TEST OF A PATIENT-CENTERED CULTURALLY SENSITIVE HEALTH CARE MODEL FOR UNDERSTANDING TREATMENT ADHERENCE AMONG A SAMPLE OF HISPANIC/LATINO/A PATIENTS

By

JESSICA DOROTHY JONES

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To Dereck Chiu. You are missed and will never be forgotten.
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TEST OF A PATIENT-CENTERED CULTURALLY SENSITIVE HEALTH CARE MODEL FOR UNDERSTANDING TREATMENT ADHERENCE AMONG A SAMPLE OF HISPANIC/LATINO/A PATIENTS

By

Jessica Dorothy Jones

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While the overall health of the nation has improved, health disparities in illness, access, and treatment continue to persist in the United States (U.S.) between majority groups and ethnic/racial minority groups, among ethnic/racial minority groups, and between higher income groups and low-income groups. Groups in the U.S. that are disproportionately impacted by health disparities include Hispanics/Latinos/as—a group among whom the presence of the major chronic illnesses is high and adherence to treatments for these illnesses is often low. The purpose of this study was to test the usefulness of a patient-centered culturally sensitive health care model in explaining general treatment adherence among Hispanics/Latinos/as living in the U.S.

Participants in this study were 590 Hispanic/Latino/a patients living in the U.S. who receive health care from health care sites across the U.S.

Specifically, the present study examined how factors such as patient-perceived provider cultural sensitivity, trust in physician, satisfaction with physician care, and patient control in the treatment decision-making process affect general treatment adherence similarly or differently in primarily English-speaking and primarily Spanish-speaking Hispanic/Latino/a patients living in the U.S. Data from 194 primarily English-speaking Hispanic/Latino/a patients and 361 and
primarily Spanish-speaking Hispanic/Latino/a patients were used to test the effects of these factors on general treatment adherence using multi-group structural equation modeling.

No significant direct effects of patient-perceived provider cultural sensitivity on general treatment adherence were found; however, several significant indirect effects emerged. Language appeared to have moderating effects on the relationships between patient-perceived provider cultural sensitivity and general treatment adherence. Specifically, patient-perceived provider cultural sensitivity, trust in physician, and satisfaction with physician care had effects on general treatment adherence in primarily English-speaking and primarily Spanish-speaking Hispanic/Latino/a patients, but the processes and mechanisms through which they exert their effects differed between the groups. The differences may be related to language barriers as well as socioeconomic disadvantages disproportionately experienced by primarily Spanish-speaking Hispanic/Latino/as living in the U.S. These results suggest that interventions to address limited language communication among primarily Spanish-speaking Hispanic/Latino/a patients may be important for improving these patients’ treatment adherence and associated health outcomes.
CHAPTER 1
INTRODUCTION

Health of the Hispanic/Latino/a Population Living in the U.S.

While the overall health of the nation has improved, health disparities in illness, access, and treatment continue to persist in the United States (U.S.) between majority groups and ethnic/racial minority groups, among racial/ethnic minority groups, and between higher income groups and low-income groups. For example, research has shown that African Americans/Blacks, American Indians/Alaska Natives, Asians/Pacific Islanders, Hispanics/Latinos/as and other ethnic/racial minorities continue to demonstrate the poorest indicators of health when compared to their non-Hispanic White counterparts (MacNaughton, 2008).

Because of the growing numbers of Hispanics/Latinos/as in the U.S., increasing numbers of these individuals will be negatively impacted by health disparities. According to the U. S. Census Bureau (2009), Hispanics/Latinos/as have now displaced African Americans as the largest minority group, accounting for over 13% of the population. Moreover, Hispanics/Latinos/as are expected to exceed the non-Hispanic White population by the middle of the twenty-first century (LaVeist, 2004), and by the year 2050, the Hispanic/Latino/a population is expected to triple from 46.7 million to 132.8 million.

It is particularly noteworthy that nearly 31% of Hispanics/Latinos/as not only remain without a regular source of health care, but are also less likely to have seen a physician within the previous year, and are less likely to have ever received a complete physical examination (DuBard, Garrett, & Gizlice, 2006; Fulton, Rakowski & Jones, 1997). The Centers for Disease Control and Prevention have cited the following as leading causes of illness and death among Hispanics/Latinos/as living in the U.S.: heart disease, cancer, unintentional injuries (accidents),
stroke, and diabetes (Adams, Barnes, Vickerie, 2008). Other health conditions and risk factors that significantly affect Hispanics/Latinos/as are asthma, chronic obstructive pulmonary disease, HIV/AIDS, obesity, suicide, and liver disease. Additionally, Hispanics/Latinos/as have higher mortality rates for diabetes, homicide, chronic liver disease, and HIV infection than both the total population and non-Hispanic Whites when differences in age distribution are taken into account (LaVeist, 2004).

In regards to health, much of the research literature on Hispanics/Latinos/as have treated this group as a single, monolithic population rather than exploring variation in health disparities and associated factors such as health status and mortality by Hispanic/Latino/a subgroups. These subgroups in the U.S. include the following: Mexicans (66.9%), Central and South Americans (14.3%), Puerto Ricans (8.6%), and Cubans (4%) (U.S. Census Bureau, 2009). Interestingly, health status and mortality rates differ significantly among these subgroups. For example, while the rate of low birth weight infants is lower for the total Hispanic/Latino/a population in comparison to non-Hispanic Whites, Puerto Ricans have a low birth weight rate that is 50% higher than the rate for non-Hispanic Whites. Additionally, Puerto Ricans suffer disproportionately from asthma and HIV/AIDS, whereas Mexican Americans suffer disproportionately from diabetes. Puerto Ricans also have higher all-cause mortality rates than Cubans and Mexicans. Furthermore, Puerto Ricans between the ages of 25 and 54 years are at increased risk of death compared to non-Hispanic Whites, Cubans, and Mexicans. A recently published report from the National Health Interview Survey found that 16% of all Mexicans, 14% of all Cubans, and 18% of all Puerto Ricans reported that they were in fair or poor health (Hajat, Lucas, & Kington, 2000).
Health of Hispanics/Latinos/as Living in the U.S. Who Primarily Speak Spanish

Forty-seven percent of the Hispanic/Latino/a population primarily speaks Spanish, and this group also encompasses the largest immigrant population living in the U.S. (U.S. Census Bureau, 2009). According to DuBard and Gizlice (2008), the lack of English language proficiency among Hispanics/Latinos/as has been associated with poorer health outcomes. Among Hispanics/Latinos/as who are primarily Spanish-speaking, 61% do not have health insurance, placing them at risk for poor quality of care, poor health outcomes, and greater barriers to health care when compared to their English-speaking counterparts (Sundquist & Winkleby, 1999; Sundquist, Winkleby, & Pudaric, 2001; Timmins, 2002; Fiscella, Franks, Doeshcer, & Saver, 2002). Crane (1997) found that Spanish-speaking Hispanic/Latino/a patients were less likely than their English-speaking counterparts to understand their diagnoses, medications, special treatment instructions, and plans for follow-up care after being discharged from emergency care. In one study, 44% of Hispanics/Latinos/as reported that they usually had difficulty speaking with or understanding their health care provider as a result of language discordance (Doty, 2003). Additionally, 49% from the same study sample reportedly needed to use an interpreter when they sought medical care, and 30% reported that even with an interpreter they continued to have difficulty understanding what their health care provider was informing them about their health (Doty, 2003).

Studies have shown that even when insured, Hispanics/Latinos/as who primarily speak Spanish still face significant barriers to health promotion and disease prevention (Dubard, Garrett & Gizlice, 2006; Jerant, Arellanes, & Franks, 2008; Weinick, Jacobs, Stone, Ortega, & Burstin, 2004). The prevalence of health disparities faced by both primarily Spanish-speaking and primarily English-speaking U.S. Hispanics/Latinos/as has brought increasing attention of health researchers to the health and health care experiences of Hispanics/Latinos/as (Kelley,
Moy, Stryer, et al., 2005). Language barriers—even relatively minor ones—can be a major impediment to the delivery of quality health care to Hispanic/Latino/a patients utilizing the U.S. medical health care system.

**Treatment Adherence**

The occurrence or progression of mortality rates as well as the prevalence of chronic diseases among primarily English-speaking and primarily Spanish-speaking Hispanics/Latinos/as have been attributed primarily to modifiable variables such as treatment adherence and nonadherence (Cooper, 1984; Kumanyika, 2001; Kumanyika & Golden, 1991). Treatment adherence, or the extent to which a person’s behaviors (in terms of taking medication, health screening behaviors, following a diet, modifying knowledge/habits or attending clinics for follow-up appointments) coincide with the health behaviors recommended by his/her health care provider, has been intensely studied over the last 40 years (Eraker, Kirscht, & Becker, 1984; Shearer & Evans, 2001). Typically, treatment adherence has been assessed in three primary ways: self-reports, collateral reports, and indirect clinical observations (including pill counts, drug assay, tracers). However, according to Haynes (2001), despite the accuracy of indirect clinical observations, these types of assessments are the most difficult for researchers and clinicians to utilize in research and clinical settings. In regards to patient self-report of treatment adherence, a meta-analysis has shown that this method has a sensitivity of 55% and a specificity of 87% (Stephenson, Row, Macharia, et al., 1993).

Treatment adherence is a critical component for disease management success; however, nonadherence to treatment recommendations is widespread. According to DiMatteo (2004), approximately one quarter of patients consistently fail to follow their health care providers’ treatment regimen recommendations, and nonadherence rates also vary considerably across disease conditions and treatment regimens (DiMatteo, Giordani, Lepper et al., 2002). Martin,
Williams, Haskard and DiMatteo (2005) also purport that nonadherence places a huge financial burden on the U.S. economy. More specifically, it has been estimated that consequences related to nonadherence cost hundreds of billions of U.S. dollars annually (DiMatteo, 2004b), and hospitalization costs as a result of medication nonadherence are as high as 13.35 billion U.S. dollars annually in the U.S. (Sullivan et al., 1990). In addition to the economic burden nonadherence places on our society, it is also a risk factor for a variety of subsequent poor health outcomes, including up to 125,000 deaths each year (Burman et al., 1997; Christensen & Ehler, 2002; Kane et al., 2003; Smith 1989). Despite these statistics, which indicate a need to reduce the costs and deaths related to poor treatment adherence, only a few studies have examined treatment adherence rates among Hispanics/Latinos/as or have studied the cultural and patient-physician relationship related variables (i.e., trust in physician, patient satisfaction, and patient sense of interpersonal control in the decision-making process) that likely contribute to low adherence rates among this population.

**Hispanics/Latinos/as and Treatment Adherence**

Regarding the treatment adherence practices among Hispanics/Latinos/as, researchers of the National Health and Nutrition Examination Survey (NHANES) reported that only 27 to 34% of Hispanic/Latino/a patients had control over their hypertension (Margolis et al., 2007). Additionally, Gellad, Haas and Safran (2007) examined the levels of nonadherence to prescription medications among a national sample of non-Hispanic Whites, Blacks, and Hispanics/Latinos/as, and found that Blacks and Hispanics/Latinos/as were more likely than non-Hispanic Whites to report cost-related medication nonadherence. In a study examining health care provider recommended healthy lifestyle changes, Berrigan et al. (2006) found that adherence to physical activity was lower in Hispanics/Latinos/as when compared to non-Hispanic Whites. Studies focusing on the health screening behaviors of Hispanic/Latino/a
women with breast and cervical cancer found that older uninsured Hispanic/Latino/a women who had been in the U.S. the longest were more likely than their younger and insured counterparts to be overdue for a pap smear; it was also found that Hispanic/Latino/a ethnicity was a risk factor for lack of adherence to screening mammography among the women in these studies (Buki, Jamison, Anderson, & Cuadra, 2007; Wells & Roetzheim, 2007). Similar studies have reported that health insurance status and primary language predicted trust in physicians, satisfaction with health care, and screening rates among Hispanic/Latino/a women (Buki, Jamison, Anderson, & Cuadra, 2007; Sheppard, Wang, Harrison, Feng et al., 2008). Only a few other studies have considered the influence language barriers have on treatment adherence practices among primarily Spanish-speaking Hispanic/Latino/a patients living in the U.S.

While some studies have found that language barriers did not affect appointment or dropout rates (Flaskerud & Liu, 1991; Sarver & Baker, 2000), other studies have found that patients who did not speak the same language as their health care providers were less likely to adhere to their medication regimen, attend follow-up appointments, utilize non-emergency-related health care sites for care, or remain in treatment (Hornberger, Itakura, & Wilson, 1997; Takeuchi, Uehara, & Maramba, 1999). Despite the ambiguity of these findings, a number of reported findings provide further evidence that language barriers have a significant impact on the treatment adherence practices among primarily Spanish-speaking Hispanics/Latinos/as.

According to Kaplan et al. (2006), Hispanics/Latinos/as were significantly less likely to know about cardiovascular disease risks factors (i.e., how long is needed to continue lipid-lowering drug treatment in the future associated with hypercholesterolemia) when compared to Blacks and non-Hispanic Whites who participated in the same study. DuBard, Garrett and Gizlice (2006) also found that Spanish-speaking Hispanics/Latinos/as were far less likely to
know all heart attack and stroke symptoms (7% and 18%, respectively), than English-speaking Hispanics/Latinos/as (23% and 31%, respectively), non-Hispanic Blacks (28% and 41%, respectively), and non-Hispanic Whites (39% and 50%, respectively) after controlling for sociodemographic factors, access to health care, and health behaviors. These findings suggest that low English language proficiency may be an independent risk factor for poor health knowledge.

In addition to the influence language has on the treatment adherence practices among Hispanics/Latinos/as (Oomen, Owen, & Suggs, 1999), research has indicated that other cultural factors, such as ethnic/racial minority patients’ perceptions of the culturally sensitive health care behaviors and attitudes of their health care providers, can impact the health behaviors of Hispanic/Latino/a patients (Wilcher, Gilbert, Siano, & Arrendono, 1999). For instance, a provider’s ability to understand sociocultural variations in health beliefs, values and behaviors of ethnic/minority patients is crucial for patient-centered culturally sensitive health care provision (Ruterford & Roux, 2002). According to Tucker, Mirsu-Paun, van den Berg, et al. (2007), patient-centered culturally sensitive health care encompasses displaying patient-desired modifiable provider behaviors and attitudes, as well as implementing health care center policies, and displaying physical health care center characteristics and policies that culturally diverse patients identify as indicators of respect for their culture. Subsequently, these actions will enable these patients to feel comfortable with, trusting of, and respected by their health care providers and office staff.

Given that the majority of health care providers who serve the Hispanic/Latino/a patient population identify as non-Hispanic White, Hispanic/Latino/a patients will often receive health care services from providers who do not speak Spanish, understand their social situations, or
value their cultural beliefs. As a result of ethnic/racial and language discordance between health care providers and Hispanic/Latino/a patients, poor adherence to treatment regimens may ensue (Manson, 1988; Haynes, 1976; Stanton 1987; Langer, 1999; Pachter & Weller, 1993). Despite the implications of concentrating on the cultural and linguistic factors associated with the health outcomes among Hispanics/Latinos/as, research has not focused on these factors in the recent treatment adherence literature. One explanation for the lack of attention to cultural and linguistic consideration may be attributed to the current treatment adherence models that do not adequately consider the important influence of cultural and linguistic factors involved in the treatment adherence behaviors of Hispanics/Latinos/as and other ethnic/racial minority populations (Arrendondo, Pollak, & Costanzo, 2008; Oomen, Owen, & Suggs, 1999). The lack of cultural and linguistic consideration has prompted national calls for culturally sensitive research to understand treatment adherence among Hispanics/Latinos/as and other ethnic/racial minorities who are disproportionately impacted by health disparities.

By understanding the different treatment adherence practices among Hispanic/Latino/a language groups and how cultural and linguistic factors may influence their adherence practices, interventions can be tailored to improve adherence rates. Moreover, comprehensive theoretical models that specify the mechanisms linking culturally sensitive health care and other cultural factors to important health outcomes such as treatment adherence among most ethnic/racial minority groups are also needed. The use of culturally appropriate treatment adherence models can guide future research in determining the influence of cultural and linguistic factors on other treatment adherence factors, such as patient-physician relationship related variables between health providers and their ethnically/racially-diverse minority patients.
The Patient-Centered Culturally Sensitive Health Care Model

Tucker’s Patient-Centered Culturally Sensitive Health Care Model (PC-CSHC, Tucker, Herman, Ferdinand et al., 2007), which is displayed in Figure 1-1, appears to be one of the more promising models to date, as it provides a comprehensive theoretical framework for understanding and improving treatment adherence practices and health outcomes for ethnic/racial minority patients who have or are at-risk for a variety of chronic diseases. Tucker et al. (2007) posit that patient-centered culturally sensitive health care influences the perceptions patients have of their providers’ cultural sensitivity. In turn, patient perceptions of culturally sensitive care lead to feelings of comfort with, and trust in their providers, both of which enhance patient satisfaction with health care received (Harris, Luft, Rudy, & Tierney, 1995; Joffe, Manocchia, Weeks, & Cleary, 2003; Sorensen, Barbeau, Stoddard et al., 2005; Winkleby, Howard-Pitney, & Albright, 1997) and their sense of interpersonal control over decisions regarding their treatment regimens (Jahng, Martin, Golin, & Dimatteo, 2004; Like & Zyzanski, 1987). Health care satisfaction, interpersonal control, and stress influence patients’ engagement in a health promoting lifestyle (Auerbach, Clore, Kiesler et al., 2002; Baum, Garofalo, & Yali, 1999) and engagement in recommended treatment adherence practices (DiPalo, 1997; Greenfield & Attkisson, 1989; Hall, Milburn, & Epstein, 1993; Harris et al., 1995). Finally, treatment adherence and health promoting lifestyle behaviors directly impact medically-relevant outcomes such as blood pressure, cholesterol, and blood sugar levels (Engels, Gretebeck, Gretebeck, & Jimenez, 2005; Rimmer, Braunschweig, Siverman et al., 2000; Smedley et al., 2002; Thom & Tirado, 2006).
Figure 1-1. Tucker’s Patient-Centered Culturally Sensitive Health Care Model
CHAPTER 2
LITERATURE REVIEW

The purpose of this chapter is to review the research literature that is relevant to the focus of the present study, including literature that underlies its rationale. Specifically, this chapter will focus on major chronic health conditions (i.e., heart disease, cancer, stroke, and diabetes) that are prevalent among the U.S. Hispanic/Latino/a population, as well as treatment adherence rates associated with each of these chronic health conditions. In addition, the literature on the links among patient-centered culturally sensitive health care, trust, satisfaction, and interpersonal control will be reviewed in relation to treatment adherence.

Major Health Issues among U.S. Hispanic/Latino/a Populations

A recent projection by the Census Bureau shows that by the year 2040, the Hispanic population will exceed the non-Hispanic White population (National Council of La Raza, 2009). Currently, with a population of 44.3 million, U.S. Hispanics/Latinos/as remain the largest ethnic/racial minority group when compared to their other ethnic/racial minority counterparts (U.S. Census Bureau News, 2007). Hispanics/Latinos/as, in general, represent a large number of individuals of different nationalities, ethnicities, and races (Falcon, Aguirre-Molina, & Molina, 2001), and the views toward the use of such words as Hispanic or Latino to describe this particular ethnic/racial minority group have been mixed (LaVeist, 2005). For the purposes of the present study, the term Hispanic/Latino/a will be used to refer to persons participating in the study from Central and South America (including Mexico) and the Spanish-speaking Caribbean (Puerto Rico, Cuba, and the Dominican Republic).

Despite the rich ethnic and racial diversity that makes up the Hispanic/Latino/a population, much of the reviewed research literature has treated this population as a single, monolithic ethnicity/race rather than exploring variations of subgroups within this minority
population. Among the country of origin subgroups that comprise the total U.S. Hispanic/Latino/a population, Hispanics/Latinos/as who originate from Mexico are the largest, accounting for nearly 64% of those Hispanics/Latinos/as who live in the U.S. (U.S. Census Bureau, 2006). Puerto Ricans (9%) are the second largest subgroup of Hispanics/Latinos/as living in the U.S., while the rest of Hispanics/Latinos/as come primarily from Central America (7.6%) and South America (5.5%). In regards to language subgroups, 47% of the U.S. Hispanic/Latino/a population primarily speaks Spanish (LaVeist, 2005).

There are noteworthy country of origin and language differences in access to health care and prevention rates that consequently lead to disparities in mortality rates among Hispanics/Latinos/as, and these differences will be outlined further in the literature review. According to the Centers for Disease Control and Prevention, the leading causes of illness and death among Hispanics/Latinos/as living in the U.S. include heart disease, cancer, unintentional injuries (accidents), stroke, and diabetes (Adams, Barnes, & Vickerie, 2008). Although the top two leading causes of death—heart disease and cancer—for Hispanics/Latinos/as are the same as for the total U.S. population, the age-adjusted mortality rates for diabetes, homicide, chronic liver disease, and HIV infection are higher for Hispanics/Latinos/as (Carter-Pokras & Zambrana, 2001). Moreover, mortality rates and complications as a result of diabetes are more prevalent for Hispanics/Latinos/as when compared to other ethnic/racial groups (Umpierrez, Gonzalez, Umpierrez, & Pimnetel, 2007). Other health conditions and risk factors that disproportionately affect Hispanics/Latinos/as are asthma, chronic obstructive pulmonary disease, obesity, and suicide. The present study will focus on chronic health conditions that are common among Hispanics/Latinos/as who primarily speak English and Hispanics/Latinos/as who primarily speak
Spanish. The specific chronic health conditions that will be the focus of this study are heart disease, cancer, stroke, and/or diabetes mellitus.

