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Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

FLORIDA HEART STUDY: PSYCHOSOCIAL ADJUSTMENT OF HISPANIC HEART PATIENTS

By

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August 2001

Chairperson: Samuel F. Sears, Jr., Ph.D.
Major Department: Clinical and Health Psychology

Previous research has indicated that patients with heart disease often face psychological complications and difficulties in adjustment due to the chronic nature of their illness. However, very few researchers have attempted to examine dimensions of patient adjustment in Hispanic cardiac populations or the influence of psychosocial and cultural factors on their health outcomes. Therefore, the purpose of this study was to examine the relationship of Hispanic patient characteristics on dimensions of cardiac-related quality of life (CQOL).

The current study assessed 120 Hispanic patients diagnosed with coronary heart disease (CHD) during scheduled visits to their cardiologist. Questionnaires were administered consisting of background information, acculturation, depression, familism, fatalism, social support, and cardiac-related quality of life.
Three separate hierarchical stepwise regression analyses were conducted to examine the degree of association between the five independent explanatory variables (social support, depression, acculturation, familism, and fatalism) and each of the three dependent variables (physical functioning, emotional functioning, social functioning). All analyses controlled for patient age, gender, SES, medical severity, and time since diagnosis by entering these variables into the model first (Block I), with the psychosocial variables being entered second (Block II), followed by the cultural variables, in a stepwise manner (Block III).

An overwhelming majority of Hispanic patients (91.7%) were classified as “low acculturated,” with high levels of social support (85.8%), and moderate to high cardiac-related quality of life (84.2% to 85.8%). However, 14% to 16% of cardiac patients reported adjustment difficulties in the areas of physical (14.2%), emotional (14.2%), and social (15.8%) functioning, respectively. In addition, approximately 26% of Hispanic patients reported experiencing significant depressive symptomatology. In general, depression, high medical severity, and female gender predicted lower patient functioning across the three dimensions of CQOL. Although acculturation, was not a significant predictor of CQOL, the Hispanic cultural values of fatalism and familism had an indirect influence on patient adjustment through depression and social support, respectively.

These findings suggest that interventional programming focus on subgroups of Hispanic cardiac patients that may be at increased risk for developing depressive symptomatology and/or experience adjustment difficulties related to their heart disease. Understanding dimensions of Hispanic culture may help health care professionals in promoting quality of life in this patient population.
REVIEW OF LITERATURE

Research with Hispanic Populations

Hispanics are the fastest growing minority in the United States. Since 1980, the Hispanic population has increased 34%, while the non-Hispanic population has increased only 7%. By the year 2000, Hispanics will number an estimated 31 million, the largest minority group in the United States (Mein & Winkleby, 1998). Within the Hispanic community lies a diverse population, with the term Hispanic encompassing many different national origins and cultures. Of the 19.4 million Hispanics residing in the United States, 62.3% are of Mexican origin, 12.7% are Puerto Rican, 5.3% are Cuban, 11.5% are Central or South American, and 8.1% are of other Hispanic origin (U.S. Bureau of the Census, 1993).

Hispanic groups in the U.S. encounter many financial, educational, and cultural factors that impact their health and health care behaviors. For example, compared with non-Hispanics, Hispanics are less likely to have health insurance coverage. As a result, the uninsured are less likely to have a regular source of health care, less likely to have seen a physician within the previous year, and less likely of ever having received a complete physical examination. Consequently, this group tends to rate their own health status highly (Trevino, Moyer, Valdez, & Stroup-Benham, 1991). Aspects of Hispanic

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1 For the purposes of this manuscript the label “Hispanic” will refer to those residents of the United States who trace their family background to one of the Spanish-speaking Latin American nations or to Spain (Federal Register, 1978). However, it is recognized that this label is not universally accepted by its referents, and that alternative labels have been suggested (e.g., Latino, Latin American).
culture have also been found to influence one’s health through interpretation of symptoms, help-seeking behavior, patient compliance with health care recommendations, and adjustment to illness (Angel & Angel, 1997). One cultural construct that has been examined in Hispanic health care research is acculturation.

