-speaking children. Responsibilities included attending weekly meetings, assisting in library research, initiating data collection, data entry and analysis, preparing data for presentation at the Twelfth Annual International Congress on Child Abuse and Neglect.

PRACTICUM IN UNIVERSITY PSYCHOLOGY CLINIC
Psychology Community Clinic
Dr. Susan S. Crowley, Supervisor

Completed practicum at the Psychology Community Clinic. Responsibilities included conducting weekly therapy sessions, attending bi-weekly meetings for individual and group therapy, and building clinical skills via external study.

CLINIC ASSISTANT
Dr. Kevin S. Masters, Supervisor

USU Psychology Community Clinic
Responsibilities included completing initial contacts with potential clients, responding to crisis calls, maintaining and monitoring all diagnostic and other testing materials, updating the Clinic’s database, and other office-related duties.

COUNSELOR AND TUTOR
Human Learning Center
Dr. Lani M. VanDusen, Supervisor

Responsibilities included pre- and post-service diagnostic testing and assessment of all clients, attending bi-weekly supervision meetings, supervising and training undergraduate tutors, conducting consultations with clients’ parents and teachers, assisting in program development and implementation of new learning strategies, and various other organizational responsibilities.

RESEARCH, PUBLICATIONS AND PRESENTATIONS

RESEARCH

DR. KEVIN MASTERS, PH.D., MAJOR PROFESSOR
McFarland, H. D., Masters, K. S. (Currently underway). Physicians’ perceptions of their Hispanic patients and the subsequent preventive care they provide.

DR. CARLA REYES, PH.D., MAJOR PROFESSOR


PUBLICATIONS


SCHOLARLY PRESENTATIONS


WORKSHOPS, GUEST LECTURES, AND IN-SERVICE PRESENTATIONS


McFarland, H. D., & Hawes, T. (2000, November). Risk factor modification. Workshop scheduled for patients in cardiac rehabilitation unit at Brigham City Community Hospital, Brigham City, Utah.

McFarland, H. D. (2000, September). Stress management. Workshop presented for patients in cardiac rehabilitation unit at Brigham City Community Hospital, Brigham City, Utah.
McFarland, H. D. (2000, September). Stress management. Workshop presented for community members at risk for Type II Diabetes at Brigham City Community Hospital, Brigham City, Utah.