Many Hispanics/Latinos/as have limited English-speaking proficiency, and Spanish language proficiency has consistently been negatively associated with Hispanics/Latinos/as’ knowledge of and use of preventive services, health status, and various access measures, even after controlling for education and health insurance coverage (Harlan, Berstein, & Kessler, 1991; Kirkman-Liff & Mondragon, 1991; Polednak, 1996). Compared to English-speaking Hispanics/Latinos/as, patients who primarily speak Spanish are less likely to understand their diagnosis, medications, special treatment instructions, and plans for follow-up health care (Crane, 1997). Carrasquillo, Orav, Brennan, and Burstin (1999) found that Spanish-speaking patients were more likely to be dissatisfied with their care and to report that they were unwilling to return if they had a problem with their care when compared to their English-speaking counterparts.

More often than not, Hispanics/Latinos/as, particularly Spanish-speaking Hispanics/Latinos/as, receive care from non-Hispanic health providers who do not speak Spanish. In addition to not speaking Spanish, these providers often do not understand their Hispanic/Latino/a patients’ cultural beliefs which may influence the health and illness behaviors that are being brought to the examination room (Rutherford & Roux, 2002). Studies that have examined the influence of language on the health outcomes of Hispanics/Latinos/as have shown that language barriers--even relatively minor ones--can be a major impediment to the delivery of high quality care to Hispanics/Latinos/as in the U.S. (Aguirre-Molina, Molina, & Zambrana, 2001; Molina & Aguirre-Molina, 1994).
Treatment Adherence

Adherence to health recommendations has been intensely studied over the last 40 years because of its importance to the health and well-being of patients. The concept of adherence was first recognized by Koltun and Stone (1986), and has since then been defined as the extent to which behaviors recommended or prescribed by health care providers (e.g., taking medications, following a diet, and attending clinics for follow-up appointments) are actually engaged in by patients (Eraker, Kirscht, & Becker, 1984; Shearer & Evans, 2001).

There has also been considerable controversy with regard to the use of the terms adherence and compliance. The term compliance has often been criticized because it implies the existence of power differences between patients and health care providers. The term also implies obedience to authority; furthermore, it is often associated with blaming the patient for “noncompliance” when treatments are not followed (Haynes, 2001). In order to avoid the authoritarian connotations associated with the term compliance, the term treatment adherence has often been used as a preferred alternative in recent literature (Falvo, Ed. 2004).

Treatment adherence is a critical component of disease management success; however, nonadherence to treatment recommendations is widespread. According to DiMatteo (2004), approximately one quarter of patients consistently fail to follow their health care providers’ treatment regimen recommendations. Nonadherence rates vary considerably across disease conditions and types of treatment regimens (DiMatteo, Giordani, Lepper et al., 2002). Approximately one third of patients fail to adhere to regimens for acute illnesses, while 50 to 55% of patients do not adhere to treatment regimens for chronic diseases. As an example, in a study conducted by Ward, Morisky, Lees, and Fong (2000), only 30 to 50% of patients with hypertension reportedly adhered to recommended pharmacological treatment regimens, and an even smaller percentage of those patients adhered to recommended lifestyle modifications.
Treatment Adherence Measurement

Treatment regimen adherence has been studied intensely in the medical field. However, treatment regimen nonadherence remains poorly understood because of the challenges involved with measuring the behaviors associated with nonadherence practices. Indeed, the methods that have been used to measure treatment adherence/nonadherence in research have inherent strengths and weaknesses (Sherbourne, Hays, Ordway, DiMatteo, & Kraviz, 1992). Typically, in research, treatment adherence has been assessed in two primary ways: (a) direct measurements, which include biochemical analyses and direct observation of patients; and (b) indirect measurements, which include medication measurements (pill counts, drug assay, tracers) and self-reports.

Direct clinical observations and biochemical analyses

According to Haynes (2001), although they are more accurate, direct clinical observations and biochemical analyses are the most difficult and most expensive methods for researchers and clinicians to utilize in research and clinical settings to measure treatment adherence. Furthermore, physiological measures tend to also be expensive, cumbersome, and not amenable to assessing many treatment adherence behaviors (such as diet and exercise). It is of particular importance that these measures may promote an adversarial relationship between the evaluator and the patient (Sherbourne, Hays, Ordway, DiMatteo, & Kraviz, 1992).

Biochemical analyses involve the assessment of actual levels of drugs ingested in blood, urine, or other bodily secretions, and they confirm whether the patient has taken his/her medication (Shearer & Evans, 2001). Although more accurate, this method of measurement is not effective for monitoring day-to-day adherence (Burke & Dunbar-Jacob, 1995), and is limited to medication adherence as opposed to diet and/or exercise adherence.
Medication measurement

Medication adherence measurement involves monitoring the number of pills or dosage units taken between each patient’s visit, and is considered the classical objective measure of adherence. As one of the simplest and most objective methods of treatment adherence measurement that can be employed, this method’s weakness is similar to that of biomedical analyses. Medication measurement often excludes measurement of other forms of adherence such as diet, exercise, or preventive health behavior adherence, and in addition may induce social desirability (Haynes, 2001). Moreover, this method does not provide information on accuracy of dosage or timing of medication (Shearer & Evans, 2001).

Self-reports

In regards to patient self-report of treatment adherence, a meta-analysis has shown that this method of measurement has a sensitivity of 55% and a specificity of 87% (Stephenson, Row, Macharia, et al., 1993). The use of self-report measures of treatment adherence has often provoked patients to respond in a socially desirable manner (Sherbourne, Hays, Ordway, DiMatteo, & Kraviz, 1992). Although self-reports have been stated to be subjective and prone to error, this type of measurement has been especially relied on for its simplicity and convenience, as well as its comprehensiveness and cost-effectiveness (DiMatteo, 2004; Hays et al., 1994). Additionally, self-report measurement of treatment adherence in particular can capture a wide range of research related behaviors, and has been the preferred method to analyze treatment adherence behaviors. Given these considerations, self-reports were utilized to measure treatment adherence in the present study.

Consequences of Treatment Nonadherence

Nonadherence to treatment recommendations among patients with chronic illnesses is a major barrier to favorable treatment outcomes. Suboptimal adherence to medications, low
physical activity rates, and unhealthy diets have been associated with significantly more hospitalizations and emergency room visits, poorer health outcomes, lower quality of life, more disability-related absences from work, greater stress, and higher health care costs.

In a review of the literature regarding adherence to medical treatment recommendations, DiMatteo (2004) estimated the costs of nonadherence for several specific diseases. The following costs of treatment nonadherence by specific disease were reported by DiMatteo (2004): $8.4 million for hypertension, $7.6 million for diabetes, and $4.5 million for cancer. Martin, Williams, Haskard and DiMatteo (2005) purport that nonadherence places a huge financial burden on the U.S. economy. It has been estimated that in the U.S., the consequences related to treatment nonadherence cost hundreds of billions of U.S. dollars annually (DiMatteo, 2004b), and hospitalization costs as a result of medication nonadherence are as high as $13.35 billion annually in the U.S. (Sullivan et al., 1990).

In addition to the economic burden it places on our society, treatment nonadherence is also a risk factor for a variety of subsequent poor health outcomes, including up to 125,000 deaths each year (Burman et al., 1997; Christensen & Ehler, 2002; Kane et al., 2003; Smith 1989). Despite these statistics, which indicate a need to reduce the costs and deaths related to poor treatment adherence, only a few studies have examined treatment adherence rates among Hispanics/Latinos/as or have studied the cultural and patient-physician relationship related variables (i.e., trust in physician, patient satisfaction, and patient sense of interpersonal control in the decision-making process) that likely contribute to poor adherence practices among this population.

**Forms of Patient Nonadherence**

Falvo (2004) states that there are several forms of treatment nonadherence including: (a) appointment keeping nonadherence, (b) medication nonadherence, (c) dietary and other healthy
lifestyle changes nonadherence, and (d) nonadherence to cancer screening and preventive health practices.

**Appointment keeping nonadherence**

A patient’s failure to keep an appointment can have serious consequences for that patient. Missed appointments for regular check-ups, diagnostic procedures, or referrals to a specialist can allow early stages of disease to go undetected, and can lead to complications in relation to the current disease. A study of 84,040 patients with diabetes demonstrated the consequences of nonadherence with follow-up appointments (Karter et al., 2004). Specifically, the study examined the relationship between missed appointments and glycemic control in a large, managed care population of diabetic patients. Results showed that 12% of the study’s participants missed more than 30% of their scheduled appointments during the year 2000. Additionally, participants who failed to keep their follow-up appointments were more likely to have poorer glycemic control after adjusting for age and sex, clinical status, and health care utilization.

Schectman, Schorling, and Voss (2008) also found that adherence to appointments was a strong predictor of diabetes metabolic control in a sample of 4,253 predominately lower socioeconomic status patients with diabetes utilizing a rural health care system in Virginia. Not all missed appointments have the consequences described in the studies above; however, patients’ failure to keep appointments can affect health care delivery, not only in terms of time and money but also in terms of delay of treatment (Denberg et al., 2006; Falvo, 2004; Ogedegbe, Schoenthaler, & Fernandez, 2007).

**Medication nonadherence**

Poor adherence to medication treatment regimens can undermine the effectiveness of health care and quality of life for patients suffering from a variety of chronic illnesses (Haynes,
McDonald, & Garg, 2002). Falvo (2004) outlines the following forms of medication nonadherence: (1) never having prescriptions filled, (2) altering the prescribed dose (taking either too much or too little of the medication, or varying the time interval at which the medication is taken), and (3) neglecting to follow the full course of treatment (e.g., stopping the medication as soon as symptoms subside). Such forms of medication nonadherence can have deleterious effects on major health outcomes of patients with severe chronic illnesses.

According to Haynes, McDonald, and Garg (2002), medication adherence rates have been found to be as low as 50 percent. Poor adherence to antihypertensive medication has been found to lead to unnecessary complications and premature death (Chin & Goldman, 1997 from Falvo, 2004). In a study using data from the 2005 Health Styles Survey, of the 1,432 respondents who participated, 28% reported having difficulty taking their antihypertensive medications (Vawter, Tong, Gemilyan, & Yoon, 2008). Of those respondents, “not remembering” (32%) was the most common reason for medication nonadherence, followed by cost of medication (23%), having no insurance (22%), and side effects from taking prescribed medication (13%).

**Nonadherence to dietary and other healthy lifestyle changes**

Healthy lifestyle changes (e.g., engaging in health-promoting behaviors in addition to pharmacological treatment) are often recommended by health care providers to prevent or minimize the onset of negative health consequences from hypertension and other chronic illnesses such as diabetes mellitus. Recommended health behaviors for individuals diagnosed with or at high risk for such chronic illnesses include (a) aerobic physical activity, (b) dietary modification, (c) smoking cessation, and (d) weight loss if overweight (Baumann, Chang, & Hoebke, 2002; Haynes, McDonald, & Garg, 2002).

Research findings reported on the adoption of recommended lifestyle modifications have concluded that such modifications are associated with a significant reduction in blood pressure,
prevention or delay of hypertension incidence and its related health conditions, enhancement in antihypertensive drug efficacy, and a major decrease in cardiovascular diseases (e.g., kidney disease, stroke, congestive heart failure, and renal disease). Furthermore, one group of researchers has documented that lifestyle nutrition modifications such as limiting the intake of salt and alcohol and eating a diet that emphasizes vegetables, fruits, and low-fat or fat-free dairy products can reduce systolic and diastolic blood pressure readings by 3.5 and 2.1 mmHg, respectively (Appel, 2003; Rankins, Sampson, Brown, & Jenkins-Salley, 2005; Svetkey, Harsha, Vollmer et al., 2003).

In studies that have implemented the Dietary Approaches to Stop Hypertension (DASH) Diet, which includes fruits, vegetables, and low-fat dairy products with a reduced content of dietary cholesterol, it has been found that individuals who followed this diet have shown significant and desirable changes in blood pressure readings and over-all dietary intake (Appel, 2003; Appel, Champagne, Harsha, Cooper, & Obarzanek, 2003; Rankins, Sampson, Brown, & Jenkins-Salley, 2005). Additionally, researchers report that the effects of the Sodium DASH Eating Plan, which emphasizes limited intake of salt, are similar to the effects of a single drug therapy, and that the combination of the two treatments as compared to either one alone can result in even better blood pressure reduction results (NIH, 2003).

Nonadherence to cancer screening and preventive health practices

Health screening behaviors, particularly cancer screening behaviors have been identified as a national public health goal of Healthy People 2010 (U.S. Department of Health and Human Services, 2009). The lack of cancer screenings for breast, cervical, and prostate cancer has been the focus of much attention in the recent treatment adherence literature. Health screening behaviors are generally recommended by health care providers to detect diseases in their earliest
and most treatable stages, delay the onset of chronic health problems or slow the rate of disease progression (Wu, 2003).

Authors of a study examining adherence to cancer screenings among 387 emergency department patients found that two-thirds of the women (67%) and half of the men (51%) were compliant with recommended cervical, breast, testicular, and prostate cancer screenings in the past three years (Ginde, Millen, Love, Pang, & Camargo, 2008). In a summary of the most current data on cancer screening rates for U.S. adults published by the American Cancer Society, it was reported that uninsured women aged 40 to 64 years were less likely than insured women of the same age group to have had a mammogram, and have had both a mammogram and a clinical breast exam (Smith, Cokkinides, & Eyre, 2007).

In summary, it is apparent that treatment nonadherence is a serious national health concern. The following conclusions regarding treatment nonadherence emerge from the research on this topic: (1) the prevalence and forms of nonadherence vary across disease type and disease severity, (2) the consequences of treatment nonadherence greatly impact U.S. citizens, not only related to health outcomes, but financially as well, and (3) understanding the complexities of treatment nonadherence can aid researchers in examining factors related to its occurrence.

**Treatment Adherence Among U.S. Hispanic/Latino/a Populations**

Researchers recognize and are concerned that the adoption of recommended lifestyle modifications (e.g., healthy lifestyle behaviors) may be harder for certain groups in the general population than others to achieve better blood pressure control rates. Studies examining the adherence rates of Hispanics/Latinos/as suggest treatment adherence is a major challenge for certain ethnic/racial groups.
Appointment Keeping Nonadherence in Hispanic/Latino/a Populations

Regular routine health care visits and follow-up appointments are key factors in the detection of early stages of disease and the prevention of further chronic disease complications among all patients including vulnerable minority and low-income patients. Unfortunately, low-income, ethnic/racial minorities not only are less likely to receive routine check-ups but also are less likely to optimally adhere to follow-up visits compared to non-Hispanic Whites. The number of low-income, minority, and medically underserved minorities with inadequate adherence or nonadherence to recommended follow-up tests can be as high as 50% (Kaplan, Bastani, Marcus, Breslow, Nasseri, Chen, 1995; Lerman, Hanjani, Caputo, et al., 1992; Miller, Siejak, Schroeder, Lerman, Hernandez, Helm, 1997; Marcus, Kaplan, Crane, et al., 1998; Paskett, McMahon, Tatum, et al., 1998).

In addition to encountering several barriers to accessing the health care system, Hispanics/Latinos/as may experience several challenges to the receiving care on a consistent and regular basis. Moreover, when Hispanics/Latinos/as use the health care system, factors such as the patient-physician relationship, environment of the health care clinic, and patient perceptions of the overall health care experience related to adhering to health care provider recommendations may be less than optimal (Block & Branham, 1998; Miller, Roussi, Altman, Helm, & Steinberg, 1994; Ramsey, Cheadle, & Neighbor, 2001). In a qualitative study of 103 African American (15%), non-Hispanic White (32%), and Hispanic/Latino/a (53%) women who had had a mammogram within the past three years, difficulties with scheduling and following-up with mammogram appointments were reported among the women (Engelman, Cizik, & Ellerbeck, 2005). Specifically, these reported difficulties related to the following barriers: (a) the location of clinics where appointments were held, (b) work schedules, and (c) arrangement of appointments. Pippins, Alegria, and Haas (2007) also found that poor quality of primary care was associated
with difficulties getting an appointment over the phone among insured Hispanics/Latinos/as with low English-language proficiency.

It was suggested by Ell, Vourlekis, Muderspach et al. (2002) that negative encounters with the health care system and health providers, and personal and financial stressors can act as barriers to recommended follow-up health care visits among ethnic minority women, especially those who are Spanish-speaking. Researchers have suggested that a breakdown in patient-physician communication may be attributable to low follow-up rates by patients, in addition to inadequate patient tracking and record-keeping and flexible appointment scheduling resources in many health care settings (Hunt, de Voogd, Akana, & Browner, 1998; McKee, Lurio, Morantz, Burton, & Mulvihill, 1999; McKee, Schecter, Burton, & Mulvihill, 2001; Wall, Moore, El-Tamer, & Reilly, 1998).

**Medication Nonadherence in Hispanic/Latino/a Populations**

According to Perez-Stable and Salazar (2004), the levels of awareness and control of chronic health conditions such as hypertension remain low among Hispanics/Latinos/as living in the U.S. Gellad, Haas, and Safran (2007) examined the adherence levels to prescription regimens among White, Black, and Hispanic/Latino/a Medicare beneficiaries and found that nonadherence to prescription drugs resulted in poorer control of chronic health conditions and that the Hispanics/Latinos/as and Blacks from this study were less likely than the non-Hispanic White participants to adhere to prescribed medication regimens due to cost.

It has also been reported that among a sample of African American and Hispanic/Latino/a hypertensive patients living in an inner-city, nonadherence to blood pressure medication regimens was significantly associated with having blood pressure examined in emergency room visits, a lack of a consistent health care provider, having a current smoking addiction, and being of a younger age (Shea, Mirsa, Ehrlich, Field, & Francis, 1992). In a study by Kaplan,
Bhalodkar, Brown, White and Brown (2006) that was conducted to examine how health knowledge influenced the intent to follow medication treatment regimens among primarily Spanish-speaking and English-speaking Hispanics/Latinos/as, Blacks, and non-Hispanic Whites, it was found that the predominately Spanish-speaking Hispanics/Latinos/as and Blacks were significantly less likely than the non-Hispanic Whites to think that they would need to continue taking medication indefinitely or to know how long they would need to continue using their prescribed medications. In another study examining ethnic and gender differences in psychological factors, glycemic control, and quality of life among adult type 2 diabetic patients, it was found that both English-speaking Hispanics/Latinos/as and Spanish-speaking Hispanics/Latinos/as reported having more difficulty with blood sugar monitoring than their non-Hispanic White, Black, Asian-Indian counterparts (Mirsa & Lager, 2009). Additionally, in this study it was found that the Spanish-speaking Hispanics/Latinos/as had the poorest control of their diabetes.

It is noteworthy that only a few medication adherence research studies include Hispanics/Latinos/as. However, in the studies that have included a representative sample of Hispanics/Latinos/as, less than suboptimal medication adherence rates and related health outcomes have been found among this ethnic/racial group. Particularly among Spanish-speaking Hispanics/Latinos/as with chronic health conditions, language differences between them and their health care providers can present a potential barrier to the delivery of and adherence to provider recommended medication treatment regimens.

**Nonadherence to Dietary and Other Healthy Lifestyle Changes in Hispanic/Latino/a Populations**

Research has shown that ethnic/racial minorities tend to have less knowledge and awareness of any chronic health conditions they may have been diagnosed with, and find it
challenging to implement healthy lifestyle changes designed to reduce chronic illness risk (Perez-Stable & Salazar, 2004). Baumann, Chang and Hoebeke (2002) have underscored the critical and urgent need for prevention programs to address the lack of healthy lifestyle behaviors among disadvantaged ethnic/racial populations who are at high risk for chronic health conditions. In one study examining the frequency of walking among older Mexican-American women with cardiovascular diseases, Keller and Cantue (2008) found that 46% of the participants did not engage in leisure-time physical activity and 38% were obese prior to a physical activity intervention for coronary heart disease risk reduction.