**Acculturation Theory**

Acculturation refers to a process of cultural learning and behavioral adaptation that takes place as individuals are exposed to a new culture (Berry, 1998; Padilla, 1995). Berry (1998) has proposed that upon contact with a new culture, individuals undergo a process of change in any or all of six areas of functioning: language use, cognitive style, personality, identity, attitudes, and stress. This process of change, or acculturation, is described by Berry as an initial stage of crisis or conflicts that is then followed by the acceptance of an adaptation strategy. In terms of language, for example, Hispanics may completely shift to English, become bilingual, or maintain Spanish as their primary language. Cultural change from both time (exposure to the dominant culture) and migration impacts Hispanics living in the U.S. today, revealing the damaging, as well as the protective, health aspects of this particular ethnic group. However, it is not necessarily the cultural change that affects health, but the extent to which cultural values, rules of behavior, and traditional ways of coping are affected (Corin, 1994).

The construct of acculturation is a frequently used, convenient, and well-established criterion for understanding and assessing intra-group cultural variance within the Hispanic population (Cuellar, Arnold, & Maldonado, 1995). The importance of acculturation as a variable that differentiates among Hispanic subgroups can be seen in the large number of studies establishing this construct as a significant modifying health
variable. Acculturation has been found to play an important role in determining the health behavior of elderly Hispanics (Marks et al., 1990), levels of social support (Griffith & Villavicencio, 1985), Hispanics’ mental health status (Burnam et al., 1987), and in the incidence of disease (Moscicki et al., 1989).

Although there have been various models of acculturation presented in recent literature (LaFromboise, Coleman, & Gerton, 1993), Keefe and Padilla (1987) present a multidimensional model that endorses the concept of selective acculturation, whereby an individual can adopt specific values, traits, and customs, while simultaneously retaining other traditional values, traits, and customs. This model represents a process similar to biculturalism – an individual’s ability to become fluent in both cultures. Therefore, this model attempts to recognize the various complexities inherent to the acculturation process and will serve as the theoretical framework for the current study.

**Acculturation Measurement**

Due to the complex nature of the acculturation process, measures of acculturation have been conceptualized in a number of different ways, taking into consideration the cultural heterogeneity of the Hispanic population. Measures of acculturation typically assess where individuals are in a process of psychosocial change that involves the adaptation to a new culture. This process includes changes in behavior, values, ethnic loyalty, social relationships, language use, and food preferences (Cuellar et al., 1980; Olmedo, 1979; Szapocznik et al., 1978). Some individuals follow patterns of language, behavior, and values close to those of their native culture, while others live a lifestyle very close to that of the host culture; a large portion of Hispanic Americans fall somewhere between these two extremes.
Language use has become one of the most objective and simple methods of quantifying and evaluating the process of acculturation in Hispanic populations, being significantly correlated with various behavioral and health indices (Negy & Woods, 1992; Sabogal et al., 1989). Nevertheless, prior studies have demonstrated that when language was used alone as a measure of acculturation, about 12% of the respondents were misclassified when compared with their scores on a multidimensional, valid and reliable acculturation measure (Marin & Marin, 1991). A developing literature suggests that an individual’s cultural values and norms (those cognitive constructs that describe people’s worldviews and interaction patterns) are a more permanent and accurate reflection of actual cultural learning (Cuellar et al., 1995; Marin, 1993). Examples of group-specific values and norms of Hispanics that could change as a function of acculturation are familism (Sabogal et al., 1987) and fatalism (Neff & Hoppe, 1993). In fact, Sabogal and colleagues (1987) demonstrated that some aspects of familism (i.e., familial obligation and perception of family as referents) change as a function of acculturation, whereas others remain stable (i.e., family support). Thus, acculturation can be measured both behaviorally and cognitively and both methods of measurement have potential contributions in understanding the influence of culture on health.