Another study that examined leisure-time physical activity (LTPA) and non-leisure-time walking and bicycling (NLTWB) in a sample of 36,063 White (53%) and 9,242 Hispanic/Latino/a (24.7%) individuals who participated in a 2001 California Health Interview Survey found that (a) adherence based on LTPA was greater in men than in women, declined with age, increased with education and income level, and was lowest among participating Hispanics/Latinos/as, and (b) adherence with NLTWB was similar in men and women, showed a U-shaped relationship with age, decreased with income, and was highest in Hispanics/Latinos/as (Berrigan, Troiano, McNeel, DiSogra, & Ballard-Barbash, 2006). A noteworthy implication from this study is that the inclusion of NLTWB reduces but does not eliminate disparities in adherence to recommended levels of physical activity between non-Hispanic Whites and Hispanics/Latinos/as. In a recent study, Lopez, Cook, Horng and Hicks (2008) examined the likelihood of reporting receipt of and adherence to lifestyle modification recommendations among 1,904 non-Hispanic White, 883 non-Hispanic Black, and 710 Hispanic/Latino/a older (above 60 years old) individuals. Although adherence rates by racial/ethnic group were not a focus of the study, non-Hispanic Blacks reported higher rates of adherence when compared to
non-Hispanic whites, and Hispanics/Latinos/as reported the lowest rates when compared to both ethnic/racial groups.

In studies to determine adherence to provider recommended health promoting lifestyle changes, the Health-Promoting Lifestyle Profile II (HPLP II) has been used to measure the behavioral dimensions of a health promoting lifestyle (exercise, healthy eating, health responsibility, etc.). The Spanish-version of this measure has been used only in a few studies that examined the endorsement of health promoting lifestyle behaviors among Hispanics/Latinos/as who primarily speak Spanish and Hispanics/Latinos/as who were mostly of Mexican origin (see Walker et al., 1990; Kerr & Ritchey, 1990; Kuster & Fong, 1993; Duffy, Rossow, & Hernandez, 1996). In the few studies, the Hispanic/Latino/a respondents did not endorse the exercise and health responsibility dimensions of the HPLP II; however, these respondents highly endorsed the behavioral and interpersonal dimensions of the HPLP II.

**Nonadherence to Cancer Screening and Preventative Health Practices in Hispanic/Latino/a Populations**

Hosler and Melnik (2005) found that adult Puerto Ricans living in New York with diagnosed diabetes were significantly less likely to receive annual A1C testing, cholesterol testing, blood-pressure-lowering medication, and pneumococcal vaccination when compared to the general population of New York. Similarly, survey data from 12,100 Mexican adults ages 50 and older who participated in the 2001 Mexican Health and Aging Study indicated that this group was less likely to receive hypertension, cholesterol and diabetes preventive screening than those insured within the last two years prior to the interview date (Pagan, Puig, & Soldo, 2007). Similar results were found for mammography and Pap smear tests for women aged 50 to 69 and for prostate cancer screening for men aged 50 to 69.
Buki, Jamison, Anderson, and Cuadra (2007) found that uninsured Hispanic/Latino/a women were less exposed to cancer education, which was found to be an important predictor of screening among these women. Lees, Wortley, and Coughlin (2005) found that Blacks and both English-speaking Hispanics/Latinos/as and Spanish-speaking Hispanics/Latinos/as participating in the National Health Interview Survey were significantly less likely than non-Hispanic Whites to receive preventative services such as the receipt of pneumococcal vaccination as well as mammogram and endoscopy cancer screening for breast and colorectal cancer, respectively. Similarly, Hispanic/Latino/a women with limited English proficiency who were single, young, or poor reported greater fear of discovering cancer, believe that the costs (emotional and economic) of Pap smear tests is too high, have more traditional values, and were the most at-risk for cervical cancer in the future (Arrendondo, Pollack, & Costanzo, 2008).

In a study investigating cancer screening rates among Hispanic/Latino/a subgroups living in the U.S., it was found that Dominican women had 2.4 times greater likelihood of having had a mammography exam when compared to Mexican, Cuban, Central/South American, and other Hispanic/Latino/a women (Sheinfeld & Heck, 2005). Additionally, Cubans had the worst rates of cervical cancer screening compared to other groups between the ages of 21 and 70, as well as the lowest adherence to clinical breast examinations when compared to their Hispanic/Latino/a subgroup counterparts. Alba and Sweningson (2006) found that low English proficiency among Hispanics/Latinos/as living in the U.S. is a barrier to receiving a recommendation for a Pap smear. Based on the cited findings, research is needed to explore specific mechanisms responsible for the low adherence rates to cancer screening and preventive health practices among Hispanics/Latinos/as.
In summary, although the impact of treatment nonadherence is widely studied, data on the prevalence and consequences of treatment nonadherence among the Hispanic/Latino/a population is limited in the literature. Currently, studies on treatment nonadherence imply that, compared to the non-Hispanic White and other racial/ethnic minority counterparts, Hispanics/Latinos/as (a) are less likely to adhere to health care provider recommendations to obtain follow-up tests and keep routine appointments, (b) are more likely to have suboptimal medication adherence, (c) are less likely to engage in physical activity and other health-promoting behaviors that are frequently recommended in conjunction with medication treatment regimens, and (d) are less likely to screen for cancer and other deleterious health conditions as well as take preventative measures to reduce the incidence of these conditions. In addition, language barriers and poorer communication with health care providers have been associated with poorer adherence behaviors among primarily Spanish-speaking and primarily English-speaking Hispanics/Latinos/as. Overall, the findings from the aforementioned studies have provided impetus for the present study that will focus on the unique cultural and language factors that influence treatment adherence behaviors among Hispanics/Latinos/as who are at risk for severe chronic health conditions.

Theories to Understand Treatment Adherence Among the Hispanic/Latino/a Population

Given the extent of suboptimal adherence to provider treatment recommendations, there are many models of adherence that have been proposed in the adherence literature. Three of the major treatment adherence models/theories are the Health Belief Model, the Theory of Reasoned Action, and the Theory of Planned Behavior. Through the utilization of these models/theories of adherence in studies of treatment adherence, the association between patients’ health beliefs and adherence has been evidenced.
Early studies of adherence have often utilized the Health Belief Model (HBM), which postulates that the extent to which an individual adheres depends upon perceived disease severity, susceptibility to the disease, potential benefits of the treatment recommended, and barriers to following the treatment (Becker & Mainman, 1975). Studies using the HBM as a framework have often focused on perceptions of the susceptibility to a health problem, the severity of the health problem, and the barriers to health protective action as influences on treatment regimen adherence (Spoth & Redmond, 1995). Varying degrees of support have been found for this model. The Theory of Reasoned Action (TRA) has also been used with varying degrees of success to explain adherence to treatment regimen recommendations. The TRA was derived from the HBM. The TRA hypothesize that attitudes, perceived control, and social (subjective) normative factors influence intention to adhere, which in turn, determine one’s behaviors related to treatment adherence. Specifically, the attitudes component of the TRA is a function of the beliefs held about the specific adherence behavior, as well as the evaluation (value) of the likely outcomes of the behavior, which result in an expectancy-value interaction (Ajzen and Fishbein (1980). The Theory of Planned Behavior (TPB) was introduced as an attempt to account for behaviors that are not made by volitional control. In addition, the TPB includes a perceived behavioral control component to measure the perceived ease or difficulty of performing the behavior – a component that is not included in the TRA and HBM. The perceived behavioral control component also assumes and reflects a person’s past experiences as well as anticipated impediments and obstacles related to a behavior (Smith & Biddle, 1999; Ajzen, 1991). More specifically, based on the TPB, a person’s intention to perform a behavior is the central determinant of that behavior, much like in the case with the TRA (Ajzen, 2002a; Ajzen, 2002b).
Limitations of General Theories and Models of Treatment Adherence

Existing models of treatment adherence, including those described above, often represent the views of a predominately Eurocentric belief system. Thus, available treatment adherence models typically fail to recognize barriers such as language, economics, family values, and other cultural beliefs that may influence the treatment and adherence behaviors of ethnic/racial minorities diagnosed with chronic health conditions (Oomen, Ownen, & Suggs, 1999). The lack of culturally-relevant treatment adherence models has prompted national calls for comprehensive, contextualized understanding of the treatment adherence among ethnic/racial minorities. Such an understanding can lead to development of culturally sensitive treatment adherence interventions to improve treatment adherence, particularly among ethnic/racial minorities living with chronic health conditions. Moreover, there is a need for comprehensive theories that specify the mechanisms linking culturally sensitive health care to important health outcomes such as treatment adherence among specific ethnic/racial minority groups.

Tucker’s Patient-Centered Culturally Sensitive Health Care (PC-CSHC) Model

The Tucker’s Patient-Centered Culturally Sensitive Health Care Model (PC-CSHC, Tucker, Herman, Ferdinand et al., 2007) displayed in Figure 1 appears to be a promising model to examine the treatment adherence practices of Hispanics/Latinos/as, as it provides such a comprehensive conceptual framework for understanding and improving health outcomes for ethnic/racial minority patients at risk for a variety of chronic health conditions (Davis, Schoenbaum, & Audet, 2005; Showstack, Rothman, & Hassmiller, 2003; Watson, 2005). This model is unique since it considers culturally sensitive health care from the perspective of patients rather than from the traditionally sought perspective of experts. Specifically, culturally sensitive health care is considered to be care that consists of modifiable patient-desired provider and office staff behaviors and attitudes, health care center policies, and health care center physical
characteristics that culturally diverse patients identify as indicators of respect for their culture and that enable these patients to feel comfortable with, trusting of, and respected by their healthcare providers and office staff (Tucker, Mirsu-Paun, van den Berg, et al., 2007).

A basic premise of the PC-CSHC model is that (a) patient and provider training can promote patient-centered culturally sensitive health care as indicated by physical environment characteristics of the healthcare center, provider behaviors/attitudes, and office staff behaviors/attitudes; (b) this care influences patients’ perceived levels of provider cultural sensitivity and interpersonal control--both of which impact patients’ level of engagement in a health-promoting lifestyle and level of healthcare satisfaction; (c) the level of healthcare satisfaction influences patients’ level of treatment adherence; and (d) both the level of treatment adherence and the level of engagement in a health promoting lifestyle directly influence patients’ health outcomes/statuses (Tucker, Mirsu-Paun, van den Berg, et al., 2007).

Prior to the PC-CSHC model, cultural sensitivity in healthcare has been described primarily by professional experts. In particular, it has been described as “the ability to be appropriately responsive to the attitudes, feelings, or circumstances of groups of people that share a common and distinctive racial, national, religious, linguistic, or cultural heritage” (Office of Minority Health, 2001). Definitions of cultural sensitivity from schools of public health also include that it is “the extent to which ethnic/cultural characteristics, experiences, norms, values, behavioral patterns and beliefs of a target population as well as relevant historical, environmental and social forces are incorporated in the design, delivery and evaluation of targeted health promotion materials and programs” (Resnicow, Baranowski, Ahluwalia, & Braithwaite, 1999, p. 11). In a study examining the communication between healthcare providers and ethnically different patients, cultural sensitivity in healthcare was defined as involving a “willingness to
use cultural knowledge while interacting with patients, and considering culture during discussions and recommendations for treatment” (Ulrey & Amason, 2001, p. 450). Culturally sensitive health care has also been described by Majumdar, Browne, and Roberts (2004) as care in which health care providers give their services in a manner that is relevant to patients’ needs and expectations.

Herman, Tucker, Ferdinand, et al. (2007) take the definition of cultural sensitivity one step further by hypothesizing that patient-centered culturally sensitive health care not only encompasses the meaning of cultural competence, but also includes an emphasis on “patient centeredness” (p. 8). Patient centeredness is when the patient’s wants, needs, perceptions, and feelings inform the health care delivery process and the patient’s feelings of interpersonal control and empowerment are fostered. Thus, patient-centered culturally sensitive health care, as proposed by Tucker et al. (2007), emphasizes the display of specific behaviors, attitudes, and knowledge, and the creation and implementation of physical health care characteristics and policies that culturally diverse patients reported as important in health care experiences.

According to the PC-CSHC Model, not only does patient-centered culturally sensitive health care influence the views patients have of their providers’ cultural sensitivity, but these patient perceptions of culturally sensitive health care can also lead to feelings of comfort and trust in their providers. Both comfort and trust then enhance patient satisfaction with health care received (Harris, Luft, Rudy, & Tierney, 1995; Joffe, Manocchia, Weeks, & Cleary, 2003; Sorensen, Barbeau, Stoddard et al., 2005; Winkleby, Howard-Pitney, & Albright, 1997), and their sense of interpersonal control over their health and in dealing with health care related issues (Jahng, Martin, Golin, & Dimatteo, 2004; Like & Zyzanski, 1987).
Tucker’s PC-CSHC Model is consistent with the view of others in that patient-perceived cultural sensitivity in the health care can influence the adherence to treatment behaviors and, ultimately, health outcomes of patients (Lukoschek, 2003; Rose, Kim, Dennison & Hill, 2000; Tschann, Adamson, Coates, & Gullion, 1988). It has been asserted by some researchers that low adherence to recommended treatment behaviors among ethnically and racially diverse patients is to some degree due to limited levels of culture-related knowledge, skills, experience, and awareness demonstrated by their health care providers (Shapiro, Hollingshead, & Morrison, 2002). Although not within the scope of the present study, according to the Tucker’s PC-CSHC Model, engaging in a health promoting lifestyle directly also impacts medically-relevant health outcomes. Clearly, understanding the role of patient-centered culturally sensitive health care in low-income and minority primary care patients’ treatment adherence, other health promoting behaviors and health statuses/outcomes is needed, as this understanding will enlighten needed interventions to promote health among these patients (Tucker, Herman, Ferdinand et al., 2007).

In summary, although there have been various models of treatment adherence presented in the literature review, Tucker, Herman, Ferdinand et al. (2007) present a comprehensive theoretical framework that endorses the concept of patient-centered culturally sensitive health care and the model explains the links between such care and patients’ treatment adherence and health status variables. Moreover, this model also attempts to recognize the various complexities inherent to the patient-physician relationship (i.e., patient satisfaction, interpersonal control, trust) related to cultural differences and will serve as the theoretical framework for the present study. However, in a recent test of the PC-CSHC model, Tucker, Jones, Herman, Rice and Marsiske (2009) found that physical stress was not linked to provider cultural sensitivity or any patient-physician relationship related variables among an ethnic/racial minority sample of
African American patients, and thus a reduced modified version of the PC-CSHC model (see Figure 2-1) will be utilized in the present study consisting only of the patient-centered culturally sensitive health care, trust in physicians, patient interpersonal control, patient satisfaction, and treatment adherence variables.

**Patient-Centered Culturally Sensitive Health Care and Treatment Adherence Among English-speaking Hispanics/Latinos/as and Spanish-speaking Hispanics/Latinos/as**

Culturally sensitive health care has been cited as a type of health care that can help overcome communication barriers experienced by Hispanic/Latino/a patients utilizing the health care system. However, only a few studies have focused on how cultural and linguistic norms and beliefs impact Hispanics/Latinos/as’ views of the treatment they receive from their health care providers. Some of the few studies that have examined the cultural sensitivity or cultural competence of health care have concluded that language barriers as well as the miscommunication and relationship discordance between Hispanic/Latino/a patients and their health care provider contribute to significant problems for these patients in terms of comprehension and retention of medical treatment regimen information and treatment adherence (Murphy, Roberts, Hoffman, & Molina, 2003). In a study of language concordance between physician and patient investigated as a determinant of compliance among patients with asthma, it was found that language discordant groups were more likely than language concordant groups to (a) be non-adherent with regard to taking their medication (b) miss appointments, and (c) make emergency room visits (Manson, 1988). The interaction of language and ethnicity has been found to significantly influence what medication prescriptions are understood by Hispanic/Latino/a patients and how well physicians were rated by these patients on rapport, quality of medical regimen explanations, and ability to elicit patient feedback (Shapiro & Saltzer, 1981). Patients who have limited English-speaking skills or who need a translator as compared to
patients who have adequate English speaking skills or who do not need a translator are less likely to (a) report that side effects have been explained, (b) report satisfaction with their medical care, and (c) agree that their physicians understand how they are feeling (David & Rhee, 1998).

Ferenandez, Schillinger, Grumbach et al. (2004) examined patient-physician dyads to examine whether physicians’ self-ratings of their Spanish language ability and cultural competence were associated with diabetic Spanish-speaking patients’ reports of interpersonal processes of care. The study provided empirical evidence for the importance of language and cultural competence in delivery of primary care to Spanish-speaking patients. In another study examining patients’ perceptions of quality of cancer care by race, ethnicity, and language, it was found that Hispanic/Latino/a patients who did not speak English at home reported more problems than other Hispanic/Latino/a patients with coordination of care ($p = 0.04$), confidence in providers ($p = 0.004$), and treatment information ($p = 0.07$) (Ayanian, Zaslavsky, Guadagnoli et al., 2005). The investigators who conducted this study suggested that language barriers may be an important contributor to disparities in care for cancer and other health conditions among predominately Spanish-speaking Hispanic/Latino/a patients. Additionally, Spanish-speaking Hispanics/Latinos/as from this study reported significantly lower levels of satisfaction when compared to both their English-speaking counterparts and African Americans participating in the same study.

Anderson, Scrimshaw, Fullilove, Fielding, Normand, and the Task Force on Community Preventive Services (2003) critically evaluated specific interventions to improve cultural competence that were used in five health care systems. The interventions in two of these studies consisted of utilizing interpreter services and bilingual providers for patients with limited English proficiency and the use of linguistic and culturally appropriate health education materials.
Despite efforts to determine the effectiveness of these interventions, no significant effects were found. The authors concluded that more comparative studies are needed as well as studies that include the influence of linguistically and culturally appropriate health factors related to patients’ self-evaluation of treatment adherence.

Morales et al. (1999) randomly sampled 7,093 English-speaking patients and Spanish-speaking patients receiving medical care in health care sites located on the West Coast and had these patients evaluate the health care that they experienced. Hispanics/Latinos/as responding in Spanish as compared with both Hispanics/Latinos/as and non-Hispanics/Latinos/as responding in English were significantly more dissatisfied with levels of the following health care staff behaviors: (a) listening to them, (b) answering their questions, (c) explaining prescribed medications and test results, and (d) offering reassurance and support.

Johnson, Saha, Arbelaez et al. (2004) found in their study of 6,299 primary care patients (3,488 non-Hispanic Whites; 1,037 African Americans; 1,153 Hispanics/Latinos/as; and 621 Asians) that African Americans, Hispanics/Latinos/as, and Asians were significantly more likely than non-Hispanic Whites to agree that (a) they would receive better care if they belonged to a different race/ethnicity, (b) medical office staff judged them unfairly or treated them with respect based on their English proficiency, and (c) medical office staff judged them unfairly or treated them with disrespect based on their race/ethnicity. Furthermore, in this study, ethnic minority patients were significantly more likely than non-Hispanic White patients to perceive health care system biases and deficiencies in cultural competence. The authors of the study assert that improvement in patient-physician communication may improve patient ratings of the interpersonal bias and cultural competence of their health care providers.
The inability to provide adequate linguistic services to Hispanics/Latinos/as patients who access the health care system as well as the breakdown of communication between Hispanic/Latino/a patients and their health care providers have been shown to not only increase the rate of nonadherence among this group, but also to decrease satisfaction and trust in the quality of care received (Anderson et al., 2003). Based on the studies described above, it can be concluded that health care systems and health care provider behaviors and attitudes that are perceived as ineffective, inappropriate, and culturally insensitive account for some of the health disparities found among Hispanic/Latino/a patients.

In summary of the literature to date, the following overall conclusions can be made: Researchers recognize and are concerned that the adoption of recommended treatment adherence regimens and recommended lifestyle modifications (e.g., healthy lifestyle behaviors) may be harder for certain groups in the general population than others, particularly for Hispanics/Latinos/as who do not primarily speak English, and only a few studies have examined treatment adherence rates among Hispanics/Latinos/as or have investigated the cultural and patient-physician relationship related variables (i.e., trust in physician, patient satisfaction, and patient sense of interpersonal control in the decision-making process) that likely contribute to poor adherence practices among this population. The majority of existing treatment models does not adequately address the cultural factors involved in treatment adherence practices among Hispanics/Latinos/as, such as language, SES, gender roles, and values that are related to the patient’s culture. Thus, articulating the need for more culturally sensitive and comprehensive treatment models for Hispanic/Latino/a patients is important to advance our understanding on how to improve the adherence rates among this population.
Aims of the Study

The findings from the aforementioned studies have provided impetus for the present study that will focus on the unique language and patient-physician interpersonal process factors that influence treatment adherence practices among Hispanics/Latinos/as who have or are at risk for severe chronic health conditions. Given that language and communication difficulties are a major barrier for a majority of Hispanics/Latinos/as living in the U.S., it is not surprising that treatment adherence practices and beliefs can be easily modified with further understanding of the factors associated with adherence. However, the majority of treatment adherence studies have been conducted with primarily non-Hispanic White samples despite the evidence demonstrating low adherence and higher mortality rates among Hispanics/Latinos/as. To date, there has not yet been a comprehensive study that has examined the influence of language, patient-perceived provider culturally sensitivity, trust in physician, satisfaction with physician care, control in the treatment decision-making process, and general treatment adherence simultaneously in a sample of Hispanics/Latinos/as living in the U.S.

The objectives of the present study are to examine the levels of adherence to treatment recommendations among a sample of Hispanics/Latinos/as living across the U.S., compare the levels of treatment adherence and related variables between primarily English-speaking Hispanics/Latinos/as and primarily Spanish-speaking Hispanics/Latinos/as, and identify any patient-physician interpersonal process factors (i.e., trust in physician, satisfaction with physician care, and patient control in the treatment decision-making process) that influence treatment adherence among these two linguistic groups using a modified version of the Patient-Centered Culturally Sensitive Health Care Model depicted in Figure 2-1.

The present study is novel in that it is focused on understanding treatment adherence in a sample of primarily English-speaking Hispanics/Latinos/as and primarily Spanish-speaking
Hispanics/Latinos/as. Moreover, the associations between patient-perceived provider cultural sensitivity and treatment adherence behaviors of Hispanics/Latinos/as patients have not been well documented until now. Lastly, this study is also novel because it includes a focus on primarily Spanish-speaking Hispanics/Latinos/as – a group that has typically been excluded from research studies despite the fact that it is precisely these individuals who are reported to have worse health status on a number of health status indicators when compared to their primarily English-speaking counterparts. Given that Hispanics/Latinos/as are the fastest growing ethnic/racial minority group in the U.S., and given the higher prevalence of many of the major chronic health conditions among Hispanics/Latinos/as when compared to their non-Hispanic counterparts, the focus of the present study is timely and clearly justified.

**Hypothesis and Research Question**

The purpose of this study is to gain a better understanding of the way that patient-perceived provider cultural sensitivity may influence general treatment adherence among a sample of Hispanic/Latino/a patients living across the U.S. using a modified version of the Tucker’s Patient-Centered Culturally Sensitive Health Care (PC-CSHC) Model. It is proposed that patient-perceived provider cultural sensitivity is related to a number of patient-physician interpersonal process factors that mediate their effects on general treatment adherence. The specific patient-physician interpersonal process factors, or linkage variables that were examined are patient trust in physician, patient control in the treatment decision-making process, and satisfaction with physician care. Based on the modified version of the PC-CSHC Model depicted in Figure 2-1, the following hypothesis and research question were derived:

**Hypothesis**

Direct and indirect effects will be expected to emerge in the test of the modified PC-CSHC Model. Specifically, it is hypothesized that (a) the most proximal and direct impact of
patient-perceived provider cultural sensitivity will be on patients’ sense of trust in their physician, satisfaction with their physician, and their sense of control in the treatment decision-making process, (b) patient-perceived provider cultural sensitivity will also have indirect effects (through trust in physician care, satisfaction with physician, and patient control in the treatment decision-making process) on general treatment adherence, and (c) trust in physician, satisfaction with physician care, and patient control in the treatment decision-making process variables will have direct effects on general treatment adherence. Given the present study’s focus on language-specific applications of the model, it was also tested whether the model fit equally well for primarily English-speaking and primarily Spanish-speaking Hispanic/Latino/a patients.

**Research Question**

In addition to testing the modified PC-CSHC Model, the following research question will also be addressed: Do levels of patient-perceived provider cultural sensitivity and treatment adherence self-reported by Hispanic/Latino/a patient participants differ in association with gender and language?
Figure 2-1. Modified Patient-Centered Culturally Sensitive Health Care (PC-CSHC) Model
Participants

The participant data for the present study was from data collected as part of the first phase (Phase I) of a larger national Patient-Centered Culturally Sensitive Health Care and Health Promotion Research Project. Specifically, Phase I of the larger project was designed to: (a) establish the reliability and validity of the pilot versions of the Tucker-Culturally Sensitive Health Care Inventory (T-CSHCI), including a patient feedback version and provider and office staff self-assessment version; and (b) identify provider and office staff behaviors and attitudes as well as health care site characteristics and policies that are most important to different groups of diverse patients. This project was funded by the Robert Wood Johnson Foundation and conducted by a Behavioral Medicine Research Team at the University of Florida of which the principal investigator for the present study was a team member. In Phase I, a national sample of patients (i.e., African Americans, American Indians, non-Hispanic Whites, Asians, and Hispanics/Latinos/as), providers, and office staff at varied health care sites participated in order to fulfill the Phase I project objectives. Recruitment and patient participant inclusion criteria were as follows: (a) being 18 years old or older; (b) having received health care services at a health care site one-year prior to the start of the larger study; (c) being able to communicate in a native language either verbally or in written form; and (3) signing a witness-verified informed consent form that documents an agreement to participate in the larger study.

Currently, a total of 1,716 patient participants have enrolled in the larger study and have returned packets containing signed informed consent forms and completed questionnaires. Of this sample, data was collected from 590 (34%) patient participants who self-identified as Hispanic/Latino/a and who utilized health care services from 48 of the 67 health care sites.
recruited for the larger study. Specifically, the majority of Hispanic/Latino/a patient participants utilized services from health care sites located in the Northeastern (21%) and Western (28%) regions of the U.S. Fifty-four percent of the 590 Hispanic/Latino/a patient participants originated from Mexico, while 3%, 8%, and 26% reported originating from Cuba, Puerto Rico, or other Latin American countries, respectively. Of the 590 Hispanic/Latino/a patient participants, 25% were between the ages of 25 and 34, 65% were female, and 57% had equal to or less than a high school education.

For the purposes of the present study, Hispanics/Latinos/as were further classified into language subgroups (English or Spanish). Those who chose to complete an English assessment battery were considered primarily English-speaking Hispanics/Latinos/as, while those who chose to complete a Spanish assessment battery were classified as primarily Spanish-speaking Hispanics/Latinos/as. Two hundred and nine (35%) Hispanic/Latino/a patients chose to complete their assessment battery in English, and 381 (65%) chose to complete their assessment battery in Spanish.

**Measures**

In the larger study, patient participants were asked to anonymously complete an assessment battery (AB) packet consisting of 12 brief study questionnaires. Only six of these 12 questionnaires will be used to examine the variables of interest in the present study. These six questionnaires are as follow: (a) a Patient Demographic and Health Data Questionnaire, (b) the Trust subscale of the Health Care Justice Inventory, (c) the Patient Satisfaction Questionnaire Short Form, (d) the Patient-Practitioner Orientation Scale, (e) the General Adherence Measure, and (f) the Tucker-Culturally Sensitive Health Care Inventory - Patient Form. All patient measures were translated into Spanish, independently back translated by experienced translators, and then verified by certified translators to confirm translation reliability. Additionally, the
reading levels of some of the directions within the patient measures and items were slightly altered to make the inventories more easily understood by individuals with limited educational backgrounds.

**The Patient Demographic and Health Data Questionnaire**

The Patient Demographic and Health Data Questionnaire (Patient DHDQ; see Appendix A) was developed by the PI and her research team and will be used to obtain information about each patient’s age, race/ethnicity, gender, educational background, relationship status, household income, immigration status, number of children, height, weight, and employment status. The questionnaire also includes questions regarding each patient’s spirituality, religiosity, and prayer/meditation frequency.

**The Tucker-Culturally Sensitive Health Care Inventory – Patient Form**

The 129-item Tucker-Culturally Sensitive Health Care Inventory – Patient Form (T-CSHCI-PF; see Appendix B) measures the level of self-reported patient-centered cultural sensitivity in one’s health care center environment (including physical and policy aspects of the environment), as well as the behaviors and attitudes of one’s health care provider and office staff at the health care clinic they most often visit (Tucker et al., 2007). The T-CSHCI-PF consists of three subscales: Provider Behaviors and Attitudes (72 items), Office Staff Behaviors and Attitudes (32 items), and Health Care Office Environment and Policies (25 items). Recent use of the T-CSHCI-PF revealed it to have a high internal consistency for African American and non-Hispanic White American patient forms (Cronbach’s alphas ranging from 0.71 to 0.96), and six month test-retest and split-half reliabilities being 0.92 and 0.99, respectfully (Tucker et al., 2007). Original race/ethnicity specific forms for African American patients, non-Hispanic White patients, and Hispanic patients (with English and Spanish forms) have been recently combined to create a newly revised version of the T-CSHI-PF which combines all three of these separate
race/ethnicity-specific forms and excludes items that would have been redundant in the combining process. With respect to T-CSHCl-PF items in the present study, only the scores for the Provider Behaviors and Attitudes subscale were used to measure level of patient-perceived provider cultural sensitivity. Cronbach’s alphas were 0.97 for the total Hispanic/Latino/a patient sample, 0.97 for the primarily English-speaking patient participants, and 0.97 for the primarily Spanish-speaking patient participants.

All items on the T-CSHCl-PF are rated on a 4-point Likert scale where 4 = “Strongly Agree” to 1 = “Strongly Disagree.” Scores for this questionnaire are averaged to yield a mean score for each subscale. Higher scores indicate greater self-reported levels of patient-perceived cultural sensitivity, whereas lower scores indicate lower self-reported levels of patient-perceived cultural sensitivity. Sample items from each T-CSHCl-PF subscale are “The health care provider I see most often when I visit my health care center or office understands my culture;” “The front office staff members at my health care center or office do not view patients of my race/ethnicity as uneducated and unable to read;” and “My health care clinic has official interpreters for patients who do not speak English.”

The Health Care Justice Inventory

The Health Care Justice Inventory (HCJI; see Appendix C; Fondacaro, Frogner, & Moos, 2005) is a 10-item scale that measures procedural and distributive justice in the health care context. Specifically, the HCJI consists of two subscales (Trust and Impartiality); however, for the purposes of this study, only the Trust subscale, which consists of five items, will be used to measure the overall trust that the patient respondent has in his/her health care provider. Overall, the scale has high internal consistency (Cronbach’s alpha = 0.93) for the Trust subscale (Fondacaro et al., 2005). With respect to HCJI items in the present study, Cronbach’s alphas were 0.91 for the total Hispanic/Latino/a patient sample, 0.89 for primarily English-speaking
patient participants and 0.92 for primarily Spanish-speaking patient participants. All items on the scale are rated on a 4-point Likert scale where 0 = “Strongly Disagree” to 3 = “Strongly Agree.” Subscale scores are obtained by summing up the item scores within each subscale. For the Trust subscale, higher scores indicate more trust perceived in their health care provider by the patient participant. Sample items from the HCJI Trust subscale are “You accept your health care provider’s decisions” and “Your health care provider was honest with you.”

**The Patient Satisfaction Questionnaire - Short Form**

The Patient Satisfaction Questionnaire Short Form (PSQ-18; see Appendix D; Marshall & Hays, 1994) is an 18-item short-form version of the 50-item Patient Satisfaction Questionnaire III (PSQ-III). The scale will be used to measure patients’ attitudes toward characteristics of doctor and medical care services, and general satisfaction with health care received. The PSQ-18 consists of seven dimensions: General Satisfaction, Technical Quality, Interpersonal Manner, Communication, Financial Aspects, Time Spent with Doctor, and Accessibility and Convenience. For the purposes of the present study, only the General Satisfaction and Communication dimensions of the PSQ-18 will be used for the study’s analyses.

The PSQ-18 has been reported to have a high internal consistency that exceeded .90 among population samples with various ethnic and racial groups (Marshall & Hays, 1994). With respect to PSQ-18 items in the present study, Cronbach’s alphas were 0.74 for the total Hispanic/Latino/a patient sample, 0.84 for primarily English-speaking patient participants and 0.62 for primarily Spanish-speaking patient participants. All items on the scale are rated on a 5-point Likert scale where 1 = “Strongly Agree” to 5 = “Strongly Disagree.” Higher scores indicate greater patient satisfaction within each health care dimension. Sample items from the PSQ-18 are “I am dissatisfied with some things about the medical care I receive” and “My doctors treat me in a very friendly and courteous manner.”
The Patient-Practitioner Orientation Scale

The 18-item Patient-Practitioner Orientation Scale (PPOS; see Appendix E; Krupat et al., 2000) will be used to measure patients’ orientations and beliefs toward control in the health care patient-physician relationship. Orientations, in this situation, are relatively stable sets of personal beliefs and preferences about the patient-physician relationship. The PPOS consists of two subscales (Sharing and Caring) with nine items each. All items on the scale are rated on a 6-point Likert scale where 1= “Strongly Disagree” to 6= “Strongly Agree.” The Sharing subscale measures the degree to which the respondent believes that patients should take an active and participatory role in the health care decision-making process. The Caring subscale measures the degree to which the respondent sees the patient’s expectations, feelings, and life circumstances as crucial elements in the treatment process. Higher total scores and scores on the Sharing and Caring subscales reflect more patient-centered beliefs (sharing control, focus on the whole person), and lower scores reflect more physician-centered beliefs (high doctor control, focus on biomedical issues).

Previous research has shown that the PPOS has satisfactory reliability (Chronbach’s coefficient alpha = 0.75 to 0.88) among a sample of patient participants (Krupat et al., 2000), and has demonstrated adequate validity of the PPOS (Tsimtsiou et al., 2007; Street, Krupat, Bell, Kravitz, & Haldet, 2003). With respect to PPOS items in the present study, Cronbach’s alphas were 0.79 for the total Hispanic/Latino/a patient sample, 0.76 for primarily English-speaking patient participants and 0.76 for primarily Spanish-speaking patient participants. Sample items from the PPOS Sharing and Caring subscales, respectively, are “It is often best for patients if they do not have a full explanation of their medical condition” and “The patient must always be aware that the doctor is in charge.”
The General Adherence Measure

The 5-item General Adherence Measure is a self-report measure of adherence and was constructed in the Medical Outcomes Study to summarize information about a patient’s general or typical tendency to adhere to medical recommendation, regardless of the type of treatment recommended (GAM; see Appendix F; DiMatteo, Hays, & Sherbourne, 1992). All items on the scale are rated on a 4-point Likert scale where 1 = “None of the Time” to 4 = “All of the Time.” The internal consistency reliability of the scale was found to be acceptable (Cronbach’s coefficient alpha = 0.81), while the two-year stability was $r = 0.41$ (DiMatteo et al., 1992). With respect to GAM items in the present study, Cronbach’s alphas were 0.60 for the total Hispanic/Latino/a patient sample, 0.69 for primarily English-speaking patient participants and 0.53 for primarily Spanish-speaking patient participants. Total scores for the GAM are calculated by taking the average of responses to the five items and transforming the result linearly into a 0-100 distribution. Higher scores indicate more treatment adherence from the respondent. Sample items from the GAM are “I had a hard time doing what my provider suggested I do” and “I found it easy to do the things my provider suggested I do.”

Procedure

A subset of the data obtained from primarily English-speaking and primarily Spanish-speaking Hispanic/Latino/a patients who completed the measures of interest during Phase I of the larger study (i.e., Patient-Centered Culturally Sensitive Health Care and Health Promotion Research Project) will be used for the purposes of the present study. The research procedures for the larger study, and thus the present study, involved the following steps:

Recruitment of National Health Care Sites (Step One)

This step consisted of implementing the following methods to successfully recruit health care sites across the U.S.: (a) a National Health Care Site List method, and (b) a Co-Investigators
and Collaborators method. In the National Health Care Site List method, a database was compiled from web-based searches for various types of health care sites located throughout the Northeast, Southeast, West, and Midwest of the U.S. In addition, the web-based searches targeted hospitals, community health care centers, and private health care clinics that served specific segments of the U.S. population (i.e., racial/ethnic minority and low-income patients).

Health care site administrators who served as potential contacts were identified through the web-based searches and emailed an invitation letter that was designed to: (a) describe the purpose and objectives of the study, (b) request the participation of the health care site staff and patients, (c) explain what participation of their health care site staff and patients would entail, (d) explain the potential benefits of study participation, and (e) request an email reply indicating if the health care site administrators were willing to have their health care site participate in the study. Health care site administrators who expressed their interest were contacted by the study’s Research Recruitment Coordinator (RRC), a research member from the Patient-Centered Culturally Sensitive Health Care and Health Promotion Research Project. Upon initial contact, a phone meeting was scheduled by the RRC to: (a) provide further explanation about the details of the study, (b) explain the health care site administrator’s prospective involvement in the study, and (c) address any questions and/or concerns of the health care administrator regarding details about the study.

In the Co-Investigators and Collaborators method, the study’s co-investigators, who were also national representatives from various health care organizations (i.e., American Medical Association and National Medical Association/Montague Cobb Institute), identified representatives from various organizations that provide health care services to specific populations (i.e., Association of Asian Pacific Community Health Organization, Commission on
Minority Health, Office for the Elimination of Health Disparities, and the National Committee for Quality Assurance) to serve as collaborators. Once collaborators were identified they were then invited to identify potential participating health care sites across the U.S. These collaborators were also asked to post the study’s purpose and objectives on their organization’s newsletters, and email lists, as well as distribute the study-related recruitment material to other health-affiliated organizations, programs, and colleagues. Health care site administrators identified through this method were emailed and/or faxed information explaining the purposes and objectives of the study. If a health care site administrator agreed to have his/her health care site participate in the larger study, a phone meeting was, again, scheduled to explain the study and address questions or concerns regarding details about the study.

The final aspect of the two methods of recruiting national health care sites entailed obtaining formal approval by the health care site’s board of directors, Institutional Review Board (IRB), or clinic/center director. This aspect mostly required the health care site administrator to present the purpose and objectives of the study along with a copy of the UF IRB approval of the study document to the health care site’s board of directors and/or IRB. After formal approval was obtained, the health care site administrator signed a nonbinding participation agreement contract (see Appendix G) provided by the study’s RRC.

**Recruitment of Staff and Community Members to Serve as Data Collection Coordinators and Data Collectors at Each Health Care Site (Step Two)**

This step required the health care site administrator to identify one Data Collection Coordinator (DCC) from his or her staff to assist with data collection, correspond with the Research Recruitment Coordinator (RRC), and provide the RRC with the approximate number of patients served at the participating health care site. The identified DCC, in turn, was also responsible for identifying at least two Data Collectors (DCs) to recruit and collect data from
potential patient participants. Once the DCs were identified by the DCC, a box of recruitment and study-related materials were sent to the participating health care site. The recruited health care site DCC and the DCs received training via phone from the RRC; in this training the RRC explained the roles and responsibilities of the DCC and the DCs for the duration of a four-week recruitment and data collection period and reviewed the contents of the box of recruitment- and study-related material.

The following recruitment- and study-related material was included in each box sent by the RRC: (a) one Health Care Site Demographic and Health Data Questionnaire (see Appendix H) used to obtain information regarding the demographic make-up of the participating health care site’s patients and health care staff; (b) recruitment flyers specifying the study’s purposes and objectives, as well as the inclusion criteria for study participation and instructions on how to participate in the study; (c) Patient Recruitment Logs to record the number of patient participants recruited; (d) two copies of the ICFs (see Appendix I), a Payment Release Form, a set of questionnaires in English or Spanish, two envelopes for separately returning the signed ICFs and the completed questionnaires, and a cover letter (see Appendix J) explaining the study in detail with instructions on how questionnaires should be completed (i.e., instructions to participants to not place their names on their questionnaires, as well as a statement giving permission to ask for reading and/or writing assistance from a family member or the DC); and (e) two empty and folded boxes with pre-paid Fed Ex mailing labels used to send the RRC completed patient recruitment logs, as well as researcher signed ICFs and completed questionnaires following the second and fourth week of the four-week recruitment and data collection period.

The DCC at each participating health care site was responsible for the following tasks: (a) identifying one or two DCs (i.e., patients, students and/or community members affiliated with
the participating health care site); (b) completing a Health Care Center and Staff Demographic Data Questionnaire; (c) receiving a box containing recruitment and study-related materials from the RRC to disseminate to the health care site DCs; (d) corresponding on a weekly basis with the RRC to discuss progress updates on data collection, effective recruitment strategies, and questions or concerns related to the study; (e) collecting envelopes containing patient participants’ signed forms and completed questionnaires from the DCs; and (f) mailing study-related materials to the RRC in the provided boxes. Each DCC received a one-time compensatory payment of $50.00 at the end of the four-week recruitment and data collection period.

The DCs at each participating health care site were responsible for the following tasks: (a) recruiting patients to participate in the study by posting and distributing recruitment flyers in the waiting room of the participating health care site; (b) explaining the study’s purposes and objectives to potential patient participants; (c) recording the number of patient participants recruited on the Patient Recruitment Log; and (d) submitting the log and data collection box containing envelopes with signed forms and completed questionnaires to the DCC. Each DC was paid $8.00 per hour for four hours per week for the duration of the four-week recruitment and data collection period.

**Recruitment of Patient Participants at Each National Health Care Site (Step Three)**

This step involved the DCs identifying potential patient participants at their respective health care sites who meet the criteria for research participation. Specifically, the DCs were instructed to distribute recruitment flyers to potential patient participants in the waiting rooms of participating health care sites. Patients who met the criteria for research participation were provided the following information in written and verbal form by the DC: (a) a description of the research study, (b) an explanation of the nature of the patient’s involvement in the study and of
how their confidentiality would be protected, and (c) an explanation of compensation for their participation in the study. All recruited participants were told that their participation in the research would involve: (a) reading and signing the ICF in front of a witness and keeping a copy for their records; (b) completing a set of questionnaires, which took approximately 45-minutes to complete; (c) signing a Payment Release Form; and (d) returning their signed forms and completed questionnaires in separate envelopes to the DC, in which the collected envelopes would be placed in a data collection box located in the waiting rooms of the participating health care sites.