In summary, it is apparent that the definition and operationalization of acculturation has changed in research throughout the years. Currently, it has moved away from a simplistic unidimensional process (e.g., language measurement) and now emphasizes a comprehensive, multidimensional approach. Central to this new understanding of acculturation is the fact that the acculturating individual is now perceived as a person who may indeed be comfortable in both cultures and who, by
acculturating, is gaining new cultural knowledge and information rather than sacrificing previously held abilities or values. It is essential then, that future research consider acculturation as a fluid process (lifelong event) that involves many dimensions of an individual’s life (e.g., behaviors, attitudes, norms, and values) and implies growth along a continuum, a methodological approach that will be emphasized in the current study.

**Coronary Heart Disease in Hispanics**

Although most research on the health problems of American ethnic groups has been recent, studies performed during the past two decades have uncovered findings of clinical and public health importance. In particular, epidemiologic investigations of Hispanics in the United States have identified a variety of diseases that differ in frequency from those of Anglo Americans. The current literature review will consider one of these in detail – coronary heart disease (CHD). Mortality data will be presented as well as the cardiovascular risk factor profile for Hispanics across levels of acculturation.

**Coronary Heart Disease Mortality**

Despite encouraging declines in heart disease mortality rates, more people in the United States die from coronary heart disease (CHD) each year than from any other cause, accounting for 20.4% of all adult deaths (American Heart Association, 1999). The cost to the U.S. economy is over $117 billion per year (Shapiro, 1996). Coronary heart disease is caused by atherosclerotic narrowing of the coronary arteries and can result in congestive heart failure (CHF), myocardial infarction (MI), angina pectoris, cardiac dysrhythmia, conduction defects, and sudden death. Similar to its effects on the general U.S. population, CHD is also the leading cause of death among Hispanics residing in the United States, regardless of gender or country of origin (Moreno et al., 1997). In 1993,
23.9% of all deaths among Hispanics resulted from CHD (National Center for Health Statistics, 1996).

Despite extensive studies during the last decade, data regarding the incidence, prevalence, and mortality of CHD in Hispanics are limited. Until recently, most information related to CHD mortality in Hispanic populations had been limited to regional and national vital statistics data, suggesting that cardiovascular mortality in the Hispanic population was approximately 20% lower than in the rest of the Anglo-American population (Becker et al., 1988; NCHS, 1996). However, this lower trend in CHD mortality has relied on archival data and has been less clearly established in Hispanic American women (Goff et al., 1993; Wild et al., 1995). Despite the methodological limitations of prior research, results from two recent national cohort studies (National Longitudinal Mortality Study, Sorlie et al., 1993; National Health Interview Survey, Liao et al., 1997) helped verify earlier findings, demonstrating that Hispanic Americans had significantly lower CHD mortality than Anglo Americans. In addition, adjustment for differences in income demonstrated even larger disparities in Hispanic to Anglo-American mortality rates. The consistency of these findings is surprising given that the Hispanic population has a higher prevalence of several known risk factors for CHD, which will be discussed in more detail below.

**Cardiovascular Risk Factor Profile**

A less favorable cardiovascular risk factor profile has been documented in Hispanics when compared to Anglo Americans. On average, Hispanics have higher body mass indexes (Mitchell et al., 1990), more central obesity (Burchfiel et al., 1990), a higher prevalence of diabetes mellitus (Hazuda et al., 1988; Stern et al., 1981, 1984),
lower HDL cholesterol and higher triglyceride levels (Mitchell et al., 1990), and lower engagement in exercise behaviors (Burchfiel et al., 1990; Shea et al., 1991). However, cigarette smoking appears to be less prevalent (Haynes et al., 1990; Marcus & Crane, 1985), and the prevalence of hypertension is comparable to that of Anglo Americans (Burchfiel et al., 1990; Caralis, 1990).

Although many studies have assessed the association of genetic influence, SES, education, employment, and acculturation with selected cardiovascular risk factors, they have reached mixed results. It has been noted that with rising SES, higher education, and acculturation, there exist increased knowledge and less behavioral avoidance in the management of hypertension and cholesterol among Hispanics (Atkins et al., 1987). In contrast, the prevalence of cigarette smoking has increased in Hispanics of both sexes as acculturation to the mainstream culture has occurred (Perez-Stable, 1987; Sabogal et al., 1989). Finally, Hispanics with higher levels of acculturation have demonstrated increased levels of exercise (Vega et al., 1987) and decreased prevalence of both diabetes (Hazuda et al., 1988; Stern et al., 1984) and obesity (Vega et al., 1987).

It is apparent from available data that the prevalence of specified risk factors for CHD varies between Hispanics and Anglo Americans. However, it is not currently known whether such differences are primarily due to sociocultural, behavioral, or genetic factors. In addition, available data on the prevalence of these risk factors in Hispanics do not adequately explain the lower rate of CHD mortality in this population. Therefore, it is evident that more research on health knowledge, health behaviors, and patterns of health care utilization in this population is warranted. Finally, because most of the studies cited in this review have subject samples of Hispanics from circumscribed regions
of the U.S. (i.e., Puerto Rico, northern or southern California, and southern Texas), these Hispanic subjects are not necessarily representative of the Hispanics in other regions of the U.S. Therefore, the results presented are limited and should be looked upon as best estimates of population trends based upon the available data.

In summary, although the impact of coronary heart disease (CHD) is widely acknowledged in the Hispanic population, data on the incidence, prevalence, risk factors, and morbidity of CHD among this group are limited in the literature. Studies on coronary heart disease risk factors imply that compared to the Anglo-American population, Hispanics (1) have more of the risk factors attributable to the incidence and prevalence of CHD, (2) have less knowledge about CHD risk factors, and (3) engage less in heart healthy diet and exercise (Juarbe, 1996). In addition, the process of acculturation has generally been associated with decreased prevalence of CHD risk factors. Overall, the data that exist for Hispanics in the U.S. indicate that Hispanics have a lower mortality rate from CHD than do Anglo Americans (Liao et al., 1997; Sorlie et al., 1993). Nevertheless, the limited mortality information available clearly demonstrates that CHD is by far the leading cause of death among Hispanics in the United States (Derenowski, 1990; National Center for Health Statistics, 1996).

Psychosocial Factors in Heart Disease

Recent evidence has suggested that behavioral and psychosocial factors play a significant and independent role in the development of coronary heart disease (CHD) and its complications (Blumenthal et al., 1997). In addition, it has become increasingly apparent that traditional risk factors (e.g., cigarette smoking, hypertension) do not fully account for the development of CHD or for the triggering of adverse cardiac events, as
they account for approximately 40% of CHD occurrence (Marmot & Winkelstein, 1975; Muller et al., 1994). Further, a growing body of evidence suggests that psychosocial factors are important predictors of prognosis in patients following a cardiac event and, conversely, can develop as complications of CHD. The following sections present two of these psychosocial factors – depression and social support – in relation to their influence on the development and progression of heart disease in Hispanic populations.

**Depression**

**Depression in Hispanic Populations**

The most significant health problem in Hispanics immigrating to the United States may lie in the area of mental health. Hispanics entering the U.S. confront a major adaptation process that manifests in many different ways. Although many adapt well, some Hispanic Americans experience adjustment difficulties leading to depression. Depressive symptoms have been found to be significantly greater among Mexican Americans (28.9%) when compared with a cohort of Anglo-American (14.6%) and African-American (18.1%) subjects (Roberts, 1981). Rates of depression may increase among people of low socioeconomic status, decreased level of education, and low availability of social support (Frerichs et al., 1981). In general, acculturative stress, female gender, low socioeconomic level, and alcohol consumption are risk factors associated with increased Hispanic susceptibility to stress disorders and depression (Rodriguez, 1996).