To ensure patient confidentiality, patient questionnaires were pre-coded and kept separate from corresponding signed ICFs at all times. Once received, all participant data was processed in accordance with the ethical standards of the Institutional Review Board (IRB) at the University of Florida and kept in a locked file. All participants were assured that their data would be handled in a secure and confidential manner. Those participants who returned a signed copy of the informed consent form and completed the above described questionnaires were each mailed $15 within three weeks of the RRC receiving these documents. The order of the forms and questionnaires in the assessment battery packet was counterbalanced with the exception that the Demographic and Health Data Questionnaire and Payment Release Form always appeared last.

Statistical Analyses

Preliminary Analyses and Descriptive Statistics for the Major Investigated Variables

The present study is a cross-sectional study designed to test a modified version of the Tucker’s Patient-Centered Culturally Sensitive Health Care model. Prior to the present study’s main analyses, an exploratory data analysis was conducted to inspect the data for univariate normality, multivariate normality, outliers, multicollinearity, relative variances, and missing data. The results of this exploratory data analysis were used to determine whether the data met
the criteria necessary for the planned statistical procedures (Kline, 2005). Violations to the assumption of multivariate normality and relative variances were identified prior to conducting the planned study analyses. Non-parametric tests were conducted and cases were deleted appropriately if data were non-normal. Whole sample and language-specific means and standard deviations were calculated for the study variables, and independent samples t tests were conducted to determine whether there were any significant differences between the primarily English-speaking and primarily Spanish-speaking Hispanic/Latino/a patient participants with regard to the investigated patient demographic and health-related characteristics.

**Analysis to Test the Hypothesis**

Structural Equation Modeling was conducted to test the modified model depicted in Figure 2-1. Specifically, analyses were conducted to examine if patient-perceived provider cultural sensitivity and patient trust in physician, patient control in the treatment decision-making process, and satisfaction with physician care will have direct and indirect effects on treatment adherence among primarily English-speaking and primarily Spanish-speaking Hispanic/Latino/a patients using the AMOS 17.0 program (SmallWaters Corp., Chicago, IL). Model fit was evaluated using multiple indicators of fit: the chi-square ($\chi$) index, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), the normed-fit index (NFI), and the Tucker Lewis Index (TLI). The CFI provides an assessment of comparative fit independent of sample size. Values of the CFI will always lie between 0 and 1, with values over 0.9 indicating a good fit (Hu & Bentler, 1999). The RMSEA assesses closeness of fit, with values approximating 0.08, 0.05, and 0.00 indicating reasonable, close, and exact fits, respectively (Browne & Cudek, 1993). The NFI is an alternative to the chi-square index. Values of the NFI may range from 0 to 1, with values over 0.9 indicative of an acceptable fit. Hu and Bentler (1999) suggested that TLI values above 0.95 represent an acceptable fit.
The modified model was further examined to determine if it was comparable for primarily English-speaking and primarily Spanish-speaking Hispanic/Latino/a patients. This was achieved by testing the model with simultaneous multigroup path analyses (Tabachnick and Fidell, 1997) using data from both language groups. These types of analyses provide more powerful tools for testing the impact of language differences by imposing factor invariance across the two language groups simultaneously (Dunn, Everitt, & Pickles, 1993 in Sun-Mee Kang, Shaver et al, 2003). The invariance of the measurement models across language groups was tested using full-information maximum likelihood (FIML) estimation under the assumption that data will be missing at random (Arbuckle, 1996; Little, 1995). FIML has been selected in previous studies as an optimal method for handling missing data (Muthen & Shedden, 1999; Schafer & Graham, 2002).

A fully recursive model across the two language groups of patients was estimated using the proposed model (Figure 2-1) by constraining all path coefficients (parameters) to be equal across both groups. Secondly, the path coefficients were freely estimated across groups. If the \( \chi^2 \) of the constrained model was significantly larger than the \( \chi^2 \) of the unconstrained model, the assumption of invariance would not be tenable. Specifically, chi-square difference tests were used to compare these two models and to evaluate if, in general, the paths predicted in the theoretical model would differ across the language groups. The chi-square index provides a test of the null hypothesis, which assumes that the reproduced covariance matrix has the specified model structure (i.e., that the model “fits the data”).

If the null hypothesis is “correct,” then the obtained chi-square value should be small, and the \( p \) value associated with the chi-square value should be relatively large \( (p < 0.05) \). If the omnibus chi-square is not statistically significant, then it can be concluded that the same model
can be applied to both groups. To detect which paths were different for the two language groups, each group’s path coefficients (parameters) were compared and assessed for statistical significance at the a priori $\alpha$ of 0.05. Once path coefficients that reached statistical significance were identified, the non-significant paths were eliminated by setting the parameters equal to zero to test whether a more parsimonious model would fit the data equally well. Again, the chi-square difference test was used to evaluate the relative improvement or deterioration of the new model, and the two models using primarily English-speaking and primarily Spanish-speaking Hispanic/Latino/a data were compared. Lastly, a new and parsimonious model will be tested for each language group separately.

**Analysis to Answer the Research Question**

The following research question will also be addressed: Do levels of patient-perceived provider cultural sensitivity and general treatment adherence self-reported by Hispanic/Latino/a patient participants differ in association with gender and language? To address the proposed research question, a multivariate analysis of variance (MANOVA) was conducted in which gender and language were independent variables, and levels of patient-perceived provider cultural sensitivity and general treatment adherence were dependent variables. A preliminary Pearson correlation was performed to determine any relationships among the dependent variables. These resulting correlations were used to determine the degree of multicollinearity among the dependent variables.
CHAPTER 4
RESULTS

This chapter presents the results of the analyses conducted to address the hypothesis and research question set forth in this study. The results are divided into five major parts. First, the descriptive data for all of the variables in the study are reported for the entire sample and then separately for each language group. Second, results of the independent sample \( t \) tests conducted to assess for any significant differences in the investigated demographic and health-related patient characteristics between each language group. Third, the results of a preliminary Pearson correlational analysis, and the means and standard deviations for the participant sample are presented. Fourth, the results of the structural equation modeling and simultaneous multigroup path analyses that were performed to address the study’s hypothesis is presented. Finally, the results of the multivariate analyses of variance (MANOVA) to address the research question are presented.

**Results of the Descriptive Statistics**

Prior to the study’s major analyses, patient-perceived provider cultural sensitivity, trust in physician, patient control in the decision-making process, satisfaction in physician care, and general treatment adherence were examined through various SPSS programs for accuracy of data entry, missing values, and fit between their distributions and the assumptions of a multivariate analysis. The variables were examined separately for the 381 Hispanics/Latinos/as who primarily spoke Spanish (SSH) and the 209 Hispanics/Latinos/as who primarily spoke English (ESH). Only two cases were identified through Mahalanobis distance as multivariate outliers with \( p < .001 \) (one from the SSH group and one from the ESH group). Thirty-one cases were identified as univariate outliers with a \( z \)-score standard deviation greater than 2.95. With all 33 outliers
deleted, 194 cases remained in the ESH group and 361 remained in the SSH group. Thus, data from 555 Hispanic/Latino/a patient participants were utilized in the present study’s analyses.

Results from the independent sample $t$ tests revealed several statistically significant differences in demographic and health-related characteristics between the ESH ($n = 194$) and the SSH ($n = 361$) patient participants (see Table 4-1 through Table 4-4). Specifically, the ESH patient participants were younger, had higher levels of educational attainment, had higher annual household incomes, and proportionately less were married couples than the SSH patient participants. In regards to the health-related characteristics, both most of the ESH and SSH patient participants utilized health care centers/clinics (71% and 73%, respectively) as their primary health care site. Fifty-nine percent (59%) of ESH patient participants and 55% of SSH patient participants reported visiting their primary health care site one to five times per year. Overall, 36% of Hispanic/Latino/a patient participants were primarily seen by non-Hispanic White health care providers and 25% were primarily seen by Hispanic/Latino/a health care providers (See Table 4-4). Notably, 30% of SSH patient participants were seen by Hispanic/Latino/a health care providers, and 29% were seen by non-Hispanic white providers. Only 15% of ESH patient participants were seen by Hispanic/Latino/a providers whereas 49% of the ESH patient participants were seen by non-Hispanic White health care providers.

Based on patient participants’ self-reported height (in inches) and weight (in pounds), BMI was calculated and classified for all Hispanic/Latino/a patient participants using the calculations and specific classifications of the World Health Organization (2009). A large percentage of the overall sample of Hispanic/Latino/a patient participants was classified as overweight (25%), while 21% were classified as normal range and 19% were classified as obese. Table 4-4 shows that 18% of the SSH patient participants were classified as normal range, 24%
were classified as overweight, and 13% were classified as obese. The ESH patient participants’ BMI classifications were significantly different from their SSH counterparts. Specifically, thirty percent of the ESH patient participants were classified as obese, and 26% were classified as normal range, and 27% were classified as overweight. Hispanic/Latino/a patient participants, overall, rated their health as poor (5%), fair (28%), good (28%), very good (19%), and excellent (12%).

Pearson correlations were conducted to examine the associations among the major variables of interest in this study among the total sample of Hispanic/Latino/a patient participants and separately for each language group. Pearson correlations among all of the variables are presented for the total sample of Hispanic/Latino/a patients in Table 4-5. Treatment adherence was significantly correlated to all other major variables of interest among the total sample of Hispanic/Latino/a patient participants. Specifically, results showed significant positive moderate correlations between Hispanic/Latino/a patient participants’ levels of general treatment adherence and their levels of (a) patient-perceived provider cultural sensitivity ($r = .17, p < .01$), (b) trust in physician ($r = .32, p < .01$), (c) patient control in the decision-making process ($r = .10, p < .05$), and (d) satisfaction in physician care ($r = .28, p < .01$). When separated by language groups, general treatment adherence is correlated with all major variables of interest with the exception of the patient control of the treatment decision-making process variable (ESH $r = .085$ and SSH $r = .094$). Internal consistency for each major variable under investigation in this study is presented for the total sample of Hispanic/Latino/a patient participants (Table 4-5), and separately for each language group (Table 4-6). Inter-item reliabilities were generally acceptable for research purposes (Cronbach’s alphas > 0.7).
Means and standard deviations for the major variables for each language group in the present study are presented in Table 4-5 and Table 4-6. It is important to note that the satisfaction in physician care measure (i.e., the PSQ-18) has a normative score based on a diverse group of study participants, including non-Hispanic White, African American, Hispanic/Latino/a, and Asian/Pacific Islander individuals; furthermore, normative data is not available for each racial and ethnic group (Marshall & Hays, 1994). Tucker, Mirsu-Paun, van den Berg, Ferdinand, Jones, Curry et al. (2007) reported means and standard deviations for the Tucker-Culturally Sensitive Health Care Inventory – Patient Form (T-CSHCI-PF) that ranged from 3.11 (SD = 0.52) to 3.26 (SD = 0.54) for a community sample of African American patients, and means and standard deviations ranging from 2.94 (SD = 0.37) to 3.39 (SD = 0.50) for a community sample of non-Hispanic white American patients. No normative data for the measures of general treatment adherence, trust in physician and patient control in the treatment decision-making process could be found. In the present study the ESH patient participants had lower mean ratings on patient-perceived provider cultural sensitivity (M = 3.27, SD = 0.49) than did the SSH patient participants (M = 3.32, SD = 0.46). Additionally, the ESH patient participants had slightly higher mean ratings of treatment adherence (M = 3.16, SD = 0.59) than did the SSH patient participants (M = 3.09, SD = 0.57).

Testing the Model

Multigroup structural equation model analysis was conducted using the AMOS 17.0 program (SmallWaters Corp., Chicago, IL) to test the present study’s hypothesis, which is as follows: Direct and indirect effects were expected to emerge in the test of this model. Specifically, it was hypothesized that (a) the most proximal and direct impact of patient-perceived provider cultural sensitivity will be on patients’ sense of trust in their physician, satisfaction with their physician, and their sense of control in the treatment decision-making
process, (b) patient-perceived provider cultural sensitivity will also have indirect effects (through trust in physician care, satisfaction with physician, and patient control in the treatment decision-making process) on general treatment adherence, and (c) trust in physician, satisfaction with physician care, and patient control in the treatment decision-making process variables will have direct effects on general treatment adherence. Given the present study’s focus on language-specific applications of the model, it was also tested whether the model fit equally well for primarily English-speaking Hispanic patients and primarily Spanish-speaking Hispanic patients.

First, using the modified Patient-Centered Culturally Sensitive Health Care Model, a fully recursive model was estimated across the full sample of Hispanic/Latino/a patient participants by constraining all path coefficients (parameters) to be equal across the two language groups. The constrained model yielded an acceptable level of fit for the two groups, $\chi^2(10, N = 194) = 25.978$, CFI = 0.96, RMSEA = 0.05, NFI = 0.94, and TLI = 0.89, suggesting that patient-perceived provider cultural sensitivity and patient-physician relationship interpersonal process factors (i.e., trust in physician, patient control in the treatment decision-making process, satisfaction with physician care) are linked to general treatment adherence among the Hispanic/Latino/a patient participants. Figure 4-1 depicts the model tested in the full sample. The $R^2$ values summarize the variation explained, and this variance was higher for trust in physician (30%) and satisfaction in physician care (18%) than for patient control in the treatment decision-making process (1%). The overall model explained 14% of the variance in general treatment adherence using the full sample data. The standardized path coefficients ($\beta$) or parameters for the constrained model were significant (CR > 1.96), and show the magnitudes of the relationship between the different constructs. Figure 4-1 also shows that the model only included indirect effects on general treatment adherence.
To test if there would be language group differences in the linkages between patient-perceived provider cultural sensitivity and general treatment adherence—the parameters were freely estimated across language groups (i.e., the group of primarily Spanish-speaking Hispanics/Latinos/as [SSH] and the group of primarily English-speaking Hispanics/Latinos/as [ESH]). The chi-square difference test of differences between the two models supported the second hypothesis in that the parameters of the two language groups were significantly different from each other. Based on the fit indices, the freely estimated model provided a better fit of the data than the constrained model (see Table 4-7). To detect which paths were different for the two language groups, each group’s parameters were compared and assessed for statistical significance at the a priori alpha level of 0.05.

The significance tests of the parameters showed that five parameters for the ESH group and three parameters for the SSH group did not reach statistical significance with \( P \) values greater than 0.05 and a critical ratio greater than 1.96. To test whether a more parsimonious model would fit the data equally well, the non-significant parameters were eliminated by setting the parameters equal to zero, and the new reduced model was subjected to the same method of model fit. Without the non-significant parameters, the model fit indices of the reduced model for each language group improved and provided evidence of a better fit as indicated by the chi-square tests \( \chi^2(9, N = 194) = 8.58, p = 0.48, \text{CFI} = 1.00, \text{RMSEA} = 0.00, \text{NFI} = 0.98, \text{and TLI} = 1.003 \). Chi-square tests also showed significant differences between the language group models (see Table 4-7). Comparison of the models representing each language group revealed different significant parameters in each parsimonious new model. The standardized parameters for the reduced model involving ESHs and the reduced model involving the SSHs are presented in Figure 4-2 and Figure 4-3, respectively.
Language-Specific Direct and Indirect Effects on Trust, Satisfaction and Control

Looking first at the *direct* effects, provider cultural sensitivity had significant positive effects on trust in physician and satisfaction with physician care in both language groups, but the effect between patient-perceived provider cultural sensitivity and trust in physician was similar in size and strength for both language groups. More specifically, patient-perceived provider cultural sensitivity led to increased trust in physician for both ESH and SSH patients ($\beta = 0.55$ and $\beta = 0.56$, respectively, $p < 0.0001$). The effect on satisfaction in physician care was significantly larger ($p < .05$) for ESH patients than for their SSH counterparts ($\beta = 0.36$ and $\beta = 0.21$, respectively, $p < 0.0001$). As hypothesized, the patient-perceived provider cultural sensitivity had an indirect effect on satisfaction in physician care through its relationship with trust in physician among both ESH and SSH language groups ($\beta = 0.32$ and $\beta = 0.24$, respectively, $p < 0.0001$). Provider cultural sensitivity also had a significant negative direct effect on patient control in the treatment decision-making process; however, this effect was significant only for SSH patients and was significantly larger ($p < .05$) than in the ESH patients. In other words, SSH patient participants with higher levels of patient-perceived provider cultural sensitivity tended to have more lower or “doctor-centered” rather than “patient-centered” views on patient control in the treatment decision-making process.

Language-Specific Direct and Indirect Effects on General Treatment Adherence

For both the ESH and SSH language groups, patient-perceived provider cultural sensitivity did not have a direct effect on the general treatment adherence. As hypothesized, trust in physician mediated the relationship between patient-perceived provider cultural sensitivity and general treatment adherence for both the ESH and SSH language groups. Patient-perceived provider cultural sensitivity had an indirect effect on general treatment adherence through its relationship with the satisfaction in physician care for the SSH language group only (see Figure
Finally, no direct effects (or group differences in direct effect) were observed when patient control in the treatment decision-making process was examined as a predictor.

**Analysis to Test the Research Question**

The second goal of the present study was to examine the following research question: “Do levels of patient-perceived provider cultural sensitivity in health care experienced and general treatment adherence self-reported by Hispanic/Latino/a patient participants differ in association with gender and language?” A 2x2 between group multivariate analysis of variance (MANOVA) was conducted to examine this research question. The two dependent variables in this MANOVA were patient-perceived provider cultural sensitivity and general treatment adherence. The two between-subject factors were language (Spanish, n = 316 and English, n = 191) and gender (male, n = 151 and female, n = 356). The data of the total sample Hispanic/Latino/a patient participants were utilized in the MANOVA to examine the research question. Language was fully crossed with gender, and the design was completely balanced. The Box-M test for the homogeneity of variance-covariance matrices across design cells was not significant ($F[9, 472633.079] = 3.334, \ p = 0.951$), and the Levene’s test found that the assumption of homogeneity of variance was supported for both variables. Thus, Wilk’s Lambda was used for the estimation of F-statistics in the MANOVA.

The overall MANOVA found significant main effects for language ($F[2, 502] = 2.959, \ p < 0.05, \ \eta^2 = 0.012$), but not for gender ($F[2, 502] = 1.272, \ p = 0.281, \ \eta^2 = 0.005$). Additionally, these findings are not qualified by a significant gender by language interaction effect ($F[2, 502] = 1.496, \ p = 0.225, \ \eta^2 = 0.006$). The partial eta squared coefficient of the main effect suggests a small to moderate effect of the predictors. Follow-up univariate ANOVAs were conducted separately for each DV to examine the location of the significant main effect. The significant main effect of language ($F[1, 506] = 3.222, \ p < 0.07, \ \eta^2 = 0.006$) was found for the general
treatment adherence variable only. As shown in Figure 4-4, both SSH male patients ($M = 2.98, SD = 0.06$) and female patients ($M = 3.14, SD = 0.04$) had overall lower levels of general treatment adherence than did the ESH male patients ($M = 3.17, SD = 0.07$) and female patients ($M = 3.16, SD = 0.05$), respectively. It appears that Hispanics/Latinos/as patients who primarily speak English are more likely than Hispanic/Latino/a patients who primarily speak Spanish to adhere to their provider’s general treatment recommendations.
Table 4-1. Comparison of Demographic Characteristics of ESH and SSH Patient Participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>English</th>
<th>Spanish</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Country of Origin</td>
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</tr>
<tr>
<td>Cuba</td>
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</tr>
<tr>
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<tr>
<td>Puerto Rico</td>
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</tr>
<tr>
<td>Other Latin American Countries</td>
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</tr>
<tr>
<td>Total</td>
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</tr>
<tr>
<td>Missing</td>
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</tr>
<tr>
<td>Midwest</td>
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</tr>
<tr>
<td>Southeast</td>
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<td>19.07</td>
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<tr>
<td>West</td>
<td>76</td>
<td>39.18</td>
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<tr>
<td>Age 18-24</td>
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<td>Age 65 or older</td>
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<tr>
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<td>1.03</td>
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</table>

Note: *Significant nonparametric independent t-tests of association, $P<0.01$; **Significant nonparametric independent t tests of association, $P<0.001$; ESH = Primarily English-Speaking Hispanic/Latino/a; SSH = Primarily Spanish-Speaking Hispanic/Latino/a.
Table 4-1. Comparison of Demographic Characteristics of ESH and SSH Patient Participants

<table>
<thead>
<tr>
<th>Characteristic</th>
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<th>Spanish</th>
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<th>Total</th>
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<td>%</td>
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<td>%</td>
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<td>%</td>
</tr>
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<tr>
<td>Female</td>
<td>132</td>
<td>68.04</td>
<td>229</td>
<td>63.43</td>
<td>361</td>
<td>65.05</td>
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<td>192</td>
<td>98.97</td>
<td>326</td>
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<td>518</td>
<td>93.33</td>
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<td>2</td>
<td>1.03</td>
<td>35</td>
<td>9.70</td>
<td>37</td>
<td>6.67</td>
</tr>
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<td><strong>Household Income</strong></td>
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</tr>
<tr>
<td>≤$20,000</td>
<td>107</td>
<td>55.15</td>
<td>192</td>
<td>53.19</td>
<td>299</td>
<td>53.87</td>
</tr>
<tr>
<td>&gt;$20,000</td>
<td>70</td>
<td>36.08</td>
<td>60</td>
<td>16.62</td>
<td>130</td>
<td>23.42</td>
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<tr>
<td>Total</td>
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<td>91.24</td>
<td>252</td>
<td>69.81</td>
<td>429</td>
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<td>Missing</td>
<td>17</td>
<td>8.76</td>
<td>109</td>
<td>30.19</td>
<td>126</td>
<td>22.70</td>
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<td>Single</td>
<td>114</td>
<td>58.76</td>
<td>129</td>
<td>35.73</td>
<td>243</td>
<td>43.78</td>
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<td>Married</td>
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<td>31.96</td>
<td>164</td>
<td>45.43</td>
<td>226</td>
<td>40.72</td>
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<td>5.15</td>
<td>17</td>
<td>4.71</td>
<td>27</td>
<td>4.86</td>
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<td>Widow/Widower</td>
<td>5</td>
<td>2.58</td>
<td>9</td>
<td>2.49</td>
<td>14</td>
<td>2.52</td>
</tr>
<tr>
<td>Total</td>
<td>191</td>
<td>98.45</td>
<td>319</td>
<td>88.37</td>
<td>510</td>
<td>91.89</td>
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<tr>
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<td>Full-Time Employed</td>
<td>68</td>
<td>35.05</td>
<td>113</td>
<td>31.30</td>
<td>181</td>
<td>32.61</td>
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<tr>
<td>Part-Time Employed</td>
<td>35</td>
<td>18.04</td>
<td>68</td>
<td>18.84</td>
<td>103</td>
<td>18.56</td>
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<td>45.36</td>
<td>127</td>
<td>35.18</td>
<td>215</td>
<td>38.74</td>
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<tr>
<td>Total</td>
<td>191</td>
<td>98.45</td>
<td>308</td>
<td>85.32</td>
<td>499</td>
<td>89.91</td>
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<tr>
<td>Missing</td>
<td>3</td>
<td>1.55</td>
<td>53</td>
<td>14.68</td>
<td>56</td>
<td>10.09</td>
</tr>
</tbody>
</table>

Note: **Sig. nonparametric independent t tests of association, \( P<0.001 \); ESH = Primarily English-Speaking Hispanic/Latino/a; SSH = Primarily Spanish-Speaking Hispanic/Latino/a.
Table 4-2. Comparison of Health-Related Characteristics of ESH and SSH Patient Participants

<table>
<thead>
<tr>
<th>Clinic Type</th>
<th>English</th>
<th>%</th>
<th>Spanish</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>N</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Health Care Center/Clinic</td>
<td>139</td>
<td>71.65</td>
<td>266</td>
<td>73.68</td>
<td>405</td>
<td>72.97</td>
</tr>
<tr>
<td>Hospital</td>
<td>7</td>
<td>3.61</td>
<td>6</td>
<td>1.66</td>
<td>13</td>
<td>2.34</td>
</tr>
<tr>
<td>Health Department</td>
<td>5</td>
<td>2.58</td>
<td>13</td>
<td>3.60</td>
<td>18</td>
<td>3.24</td>
</tr>
<tr>
<td>Private Practice</td>
<td>23</td>
<td>11.86</td>
<td>18</td>
<td>4.99</td>
<td>41</td>
<td>7.39</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>2.58</td>
<td>6</td>
<td>1.66</td>
<td>11</td>
<td>1.98</td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td>92.27</td>
<td>309</td>
<td>85.60</td>
<td>488</td>
<td>87.93</td>
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<tr>
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<td>7.73</td>
<td>52</td>
<td>14.40</td>
<td>67</td>
<td>12.07</td>
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<table>
<thead>
<tr>
<th>Provider Race/Ethnicity*</th>
<th>English</th>
<th>%</th>
<th>Spanish</th>
<th>%</th>
<th>Total</th>
<th>%</th>
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<td></td>
<td>N</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>African American/Black</td>
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<td>5.67</td>
<td>18</td>
<td>4.99</td>
<td>29</td>
<td>5.23</td>
</tr>
<tr>
<td>White/European American</td>
<td>96</td>
<td>49.48</td>
<td>106</td>
<td>29.36</td>
<td>202</td>
<td>36.40</td>
</tr>
<tr>
<td>Native American</td>
<td>5</td>
<td>2.58</td>
<td>24</td>
<td>6.65</td>
<td>29</td>
<td>5.23</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>15</td>
<td>7.73</td>
<td>11</td>
<td>3.05</td>
<td>26</td>
<td>4.68</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
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<td>15.46</td>
<td>109</td>
<td>30.19</td>
<td>139</td>
<td>25.05</td>
</tr>
<tr>
<td>Other Race/Ethnicity</td>
<td>30</td>
<td>15.46</td>
<td>11</td>
<td>3.05</td>
<td>41</td>
<td>7.39</td>
</tr>
<tr>
<td>Total</td>
<td>187</td>
<td>96.39</td>
<td>279</td>
<td>77.29</td>
<td>466</td>
<td>83.96</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
<td>3.61</td>
<td>82</td>
<td>22.71</td>
<td>89</td>
<td>16.04</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Provider Gender</th>
<th>English</th>
<th>%</th>
<th>Spanish</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td></td>
<td>N</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>71</td>
<td>36.60</td>
<td>101</td>
<td>27.98</td>
<td>172</td>
<td>30.99</td>
</tr>
<tr>
<td>Female</td>
<td>116</td>
<td>59.79</td>
<td>202</td>
<td>55.96</td>
<td>318</td>
<td>57.30</td>
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<td>96.39</td>
<td>303</td>
<td>83.93</td>
<td>490</td>
<td>88.29</td>
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<td>3.61</td>
<td>58</td>
<td>16.07</td>
<td>65</td>
<td>11.71</td>
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<table>
<thead>
<tr>
<th>Clinic Visits</th>
<th>English</th>
<th>%</th>
<th>Spanish</th>
<th>%</th>
<th>Total</th>
<th>%</th>
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<tbody>
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<td>N</td>
<td></td>
<td>N</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>1 time</td>
<td>19</td>
<td>9.79</td>
<td>37</td>
<td>10.25</td>
<td>56</td>
<td>10.09</td>
</tr>
<tr>
<td>2 to 5 times</td>
<td>96</td>
<td>49.48</td>
<td>161</td>
<td>44.60</td>
<td>257</td>
<td>46.31</td>
</tr>
<tr>
<td>6 to 10 times</td>
<td>42</td>
<td>21.65</td>
<td>69</td>
<td>19.11</td>
<td>111</td>
<td>20.00</td>
</tr>
<tr>
<td>Over 10 times</td>
<td>33</td>
<td>17.01</td>
<td>46</td>
<td>12.74</td>
<td>79</td>
<td>14.23</td>
</tr>
<tr>
<td>Total</td>
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<td>97.94</td>
<td>313</td>
<td>86.70</td>
<td>503</td>
<td>90.63</td>
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<td>2.06</td>
<td>48</td>
<td>13.30</td>
<td>52</td>
<td>9.37</td>
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Note: *Significant nonparametric independent t tests of association, \( P<0.05 \); ESH = Primarily English-Speaking Hispanic/Latino/a; SSH = Primarily Spanish-Speaking Hispanic/Latino/a.
Table 4-2. Comparison of Health-Related Characteristics of ESH and SSH Patient Participants

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th></th>
<th>Spanish</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Health Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent</td>
<td>29</td>
<td>14.95</td>
<td>39</td>
<td>10.80</td>
<td>68</td>
<td>12.25</td>
</tr>
<tr>
<td>Very Good</td>
<td>44</td>
<td>22.68</td>
<td>61</td>
<td>16.90</td>
<td>105</td>
<td>18.92</td>
</tr>
<tr>
<td>Good</td>
<td>62</td>
<td>31.96</td>
<td>94</td>
<td>26.04</td>
<td>156</td>
<td>28.11</td>
</tr>
<tr>
<td>Fair</td>
<td>45</td>
<td>23.20</td>
<td>109</td>
<td>30.19</td>
<td>154</td>
<td>27.75</td>
</tr>
<tr>
<td>Poor</td>
<td>9</td>
<td>4.64</td>
<td>17</td>
<td>4.71</td>
<td>26</td>
<td>4.68</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>97.42</td>
<td>320</td>
<td>88.64</td>
<td>509</td>
<td>91.71</td>
</tr>
<tr>
<td>Missing</td>
<td>5</td>
<td>2.58</td>
<td>41</td>
<td>11.36</td>
<td>46</td>
<td>8.29</td>
</tr>
<tr>
<td>BMI Classification*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;18.50 = Underweight</td>
<td>6</td>
<td>3.09</td>
<td>4</td>
<td>1.11</td>
<td>10</td>
<td>1.80</td>
</tr>
<tr>
<td>18.50-24.99 = Normal Range</td>
<td>50</td>
<td>25.77</td>
<td>64</td>
<td>17.73</td>
<td>114</td>
<td>20.54</td>
</tr>
<tr>
<td>25.00-29.99 = Overweight</td>
<td>52</td>
<td>26.80</td>
<td>88</td>
<td>24.38</td>
<td>140</td>
<td>25.23</td>
</tr>
<tr>
<td>≥ 30.00 = Obese</td>
<td>58</td>
<td>29.90</td>
<td>46</td>
<td>12.74</td>
<td>104</td>
<td>18.74</td>
</tr>
<tr>
<td>Total</td>
<td>166</td>
<td>85.57</td>
<td>202</td>
<td>55.96</td>
<td>368</td>
<td>66.31</td>
</tr>
<tr>
<td>Missing</td>
<td>27</td>
<td>13.92</td>
<td>159</td>
<td>44.04</td>
<td>186</td>
<td>33.51</td>
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Note: *Significant nonparametric independent t tests of association, \( P<0.05; \) ESH = Primarily English-Speaking Hispanic/Latino/a; SSH = Primarily Spanish-Speaking Hispanic/Latino/a.
Table 4-3. Correlations among Variables for Total Sample Hispanic/Latino/a Patient Participants

<table>
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<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>M</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adherence</td>
<td>1</td>
<td>0.321**</td>
<td>0.099*</td>
<td>0.277**</td>
<td>0.165**</td>
<td>3.114</td>
<td>0.575</td>
<td>0.595</td>
</tr>
<tr>
<td>2. Trust</td>
<td>---</td>
<td>1</td>
<td>-0.017</td>
<td>0.426**</td>
<td>0.546**</td>
<td>11.740</td>
<td>2.621</td>
<td>0.906</td>
</tr>
<tr>
<td>3. Control</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>0.139**</td>
<td>-0.106*</td>
<td>3.909</td>
<td>1.015</td>
<td>0.785</td>
</tr>
<tr>
<td>4. Satisfaction</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>0.426**</td>
<td>3.580</td>
<td>0.619</td>
<td>0.738</td>
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<tr>
<td>5. Provider CSHC</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>3.302</td>
<td>0.469</td>
<td>0.972</td>
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</tbody>
</table>

Note. Correlation coefficients with an * and ** are significant at the 0.05 and 0.01 level, respectively, according to a one-tailed test.
Table 4-4. Correlations among Variables for the ESH and SSH Patient Participants

<table>
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<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>M</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1. Adherence</td>
<td>1.304**</td>
<td>.085</td>
<td>.234**</td>
<td>.156*</td>
<td>3.162</td>
<td>.5864</td>
<td>.687</td>
</tr>
<tr>
<td></td>
<td>2. Trust</td>
<td>---</td>
<td>1</td>
<td>.043</td>
<td>.529**</td>
<td>.548**</td>
<td>11.995</td>
<td>2.6555</td>
</tr>
<tr>
<td></td>
<td>3. Control</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>.074</td>
<td>-.015</td>
<td>4.148</td>
<td>1.0216</td>
</tr>
<tr>
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<td>4. Satisfaction</td>
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<td>---</td>
<td>---</td>
<td>1</td>
<td>.538**</td>
<td>3.591</td>
<td>.7399</td>
</tr>
<tr>
<td></td>
<td>5. Provider CSHC</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>1</td>
<td>3.267</td>
<td>.4901</td>
</tr>
<tr>
<td>Spanish</td>
<td>1. Adherence</td>
<td>1.327**</td>
<td>.094</td>
<td>.316**</td>
<td>.177**</td>
<td>3.087</td>
<td>0.567</td>
<td>.532</td>
</tr>
<tr>
<td></td>
<td>2. Trust</td>
<td>---</td>
<td>1</td>
<td>-.076</td>
<td>.352**</td>
<td>.555**</td>
<td>11.594</td>
<td>2.5934</td>
</tr>
<tr>
<td></td>
<td>3. Control</td>
<td>---</td>
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<td>-.151**</td>
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<td>.9871</td>
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<tr>
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<td>4. Satisfaction</td>
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<td>---</td>
<td>---</td>
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<td>3.574</td>
<td>.5411</td>
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<tr>
<td></td>
<td>5. Provider CSHC</td>
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<td>---</td>
<td>---</td>
<td>---</td>
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<td>3.321</td>
<td>.4562</td>
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</table>

Note. Correlation coefficients with an * and ** are significant at the 0.05 and 0.01 level, respectively, according to a one-tailed test; ESH = Primarily English-Speaking Hispanic/Latino/a; SSH = Primarily Spanish-Speaking Hispanic/Latino/a.
Table 4-5. Results of Testing the Multigroup Analyses of the Patient-Centered Culturally Sensitive Health Care Model across ESH and SSH Patient Participants

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>$\chi^2$</th>
<th>RMSEA (90% CI)</th>
<th>CFI</th>
<th>NFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 (Equal)</td>
<td>10</td>
<td>25.98</td>
<td>0.054 (0.029-0.080)</td>
<td>0.962</td>
<td>0.942</td>
<td>0.885</td>
</tr>
<tr>
<td>Model 2 (Free)</td>
<td>1</td>
<td>2.61</td>
<td>0.054 (0.000-0.139)</td>
<td>0.996</td>
<td>0.994</td>
<td>0.885</td>
</tr>
<tr>
<td>Model 3 (Reduced)</td>
<td>9</td>
<td>8.58</td>
<td>0.000 (0.000-0.046)</td>
<td>1.000</td>
<td>0.981</td>
<td>1.003</td>
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Model Comparisons

<table>
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<th>Models 1 and 2</th>
<th>df</th>
<th>$\chi^2$ diff</th>
<th>$P$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models 2 and 3</td>
<td>8</td>
<td>5.97</td>
<td>0.650</td>
</tr>
</tbody>
</table>

Note. ESH = Primarily English-Speaking Hispanic/Latino/a; SSH = Primarily Spanish-Speaking Hispanic/Latino/a.
Figure 4-1. Standardized Parameter Estimates for Full Sample Data ($n = 555$, all parameters had critical ratios $> 1.96$).
Figure 4-2. Standardized Parameter Estimates for Primarily English-Speaking Hispanics/Latinos/as Reduced Model ($n = 196$, all parameters had critical ratios $> 1.96$).
Figure 4-3. Standardized Parameter Estimates for Primarily Spanish-Speaking Hispanics/Latinos/as Reduced Model ($n = 361$, all parameters had critical ratios > 1.96).

<table>
<thead>
<tr>
<th>Provider CSHC</th>
<th>Control</th>
<th>Satisfaction</th>
<th>Trust</th>
<th>Adherence</th>
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<td>-.15</td>
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<td>psq_resid</td>
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</table>
Figure 4-4. Differences between Primarily English-Speaking Hispanic/Latino/a Patients’ and Primarily Spanish-Speaking Hispanic/Latino/a Patients’ Level of General Treatment Adherence.
The purpose of the present study was to test a modified version of the Tucker’s Patient-Centered Culturally Sensitive Health Care (PC-CSHC) model. This was accomplished by examining the links between culturally sensitive provider behaviors and attitudes as viewed by patients (i.e., patient-perceived provider cultural sensitivity) and general treatment adherence among a sample of primarily English-speaking Hispanic/Latino/a patient participants and primarily Spanish-speaking Hispanic/Latino/a patient participants. The related variables or linkage variables that were examined between patient-perceived provider cultural sensitivity and general treatment adherence were patient trust in physician, patient control in the treatment decision-making process, and satisfaction with physician care. This chapter presents a summary and interpretations of the findings, a discussion of the limitations of this study, and a discussion of the implications of the results of this study.

**Summary and Interpretations of the Findings**

This study is one of the few studies that have sought to examine the predictors of general treatment adherence in a sample of primarily Spanish-speaking Hispanics/Latinos/as and primarily English-speaking Hispanics/Latinos/as living in the U.S. Importantly, the sample included enough Spanish-speaking Hispanics/Latinos/as to enable meaningful analyses of the impact of language. In addition, participants in this study were from a variety of Hispanic/Latino/a subgroups (i.e., groups that differ by country of origin, nativity, and socioeconomic status).

**Descriptive Data**

Several findings were revealed in the descriptive data. First, primarily Spanish-speaking Hispanics/Latinos/as, a particularly vulnerable subpopulation, were indentified in the present
study to be much poorer and less educated than their primarily English-speaking Hispanic/Latino/a counterparts. This finding is consistent with the findings of others that differences between primarily English-speaking and primarily Spanish-speaking Hispanics/Latinos/as are of greater magnitude than differences between primarily English-speaking Hispanics/Latinos/as and non-Hispanics/Latinos/as in rates of poverty, high school education, and overall health outcomes (Derose & Baker, 2000; Weech-Maldonado, Fongwa, Guittierez, & Hays, 2007). Additionally, it was found that a larger percentage of Spanish-speaking Hispanic/Latino/a patients received care primarily from Hispanic/Latino/a/Latino physicians as compared with their English-speaking Hispanic/Latino/a counterparts who received care primarily from non-Hispanic White physicians. Another interesting finding was that BMI levels (based on self-reported rather than objectively assessed weight and height data) were lower for Spanish-speaking Hispanic/Latino/a patients than for English-speaking Hispanic/Latino/a patients in this study.

The exploration of mean rating differences among the study’s major variables revealed both expected and unexpected findings. As expected, the English-speaking Hispanic/Latino/a patients reported higher mean ratings for trust in physician, satisfaction with physician care, patient control in the treatment decision-making process, and general treatment adherence when compared to their Spanish-speaking counterparts. These findings are consistent with results from previous empirical studies that included Hispanic/Latino/a patients (Baker, Hayes, & Fortier, 1998; Jacobs, Sadowski, & Rathouz, 2007; Stepanikova, Mollborn, Cook, Thom, & Kramer, 2006).

The unexpected finding in the present study was that Spanish-speaking Hispanic/Latino/a patients had higher mean ratings of patient-perceived provider cultural sensitivity than did their
English-speaking Hispanic/Latino/a counterparts. While unanticipated, this finding is in line with the research of Weech-Maldonado, Fongwa, Gutierrez, and Hays (2007), in which primarily Spanish-speaking Hispanics/Latinos/as in specific U.S. regions (California, Florida, New York/New Jersey, and other states) reported more favorable experiences with the managed care aspects of their Medical Care Services (e.g., getting needed care) when compared to their English-speaking counterparts. Another study by Stepanikova and Cook (2004) showed similar results where health care policies had a greater negative effect on assessments of care of Hispanic/Latino/a English speakers than among Hispanic/Latino/a Spanish speakers. Stepanikova and Cook (2004) speculated that Hispanics/Latinos/as’ experience with the U.S. health care system may be affected by their level of English proficiency, and posited that Hispanics/Latinos/as who are less likely to speak English may be less familiar with the U.S. health care system, and as a result may be more tolerant of the health care that they experience.

**Hypothesis**

The present study provided an empirical evaluation of a modified version of the Patient-Centered Culturally Sensitive Health Care (PC-CSHC) Model. This model was developed to explain and thus identify ways to improve general treatment adherence to provider treatment recommendations among linguistically diverse patients. Testing of the modified PC-CSHC model was based on data derived from a participant sample of Hispanic/Latino/a patients utilizing health care centers/clinics across the U.S., and involved using path analyses to examine the links between the following variables: (a) patient-perceived provider cultural sensitivity, (b) trust in physician, (c) satisfaction with physician, (d) patient control in the treatment decision-making process, and (e) self-reported general treatment adherence to physician recommended treatment regimen.
The path model analyses revealed significant links between patient-perceived provider cultural sensitivity and general treatment adherence to physician recommended treatment regimen, with some differences in associations emerging by language. Overall, the findings provide support for the provision of patient-centered culturally-sensitive health care and provide some empirical support for the modified PC-CSHC model. Prior to this study there was little empirical evidence of direct links between provider cultural sensitivity and provider recommended treatment regimen among Hispanic/Latino/a patients (Betancourt, 2005; Goode, Dunne, & Bronheim, 2006; Smedley et al., 2003).

Although the general tenets of the modified PC-CSHC model fit for both the primarily English-Speaking and primarily Spanish-speaking patients in the present study, there were some notable model differences. Among both language groups, patient-perceived provider cultural sensitivity had direct effects on important indicators of confidence and comfort with provider (i.e., trust and satisfaction with physician care), though the effect on satisfaction was stronger for the primarily English-speaking patients. For primarily Spanish-speaking patients in this study but not primarily English-speaking patients, patient-perceived provider cultural sensitivity also had a direct negative effect on patient control in the treatment decision-making process. Trust in physician and patient control in the treatment decision-making process were also linked to satisfaction with physician care for both language groups. The size of the association between trust in physician and satisfaction with physician care for primarily English-speaking patients was significantly larger than observed with the primarily Spanish-speaking patients.

Tests of indirect effects revealed that, not surprisingly, for both language groups, satisfaction with physician care was likely an indirect function of the effect that patient-perceived provider cultural sensitivity had on trust in physician. In essence, both groups were
likely to have greater trust in providers if they deemed them to be culturally sensitive. In turn, that trust translated into greater likelihood of being satisfied with the care received. The indirect effects of patient-perceived cultural sensitivity were mediated only through trust in physician and satisfaction in physician care, and not through patient control in the treatment decision-making process. Additionally, no significant direct path between patient-perceived provider cultural sensitivity and general treatment adherence was observed in the model. These findings suggest that Hispanic/Latino/a patients with higher levels of patient-perceived provider cultural sensitivity tend to report higher levels of trust and satisfaction with physician care, which in turn contribute to higher general treatment adherence to physician recommended treatment regimen. Contrary to the stated hypothesis, no significant correlation was found between patient control in the treatment decision-making process and general treatment adherence.

Research Question

The research question explored whether there were significant mean differences in patients’ perceived levels of cultural sensitivity of their health care provider’s behaviors and attitudes (i.e., perceived level of provider sensitivity in the health care they experience) and general treatment adherence in association with language and gender. To address this research question, a MANOVA was performed on data obtained from the Hispanic/Latino/a patient participants in the present study. Results of this multivariate analysis to test mean differences in the major variables of interest in association with language, gender, and language by gender revealed that the SSHs were significantly less likely than the ESHs to adhere to provider treatment recommendations. This finding is consistent with prior reports of the negative impact of language barriers on treatment adherence among Hispanics/Latinos/as who primarily speak Spanish (Eamranond et al., 2009; Rivadeneyra, Elderkin-Thompson, Silver, & Waitzkin, 2000).
Limitations and Future Directions of Research

Although the data used in this study included a sample of Hispanics/Latinos/as with characteristics similar to those from other nationally representative surveys (Weinick et al, 2004), this study, however, has four notable limitations. The first limitation is the generalizability of the study’s findings. Experiences of Hispanic/Latino/a patients living in the U.S. and those that access the health care system cannot be generalized from the findings of this study due to the fact that the language groups were limited to a modest sample size of 361 Hispanics/Latinos/as patients who primarily spoke Spanish and the 194 Hispanic/Latino/a patients who primarily spoke English, respectively. Additionally, patient participants were not randomly selected to participate in the present study; rather, they self-selected to be study participants. This self-selection bias limits the generalizability of the present findings. As such, the present study should be replicated with a larger and randomly selected sample size and with a greater representation of Hispanics/Latinos/as patients who are accessing and utilizing health care services.

The second limitation of the present study is the use of self-report measures, which raises questions regarding the reliability of the obtained data. Self-report measures of treatment adherence may encourage socially desirable responses rather than accurate responses (DiMatteo, 2005). Future studies similar to the present study should include a social desirability instrument, as data from it would enable controlling for social desirability should doing so be indicated. Future similar research should also corroborate patients’ self-reports of their treatment adherence. However, it is important to note that previous studies comparing treatment adherence assessment measures have concluded that self-reports of adherence behaviors are highly consistent with actual adherence as recorded in medical charts or insurance claims, even in low income groups (Yarbroff & Mandelblatt, 1999). Future studies, however, may benefit from
gathering data from multiple sources, such as from health care provider’s assessments of patient adherence or various methods of adherence measurement (i.e., pill counting).

The third limitation of the present study is that its cross-sectional design does not allow for observation of the variables of interest over time and does not allow determination of causal relationships between predictor and outcome variables. Specifically, the cause and effect between self-reported levels of patient-perceived provider cultural sensitivity in health care experienced with patient-physician interpersonal process factors (i.e., trust in physician, satisfaction with physician care, and patient control in the treatment decision-making process) and treatment adherence could not be determined with this study. Future studies incorporating a longitudinal design will enable a more reliable test of the relationship between patient-perceived provider cultural sensitivity in health care experienced and treatment adherence than was possible in the present study.

Finally, subjective norms and attitudes pertaining to the patient-physician relationship do not exclusively consist of experiences of language barriers and patient-perceived provider cultural sensitivity of the health care experienced. Limited scales exist for assessing specific cultural factors related to general treatment adherence in Hispanic/Latino/a patients, and these scales may not reflect values that are important in the Hispanic/Latino/a culture such as respect for authority, collectivism (vs. individualism), and spirituality. Other factors such as acculturation, family history of treatment adherence/nonadherence, and patient knowledge of the importance of chronic illness prevention may also impact general treatment adherence and thus will be important to assess in future studies with Hispanic/Latino/a patients.
Implications for Public Health Educators, Health Care Professionals, and Health Care Sites

There are several implications of the present study’s findings for public health educators, health care professionals, health care sites and health care policies. Specifically, the finding that Spanish-speaking Hispanic/Latino/a patients had lower levels of treatment adherence scores than their English-speaking counterparts could be used by public health educators in developing new or expanding upon existing educational campaigns to promote treatment adherence. Such campaigns should perhaps target Hispanics/Latinos/as who primarily speak Spanish and use language sensitive materials.

The implications of the present study’s findings for health care providers comes from the preliminary evidence in this study that language moderates the relationship between patient-perceived cultural sensitivity in health care experienced and treatment adherence for both language groups, and that patient satisfaction and patient trust mediate the relationship between patient-perceived provider cultural sensitivity and general treatment adherence. These findings highlight the need for interventions aimed at improving communication between health care providers and patients, such as through the use of interpreters. These interventions may not only increase the rate of adherence to general treatment recommendations among primarily Spanish-speaking Hispanic/Latino/a patients, but may also improve their trust and satisfaction with the patient-physician relationship. Therefore, opportunities for patients to identify and communicate what promotes their trust in and satisfaction with health care received are needed, and health care providers should be receptive to this feedback in order to engender a relationship of greater trust and satisfaction among their Hispanic/Latino/a patients.

Increasing the number of Hispanic/Latino/a health care providers may also increase the pool of linguistically- and culturally-sensitive providers available to treat Spanish-speaking
patients. It is also possible that non-Hispanic health care providers can achieve sufficiently high levels of Spanish language proficiency and cultural sensitivity to achieve optimal rates of treatment adherence from their primarily Spanish-speaking patients. Doing so will require that medical education emphasize the development of language skills in Spanish, and skills in cross-cultural communication for all students and residents as recommended by Mirsu-Paun & Tucker (2010).

The implications of the present study for health care sites is that these sites should indeed include patient centeredness (i.e., one component of patient-perceived cultural sensitivity in health care experienced) as a key way to improve quality of care as asserted by the Institute of Medicine (Fernandez et al., 2004). Additionally, administrators at health care sites that predominately serve Spanish-speaking Hispanic/Latino/a patients need to assess the level of patient-perceived provider cultural sensitivity among the patients in their settings. This assessment could be done using the T-CSHCl-Patient Form.

**Implications for Counseling Psychologists**

There are also several implications of the findings from the present study for counseling psychologists. Given their training in multicultural counseling and assessment of multicultural competence/sensitivity and in conducting culturally sensitive research with diverse populations they are well suited to (a) develop training programs to facilitate providers’ cultural sensitivity with culturally diverse patients, including Hispanic/Latino/a patients like those in the present study, and (b) conduct research to identify ways to promote patient trust of and satisfaction with their providers and then evaluate the occurrence of this trust and satisfaction. As researchers, counseling psychologists are also well prepared to conduct outcome research related to treatment adherence and to evaluate the effects of patient-perceived culturally sensitive health care training on provider’s attitudes and behaviors, and on the interpersonal processes of the patient-physician
relationship (i.e., trust in physician, satisfaction with physician care, and patient control in the treatment decision-making process).

Individual and group counseling are also modalities that could be employed to help Hispanic/Latino/a patients and their family members and/or friends identify and communicate their expectations of the patient-provider relationship. In particular, counseling psychologists could provide patients who are Spanish-speaking with culturally appropriate and language sensitive skills (e.g., assertiveness skills) for obtaining the health care and health promotion resources they need from providers and others in health care settings.

Counseling psychologists can also play a major role in the development, implementation, and evaluation of intervention programs aimed at reducing treatment nonadherence among Hispanic/Latino/a patients. For example, counseling psychologists can develop health empowerment training workshops for Hispanic/Latino/a patients that are designed to teach these patients strategies and skills for eliciting patient-centered cultural sensitivity in health care experienced from health care professionals, particularly their physicians. Counseling psychologists working in health care settings may be particularly helpful in teaching health care providers how to display behaviors and attitudes that enable their patients to feel satisfied and trusting of the patient-provider relationship and that promote and support treatment adherence.

**Conclusions**

As the population of Hispanics/Latinos/as in the United States (U.S.) continues to increase in the coming years, culturally- and linguistically-sensitive health care practices with this group will become more important to health care organizations, health professionals, and health policymakers. Current models of treatment adherence do not adequately address the unique needs of Hispanic/Latino/a patients living in the U.S. The modified version of the Tucker’s Culturally Sensitive Health Care Model provides a preliminary framework for
understanding some important factors in treatment adherence among Hispanic/Latino/a patients living in the U.S. The model is also flexible enough to be useful in understanding the treatment adherence of Hispanic/Latino/a patients who primarily speak English or who primarily speak Spanish.

The present study provides an initial examination of the influence of patient-perceived provider cultural sensitivity in health care experienced and interpersonal processes of care in the patient-physician relationship (i.e., trust in physician, satisfaction with physician care, and patient control in the treatment decision-making process) on general treatment adherence. The findings suggest that patient-perceived provider cultural sensitivity, trust in physician, and satisfaction with physician care indirectly influence general treatment adherence in Hispanic/Latino/a patients. Moreover, the tested model to examine the relationships among these variables explained 14% of the variance in general treatment adherence.

To decrease the occurrence of treatment nonadherence among Hispanic/Latino/a patients, interventions to promote treatment adherence must be based on a comprehensive, culturally sensitive model of treatment adherence like that used in the present study. Findings based on the model highlight the need for interventions aimed at improving interpersonal processes of care between health care providers and their Hispanic/Latino/a patients. Such interventions may effectively increase general treatment adherence among these patients.

Understanding the predictors of general treatment adherence among various sub-groups of Hispanic/Latino/a patients such as the different language groups in the present study is particularly important given the findings in the present study that the predictors of general adherence differ between patients who prefer to speak Spanish and patients who prefer to speak English. Clearly, future research on treatment adherence/nonadherence among Hispanic/Latino/a
patients should consider within group differences among these patients, and such research should be a priority for health care administrators who work in health care sites that predominately serve Spanish-speaking Hispanic/Latino/a patients and should be among our national research priorities. The ultimate result of such priorities may be health outcomes among Hispanic/Latino/a patients that will help reduce the health disparities that plague our nation.
APPENDIX A
DEMOGRAPHIC AND HEALTH DATA QUESTIONNAIRE (DHDQ)

Directions: Please answer the questions below by filling in the blank or shading in the circle next to the answer you choose like this: ●.

1. What is your gender?
   ○ Male
   ○ Female

2. What is your age?
   ○ Age 18-24
   ○ Age 25-34
   ○ Age 35-44
   ○ Age 45-54
   ○ Age 55-64
   ○ Age 65 or older

3. Which of the following best describes you?
   ○ Single, living without a partner
   ○ Single, living with a partner
   ○ Married, living with a partner
   ○ Married, not living with a partner
   ○ Divorced or separated
   ○ Widow/Widower

4. Please shade in one or more of the circles below that best describes your race/ethnicity:
   ○ African American/Black American
   ○ White/European American
   ○ American Indian/Native American
   ○ Asian/Asian American/Pacific Islander
   ○ Hispanic/Hispanic American/Latino(a)
   ○ Other (please specify: ______________________)

5. If Hispanic/Latino or Asian/Asian American, please shade in one or more of the circles that best describes your ethnicity:
   If Hispanic/Latino(a) shade below:
   ○ Cuban/Cuban American
   ○ Mexican/Mexican American/Chicano(a)
   ○ Puerto Rican
   ○ Other Hispanic/Latino(a)
     (please specify: ______________________)
   If Asian/Asian American shade below:
   ○ Chinese/Chinese American
   ○ Vietnamese/Vietnamese American
   ○ Filipino/Filipino American
   ○ Other Asian
     (please specify: ______________________)
6. What is the **highest** level of education that you have completed?
   - Elementary School
   - Middle/Junior High School
   - High School
   - Some College/Technical School
   - College
   - Graduate School

7. What is your employment status?
   - Work Full Time
   - Work Part Time
   - Do Not Work

8. What is your yearly household income?
   - Less than $10,000
   - $10,000 – 20,000
   - $20,001 – 30,000
   - $30,001 – 40,000
   - $40,001 – 50,000
   - $50,001 – 60,000

9. How **religious** are you?
   - Not At All Religious
   - Religious
   - Slightly Religious
   - Very Religious
   - Somewhat Religious

10. How **spiritual** are you?
    - Not At All Spiritual
    - Spiritual
    - Slightly Spiritual
    - Very Spiritual
    - Somewhat Spiritual

11. How often do you pray/meditate?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Very Often

12. Where do you usually receive your health care services?
    - Health Care Center/Clinic
    - Private Practice
    - Hospital
    - Other
    - Health Department
    (please specify: ________________)

13. What is the gender of the primary health care provider that you see most often?
    - Male
    - Female
14. What do you think is the age of the health care provider that you see most often?

- Age 18-24
- Age 25-34
- Age 35-44
- Age 45-54
- Age 55-64
- Age 65 or older

15. What is the race/ethnicity of the health care provider that you see most often?

- African American/Black American
- White/European American
- American Indian/Native American
- Hispanic/Latino(a)
- Other
  (please specify: ____________________)
- Asian/Asian American

16. How many times each year do you see the health care provider that you see most often?

- 1 time
- 2 to 5 times
- 6 to 10 times
- Over 10 times

17. Where were you born?

- In the United States
- In Another Country

18. Where were your parents born?

- In the United States
- In Another Country

19. Do you have children?

- Yes (How many? _________)
- No

20. If so, do your children live with you?

- Yes
- No

21. Where in the United States is your community located?

- Northeast (Pennsylvania to Maine)
- Midwest (Ohio to Kansas)
- Southeast (West Virginia to Texas)
- West (New Mexico to California, including Hawaii and Alaska)

22. In general, how would you describe your health?

- Excellent
- Fair
23. What is your height?

______________ feet and ______________ inches

24. What was your weight the last time you were weighed? ______________ pounds
APPENDIX B
TUCKER-CULTURALLY SENSITIVE HEALTH CARE INVENTORY –
PATIENT FORM (T-CSHCI-PF)

**Directions:** Please fill out the survey using the following steps: (1) Take a moment to think about your experiences with the provider you see most often at your health care center or office. This provider might be a doctor, a nurse practitioner, or some other health care provider. Now please rate how much you agree that this provider shows each health care characteristic or behavior listed below. Please use a rating of 1, 2, 3, or 4, where 1 = “Strongly Disagree”, 2 = “Disagree”, 3 = “Agree”, and 4 = “Strongly Agree”. (2) Now take a moment and think about the statements you just rated below. Please choose “Your Top 10” statements that are most important to you by shading only the circles in the gray section. Please shade in the circles below like this: ●.

<table>
<thead>
<tr>
<th>THE HEALTH CARE PROVIDER I SEE MOST OFTEN WHEN I VISIT MY HEALTH CARE CENTER OR OFFICE:</th>
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<tbody>
<tr>
<td>1. Is compassionate or shows that he or she cares about how I feel.</td>
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<td>2. Is concerned about my well-being.</td>
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<td>3. Is honest and direct with me.</td>
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<td>4. Is dedicated to her or his work.</td>
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<td>5. Enjoys what he or she is doing.</td>
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<td>6. Is well educated.</td>
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<tr>
<td>7. Is knowledgeable about medicine.</td>
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<tr>
<td>8. Knows what he or she is doing.</td>
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<tr>
<td>9. Is confident in his or her abilities.</td>
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<tr>
<td>10. Is right about why I am sick.</td>
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<td>11. Responds to my requests.</td>
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<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
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<td>12.</td>
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<tr>
<td>13.</td>
<td>Is concerned about my present situation and future situations.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
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<td>14.</td>
<td>Treats all of his or her patients equally.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
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<td>15.</td>
<td>Examines me the same way he or she examines other patients.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
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<td>17.</td>
<td>Explains prescribed medications and procedures in ways I can understand.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
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<td>18.</td>
<td>Is helpful.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
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<td>19.</td>
<td>Treats me like a person, not just a number.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
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<td>20.</td>
<td>Cares more about patients than about making money.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
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<td>21.</td>
<td>Follows a common procedure for treating and examining all of his or her patients.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
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<tr>
<td>22.</td>
<td>Correctly diagnoses and treats my illness.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Shows that he or she is familiar with me and my health.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Consults with others to help me.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Sends me to another health care provider when he or she cannot treat or communicate with me.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Is not scared to touch me.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Takes my concerns seriously.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Does not question the truth or accuracy of what I am feeling.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Does not try to diagnose all my problems as psychological or “in my mind”.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Does not talk down to me.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Tries to communicate with me.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>Tries to educate me.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>Tries to connect with me.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Takes all my concerns seriously even if he or she does not consider them to be serious.</td>
<td>☐ ☐ ☐ ☐ ☐</td>
<td></td>
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<tr>
<td></td>
<td>Description</td>
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<td>------------------------------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
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</tr>
<tr>
<td>35</td>
<td>Does not embarrass me in private or public.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>36</td>
<td>Prescribes medicine only when he or she is sure of my illness.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>37</td>
<td>Prescribes treatments that work.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>38</td>
<td>Prescribes medicine only after examining me.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>39</td>
<td>Reviews my record before prescribing medications or treatments.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>40</td>
<td>Is available for me.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>41</td>
<td>Checks out my problem as soon as I go to see her or him.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>42</td>
<td>Is consistent in her or his diagnosis and treatment of my illness.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>43</td>
<td>Listens to me.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>44</td>
<td>Takes his or her time during my visit.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>45</td>
<td>Asks me questions about my symptoms.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>46</td>
<td>Examines me thoroughly and completely.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>47</td>
<td>Knows the limits of his or her skills.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>48</td>
<td>Explains the medications and procedures he or she prescribes.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>49</td>
<td>Does not make me wait long.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>50</td>
<td>Follows up on my visits.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>51</td>
<td>Puts on a fresh pair of gloves while I am in the examining room.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>52</td>
<td>Talks to me before making decisions about prescriptions and treatments.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>53</td>
<td>Keeps up with new research and treatments.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>54</td>
<td>Treats me with respect.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>55</td>
<td>Puts my mind at ease.</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>
56. Makes me feel that my visit to this health care center was informative and productive. ○ ○ ○ ○
57. Is polite and courteous. ○ ○ ○ ○
58. Is willing to answer all my questions. ○ ○ ○ ○
59. Is sensitive to my needs. ○ ○ ○ ○
60. Speaks English well enough for me to understand what he or she is saying. ○ ○ ○ ○
61. Lets me know about illnesses and diseases common among people of my race/ethnicity. ○ ○ ○ ○
62. Prepares me for the next steps in treating my illness. ○ ○ ○ ○
63. Shows that he or she remembers me. ○ ○ ○ ○
64. Acts professionally. ○ ○ ○ ○
65. Understands my financial situation. ○ ○ ○ ○
66. Shows appreciation for me and all of his or her other patients. ○ ○ ○ ○
67. Shows care and concern for my child/children. ○ ○ ○ ○
68. Is respectful of my religious beliefs. ○ ○ ○ ○
69. Knows how to make me feel comfortable. ○ ○ ○ ○
70. Understands my culture. ○ ○ ○ ○
71. Has training in working with patients of my race/ethnicity. ○ ○ ○ ○
72. Talks to me before making decisions about prescriptions and treatments. ○ ○ ○ ○
## APPENDIX C
### HEALTH CARE JUSTICE INVENTORY (HCJI)

**Directions:** Rate each item on a scale from 0 (strongly disagree) to 3 (strongly agree). Please shade in the circle beneath the answer you choose like this: ●.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Mainly Disagree</th>
<th>Mainly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. You accept your health care provider’s decisions.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2. You felt comfortable with the way your health care provider handles situations.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3. You fully agreed with the solutions that you and your health care provider arrived at.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>4. The decisions about your health care have been based on as much good information as possible.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>5. Your health care provider was honest with you.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>6. Your health care provider probably treated you worse than other patients because of your personal characteristics.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>7. Your health care provider was biased against you.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>8. Your health care provider probably gave you less respect than other patients.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>9. You were treated by your health care provider as if you didn’t matter.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>10. Your health care provider showed little concern for you as an individual.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
## APPENDIX D
### PATIENT SATISFACTION QUESTIONNAIRE SHORT FORM (PSQ-18)

**Directions:** The following statements are some things people say about medical care. Please read each one carefully, keeping in mind the medical care you are receiving now. (If you have not received care recently, think about what you would expect if you needed care today.) There is no right or wrong answer. We are interested in your feelings, *good* and *bad*, about the medical care you have received. Shade in the circle beneath the rating that you choose like this: ●.

How strongly do you **AGREE** or **DISAGREE** with each of the following statements:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>2.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>3.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>4.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>5.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>6.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>7.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>8.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>9.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>10.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>11.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>12. Those who provide my medical care sometimes hurry too much when they treat me.</td>
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<td>-----------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td></td>
<td>13. Doctors (health care providers) sometimes ignore what I tell them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>14. I have some doubts about the ability of the doctors (health care providers) who treat me.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>15. Doctors (health care providers) usually spend plenty of time with me.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>16. I find it hard to get an appointment for medical care right away.</td>
<td></td>
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<tr>
<td></td>
<td>17. I am dissatisfied with some things about the medical care I receive.</td>
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<td></td>
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<tr>
<td></td>
<td>18. I am able to get medical care whenever I need it.</td>
<td></td>
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</tbody>
</table>
APPENDIX E
PATIENT-PRACTITIONER ORIENTATION SCALE (PPOS)

Directions: The statements below are about beliefs that people might have concerning doctors, patients, and medical care. Please shade in the circle beneath the answer you choose like this: ●.

1. The doctor (health care provider) is the one who should decide what gets talked about during a visit.

2. Although health care is less personal these days, this is a small price to pay for medical advances.

3. The most important part of the standard medical visit is the physical exam.

4. It is often best for patients if they do not have a full explanation of their medical condition.

5. Patients should rely on their doctors’ (health care providers’) knowledge and not try to find out about their conditions on their own.

6. When doctors (health care providers) ask a lot of questions about a patient’s background, they are prying too much into personal matters.

7. If doctors (health care providers) are truly good at diagnosis and treatment, the way they relate to patients is not that important.

8. Many patients continue asking questions even though they are not learning anything new.

9. Patients should be treated as if they were partners with the doctor (health care provider), equal in power and status.
10. Patients generally want reassurance rather than information about their health.

11. If a doctor’s (health care provider’s) primary tools are being open and warm, the doctor (health care provider) will not have a lot of success.

12. When patients disagree with their doctor (health care provider), this is a sign that the doctor (health care provider) does not have the patient’s respect and trust.

13. A treatment plan cannot succeed if it is in conflict with a patient’s lifestyle or values.

14. Most patients want to get in and out of the doctor’s (health care provider’s) office as quickly as possible.

15. The patient must always be aware that the doctor (health care provider) is in charge.

16. It is not that important to know a patient’s culture and background in order to treat the person’s illness.

17. Humor is a major ingredient in the doctor’s (health care provider’s) treatment of the patient.

18. When patients look up medical information on their own, this usually confuses more than it helps.
APPENDIX F
GENERAL ADHERENCE MEASURE (GAM)

**Directions:** Please tell us how *often* was each of the following statements true for you during the last 12 months regarding your health care provider’s treatment recommendations. Please shade in the circle beneath the answer you choose like this: ●.

<table>
<thead>
<tr>
<th></th>
<th>None of the time</th>
<th>Some of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I had a hard time doing what my provider suggested I do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I followed my provider’s suggestions exactly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I was unable to do what was necessary to follow my provider’s treatment plans.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. I found it easy to do the things my provider suggested I do.</td>
<td></td>
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<tr>
<td>5. Generally speaking, how often during the past 12 months were you able to do what your provider told you?</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
APPENDIX G
HEALTH CARE SITE PARTICIPATION AGREEMENT CONTRACT

HEALTH PROMOTION SITE AGREEMENT
STATEMENT OF TERMS

1. TERMS
_________________________ hereby agrees to serve as a Health Promotion Site for the Family Health Self-Empowerment (FHSE) project. As a health promotion site, ______________ agrees to allow project participants to access their facility during the term of the project. This will include access to a scale.

2. COMPENSATION
Health promotion site will be compensated in the amount of $100 to be paid at the end of the term of the agreement. Health promotion site will also be given a scale that can be retained by the site after the program.
APPENDIX H
HEALTH CARE SITE DEMOGRAPHIC AND HEALTH DATA QUESTIONNAIRE

Directions: Please answer the questions below. If you have trouble understanding a question, answer it to the best of your ability. Shade in the circle beneath the answer that you choose like this: ●.

1. Does your agency (health care center) utilize interpreters to work with non-English speaking persons?
   ○ ○ ○ ○ ○
   NOT AT ALL  SELDOM  SOMETIMES  OFTEN

2. Does your agency (health care center) subscribe to publications (local or national) in order to stay abreast of the latest information about populations of color?
   ○ ○ ○ ○ ○
   NOT AT ALL  SELDOM  SOMETIMES  OFTEN

3. Does agency (health care center) staff regularly attend cross-cultural workshops?
   ○ ○ ○ ○ ○
   NOT AT ALL  SELDOM  SOMETIMES  OFTEN

4. Are there people of color on the staff of your agency (health care center)?
   ○ ○ ○ ○ ○
   NONE  A FEW  SOME  MANY

5. Does your agency (health care center) provide training that helps staff work with people of color?
   ○ ○ ○ ○ ○
   NOT AT ALL  SELDOM  SOMETIMES  OFTEN

6. Does your agency (health care center) emphasize active recruitment of people of color?
   ○ ○ ○ ○ ○
   NONE  A LITTLE  SOME  A LOT
7. How well has your agency (health care center) been able to retain people of color on its staff?

   NOT AT ALL   BARELY   FAIRLY WELL   VERY WELL

8. Does your agency (health care center) staff routinely discuss barriers to working across cultures?

   NOT AT ALL   SELDOM   SOMETIMES   OFTEN

9. Does your agency (health care center) convene or reward activities that promote learning new languages relevant to the communities of color that the agency (health care center) serves?

   NOT AT ALL   SELDOM   SOMETIMES   OFTEN

ORGANIZATIONAL POLICY AND PROCEDURES

10. As matter of formal policy, does your agency (health care center) …

<table>
<thead>
<tr>
<th></th>
<th>Currently No Policy</th>
<th>Considering Policy</th>
<th>Writing Formal Policy</th>
<th>Policy In Place</th>
</tr>
</thead>
</table>
a. Use culture-specific assessment instruments for diagnosis? | O         | O     | O     | O   |
b. Use culture-specific treatment approaches? | O         | O     | O     | O   |
c. Envision community empowerment as a treatment goal? | O         | O     | O     | O   |
d. Review case practice on a regular basis to determine its relevancy to clients (patients) of color? | O         | O     | O     | O   |
e. Provide or facilitate child care? | O         | O     | O     | O   |
f. Provide or facilitate transportation (e.g., bus tickets, ride-sharing)? | O         | O     | O     | O   |
g. Allow access after regular business hours (e.g. through message-beeper, agreements with crisis-providers, etc.)?

h. Specifically consider culture in service plans?

i. Conduct outreach to community based organizations, service agencies, natural helpers, or extended families?

j. Take referrals from non-traditional sources?

k. Translate agency (health care center) materials into languages that reflect the linguistic diversity in your service area?

l. Advocate for better quality of life for persons of color in addition to providing services?

11. In general, how well are policies communicated to agency (health care center) staff?

12. Is information on the ethnicity or culture of clients (patients) specifically recorded in your organization’s management information system?

REACHING OUT TO COMMUNITIES

13. How well do you assure that communities of color are aware of your program and the services and resources you offer?

14. Does your organization or agency (health care center) reach out to . . .
<table>
<thead>
<tr>
<th></th>
<th>Churches and other places of worship, clergy persons, ministerial alliances, or indigenous religious leaders in communities of color?</th>
<th>NEVER</th>
<th>SELDOM</th>
<th>SOMETIMES</th>
<th>REGULARLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b</td>
<td>Medicine people, health clinics, chiropractors, naturopaths, herbalists, or midwives that provide service in communities of color?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c</td>
<td>Publishers, broadcast or other media sources within communities of color?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d</td>
<td>Formal entities that provide services?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e</td>
<td>Cultural, racial, or tribal organizations where people of color are likely to voice complaints or issues?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f</td>
<td>Business alliances or organizations in communities of color?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

15. Are people of color depicted on agency (health care center) brochures or other print media?  

<table>
<thead>
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<th>NOT AT ALL</th>
<th>SELDOM</th>
<th>SOMETIMES</th>
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</table>

16. Does your agency (health care center) participate in cultural, political, religious, or other events or festivals sponsored by communities of color?  

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<th>SELDOM</th>
<th>SOMETIMES</th>
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Directions: Please answer the questions below. Shade in the circle next to the answer you choose like this: ●.

1. Which of the following best describes the health care site where you work?
   - Community Health Care Center/Clinic
   - Hospital
   - Health Department
   - Private Practice
   - Other (please specify ________________________________)

2. Where in the United States is your health care site located?
   - Northeast (Pennsylvania to Maine)
   - Midwest (Ohio to Kansas)
   - Southeast (West Virginia to Texas)
   - West (New Mexico to California, including Hawaii and Alaska)
   - Other (please specify ________________________________)

3. Directions: Please fill in the following table with information pertaining to your health care site.

<table>
<thead>
<tr>
<th>Total Number of Patients Served</th>
<th>Average Total Number of Health Care Providers with Patient Interaction</th>
<th>Average Total Number of Front Office Staff with Patient Interaction</th>
</tr>
</thead>
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<tr>
<td>Yearly</td>
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<td>Weekly</td>
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</table>
Informed Consent to Participate in Research and Authorization for Collection, Use, and Disclosure of Information for Phase I Patient Participants

PLEASE SIGN BOTH COPIES OF THIS FORM AND RETURN ONLY ONE TO THE RESEARCHERS

You are being asked to take part in a research study. This form provides you with information about the study and seeks your permission for the collection, use, and disclosure of your information necessary for the study. The Principal Investigator (the person in charge of this research) or a representative of the Principal Investigator will also describe this study to you and answer all of your questions. Your participation is entirely voluntary. Before you decide whether or not to take part, read the information below and ask questions about anything you do not understand. If you choose not to participate in this study you will not be penalized or lose any benefits that you would otherwise be entitled to.

1. **Name of Participant ("Study Subject"):**

   ______________________________________________
   (Please put your first and last name here)

2. **Title of Research Study:**
   Patient-Centered Culturally Sensitive Health Care and Health Promotion Project

3. **Source of Funding or Other Material Support:**
   This research is being funded by the Robert Wood Johnson Foundation.

4. **Purpose of the research study:**
   The purpose of this study is to find out about how patients view the attitudes and behaviors of their health care providers and office staff, and to find out about how patients view the characteristics and policies of their health care centers and doctor’s offices.

5. **What you will be asked to take part in the study:**
   You will be asked to fill out a set of questionnaires. Specifically, one questionnaire will ask how much you agree or disagree with statements that describe certain behaviors and attitudes of your health care provider and office staff. It will also ask you how much you agree or disagree with statements that describe your health care center or doctor’s office. Other questionnaires will ask about your lifestyle and culture, your relations with health care providers, your stress level, and your health behaviors. You will also be asked to complete a questionnaire about yourself which asks about your age, gender/sex, race, years of having any long-term health problems, any communication problems you may have, how you pay for your health care, your current health care clinic or doctor’s office, and the number of
visits that you have made to your current health care clinic or doctor’s office in the past year. You will also be asked to provide your name and address below for payment purposes.

Filling out all of the questionnaires should take less than one hour. Please try to complete the questionnaires by filling them out at the health care clinic or doctor’s office you attend before you leave. One of our research assistants will be at your clinic to help you fill out the questionnaires if you need any help or have any questions.

You will be paid for your participation. To see how much money is paid for participation, see Section 7 of this form.

6. Possible Risks and Benefits:
We do not expect any risk to you for participating in this study. There are no known risks to completing the questionnaires. We do not anticipate that you will benefit directly by participating in this project.

7. Compensation:
You will be paid $15 compensation in the form of a money order for participating in this research. This compensation will be mailed to you at the address you provide below.

8. Confidentiality:
Your identity will be kept confidential to the extent provided by law. Your name will not be placed on the questionnaires. Instead, researchers will place a code number on the surveys that you fill out. Your questionnaires will be immediately separated from any documents that may be able to identify you (like your signed informed consent form) and locked in separate filing cabinets in room 293 at the Department of Psychology at the University of Florida. Your individual responses will only be seen by the researchers who are conducting this study and only they will know whether you are participating in the study or not. Also, your answers on the questionnaires will be completely anonymous.

9. Voluntary participation:
Your participation in this study is completely voluntary. There is no penalty for not participating. In addition you may stop completing the questionnaires if it makes you feel uncomfortable, and you may skip any question that you do not wish to answer.

10. Right to withdraw from the study:
You have the right to withdraw from the study at anytime without consequence, but you will only receive your gift card or money order once we receive your completed set of questionnaires.

Whom to contact if you have questions about the study:
Carolyn M. Tucker, Ph.D.
Distinguished Alumni Professor
Joint Professor of Psychology and
Professor of Community Health and Family Medicine
Professor of Pediatrics (Affiliate)
1-352-273-2153 or (Toll-free) 1-866-290-5770
Whom to contact about your rights as a research participant in the study:
University of Florida Institutional Review Board Office
Box 112250 University of Florida
Gainesville, FL 32611-2250
(352)392-0433

Agreement:
I have read the procedure described above. I voluntarily agree to participate in the procedure and
I have received a copy of this description.

Participant:_____________________________ Date:___________

Investigator:_____________________________ Date:___________

Name and Address for Payment:
Please write your name and the address where you would like your gift card to be mailed:

Name: _________________________________

Address Line 1: _______________________________
Address Line 2: _______________________________
City, State, Zip _______________________________

*Please place the first copy of this form in the white envelope and keep the second copy for your
records.
Informed Consent to Participate in Research and Authorization for Collection, Use, and Disclosure of Information for Phase I Providers and Office Staff

PLEASE SIGN BOTH COPIES OF THIS FORM AND RETURN ONLY ONE TO THE RESEARCHERS

You are being asked to take part in a research study. This form provides you with information about the study and seeks your permission for the collection, use, and disclosure of your information necessary for the study. The Principal Investigator (the person in charge of this research) or a representative of the Principal Investigator will also describe this study to you and answer all of your questions. Your participation is entirely voluntary. Before you decide whether or not to take part, read the information below and ask questions about anything you do not understand. If you choose not to participate in this study you will not be penalized or lose any benefits that you would otherwise be entitled to.

1. Name of Participant ("Study Subject"):  
______________________________________________  
(Please put your first and last name here)

2. Title of Research Study:  
Patient-Centered Culturally Sensitive Health Care and Health Promotion Project

3. Source of Funding or Other Material Support:  
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5. What you will be asked to take part in the study:  
You will be asked to fill out a set of questionnaires. Specifically, one questionnaire will ask how much you agree or disagree with statements that describe certain behaviors and attitudes as health care provider or office staff person. It will also ask you how much you agree or disagree with statements that describe the care you provide your patients. Other questionnaires will ask about your lifestyle and culture, your relations with patients, and your stress level. You will also be asked to complete a questionnaire about yourself which asks about your age, gender/sex, race, years of having any long-term health problems, and any communication problems you may have. You will also be asked to provide your name and address below for payment purposes.

Filling out all of the questionnaires should take less than one hour. Please try to complete the questionnaires by filling them out at the health care clinic or doctor’s office you attend before you leave. One of our research assistants will be at your clinic to help you fill out the questionnaires if you need any help or have any questions.
You will be paid for your participation. To see how much money is paid for participation, see Section 7 of this form.

6. **Possible Risks and Benefits:**
   We do not expect any risk to you for participating in this study. There are no known risks to completing the questionnaires. We do not anticipate that you will benefit directly by participating in this project.

7. **Compensation:**
   You will be paid $15 compensation in the form of a gift card that can be used at most stores or a money order for participating in this research. This compensation will be mailed to you at the address you provide below.

8. **Confidentiality:**
   Your identity will be kept confidential to the extent provided by law. Your name will not be placed on the questionnaires. Instead, researchers will place a code number on the surveys that you fill out. Your questionnaires will be immediately separated from any documents that may be able to identify you (like your signed informed consent form) and locked in separate filing cabinets in room 293 at the Department of Psychology at the University of Florida. Your individual responses will only be seen by the researchers who are conducting this study and only they will know whether you are participating in the study or not. Thus, your individual responses will not be shared with anyone at the clinic where you work and only the researchers will know that you have decided to participate. Also, your answers on the questionnaires will be completely anonymous.

9. **Voluntary participation:**
   Your participation in this study is completely voluntary. There is no penalty for not participating. In addition you may stop completing the questionnaires if it makes you feel uncomfortable, and you may skip any question that you do not wish to answer.

10. **Right to withdraw from the study:**
    You have the right to withdraw from the study at anytime without consequence, but you will only receive your gift card or money order once we receive your completed set of questionnaires.

**Whom to contact if you have questions about the study:**
Carolyn M. Tucker, Ph.D.
Distinguished Alumni Professor
Joint Professor of Psychology and
  Professor of Community Health and Family Medicine
Professor of Pediatrics (Affiliate)
1-352-273- 2153 or (Toll-free) 1-866-290-5770

**Whom to contact about your rights as a research participant in the study:**
University of Florida Institutional Review Board Office
Agreement:
I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant:_________________________________ Date:___________

Investigator:______________________________ Date:___________

Name and Address for Payment:
Please write your name and the address where you would like your gift card to be mailed:

Name: ______________________________________

Address Line 1: ______________________________
Address Line 2: ______________________________
City, State, Zip ______________________________

*Please place the first copy of this form in the white envelope and keep the second copy for your records.
Dear Patient:

Thank you for your interest in our research study entitled, “Patient-Centered Culturally Sensitive Health Care and Health Promotion Project.” The purpose of this study is to find out about how patients view the attitudes and behaviors of their health care providers and office staff, and to find out about how patients view the characteristics and policies of their health care centers and doctor’s offices.

Participation in this study involves completing the attached questionnaires, which should take less than one hour. The study is designed to make sure that your responses will be anonymous. Your individual information and responses will not be seen by anyone other than the researchers who are conducting this study. Also, your name will not be placed on the questionnaires that you complete. In addition you may stop completing the questionnaires if it makes you feel uncomfortable, and you may skip any question that you do not wish to answer.

Participation in this study is completely voluntary. We believe that the information you give us is very important because it may help us improve the health care that you and other patients like you may receive from health care providers.

If you decide to participate in this study, you can indicate your willingness to do so by signing the informed consent form and completing the attached questionnaires. If you would like help completing the questionnaires, you can ask a family member or friend to read them to you and record your responses on the form; however, they will not be compensated for doing so. Please keep a copy of the informed consent for yourself, and place the signed copy in the white envelope and seal it. Then place the set of completed questionnaires in the brown envelope and seal it. Please hand the two sealed envelopes to the person that approached you about participating in this study, or place it in the data collection box near the front desk. For your participation you will be mailed a $15 gift card that can be used at most stores or a $15 money order (but not both). You will receive this gift card or money order within three weeks after I receive your signed informed consent form and completed questionnaires.

If you have any questions or desire further information about this study, please call my research associates at (toll-free) 1-866-290-5770 ext. 255. If you have any concerns about this study please call the University of Florida Institutional Review Board office at (352) 846-1494.

If you agree to be a research participant, thank you for agreeing to do so.

Sincerely,

Carolyn M. Tucker, Ph.D.
Distinguished Alumni Professor
Joint Professor of Psychology and
  Professor of Community Health and Family Medicine
Professor of Pediatrics (Affiliate)
LIST OF REFERENCES


Rankins, J., Sampson, W., Brown, B., & Jenkins-Salley, T. Dietary Approaches to Stop Hypertension (DASH) intervention reduces blood pressure among hypertensive African


BIOGRAPHICAL SKETCH

Jessica Dorothy Jones was born in Fairfax, Virginia, on May 29, 1980, to Edward and Francisca Jones. Jessica was raised in Orlando, Florida, and graduated from Cypress Creek High School in May 1998. She received her Bachelor of Science degree in psychology from University of Florida in Gainesville, Florida in May 2003. Jessica was then accepted to the University of Florida’s Counseling Psychology Doctoral Program in the fall of 2004. During her studies, she received her Master of Science in psychology in December 2007 and graduated with her Ph.D. in counseling psychology on August 7, 2010. As a graduate student she worked on several community-based health care research projects, and her research interests focused on culturally sensitive healthcare with low-income and ethnically diverse primary care patients. Jessica also completed her clinical internship at Duke University’s Counseling and Psychological Services (CAPS) in Durham, North Carolina, and recently accepted the postdoctoral resident fellowship position at CAPS.