The Hispanic Health and Nutrition Examination Survey (HHANES) has provided the most extensive prevalence data on depression in the U.S. Hispanic population to date (Moscicki et al., 1987). According to the HHANES study, the overall prevalence rates of
depressive symptomatology, based on the CES-D, for Mexican Americans (n = 3,555), Cuban Americans (n = 902) and Puerto Ricans (n = 1,343) were 13.2%, 10.2%, and 27.7%, respectively. Additionally, the six-month prevalence rates for major depressive episode in these populations were 2.3%, 2.2%, and 5.8%, respectively. In general, these findings are lower than earlier studies examining Mexican Americans (Roberts, 1981). Further, these findings are lower for Cuban Americans and higher for Puerto Ricans when compared to CES-D estimates for non-Hispanic populations.

Low levels of acculturation have been associated with increased psychological distress due to the initial lack of knowledge and resources available as one attempts to cope with the stress of adapting to a new culture. For example, Vega and colleagues (1984) found similar levels of depressive symptoms in Anglo Americans and English-speaking Mexican Americans, but significantly higher levels of depressive symptoms in Spanish-speaking Mexican Americans. Since language preference is generally thought to be a broad indicator of acculturation, these data suggest that the relative lack of societal integration resulting from low acculturation may account for increased psychological distress among Hispanics. Therefore, it would be expected that Hispanic heart disease patients with low social resources and consequent depressive symptoms would have more difficulty adjusting to their cardiac illness compared to their highly acculturated counterparts. As will be discussed in the following section, the manner by which individuals appraise life events and choose to cope with the process of cultural adaptation may exacerbate levels of distress.
Fatalism

Fatalism is defined as the extent to which people feel their destinies are beyond their control, reflecting the individual’s perception of low mastery and therefore influencing health outcomes through passive coping responses (Cuellar et al., 1995). Both Mexican Americans (Chandler, 1979) and African Americans (McCarthy & Yancey, 1971) have been found to be more fatalistic than Anglo Americans. Furthermore, although fatalistic attitudes are said to result in greater distress (Mirowsky & Ross, 1984), fatalism has also been interpreted as a potentially adaptive response to an uncontrollable life situation often experienced by minorities (Neff & Hoppe, 1993).

Additionally, although fatalism may imply a lack of perceived individual control, a characteristic typically associated with depression, the adverse effects of fatalism have been demonstrated to be offset by social resources, such as religious involvement and integration into the mainstream culture (Krause & Tran, 1989). For example, fatalistic attitudes have been associated with lower levels of depression for those Mexican Americans in the low and high ends of the acculturation continuum compared to those individuals not fully integrated in one culture or the other (Neff & Hoppe, 1993). These findings imply that both minimally and highly acculturated individuals may be protected from the adverse effects of fatalism – the former through integration in traditional value systems (e.g., religion, familism), and the latter through integration into the Anglo-American culture (e.g., greater language fluency). However, it is the partially acculturated or “marginalized” individual (alienated from traditional culture but not yet integrated into the dominant culture) that appears to have fewer coping resources and, consequently, higher levels of distress.
These findings point to the need for further research clarifying cross-cultural differences in fatalism in order to understand its potential as an adaptive or maladaptive coping strategy in relation to chronic medical conditions. Whether fatalistic attitudes result in greater distress, or whether fatalistic attitudes result from uncontrollable life situations that are distressful, such as chronic illness, is not presently clear. In either scenario, fatalism is believed to be associated with adjustment difficulties, particularly in chronically ill populations, and mental health problems such as depression.

**Depression and CHD**

Depression is one of the most common comorbid illnesses observed in chronic diseases. In the general population, the lifetime risk of depression is 10 to 25 percent for women and 5 to 12 percent for men (American Psychiatric Association, 1994). However, the prevalence of depression in those with chronic illnesses is much higher – 25 to 33% (Katon & Sullivan, 1990). Depression is a common but frequently underdiagnosed and undertreated psychiatric illness in patients who have CHD, with less than 25% of patients with depressive symptomatology diagnosed as depressed by their cardiologist and only about half of those patients receiving treatment (Carney et al., 1995). The presence of comorbid medical conditions may complicate the assessment of depression by masking or mimicking symptoms of depression. This phenomenon is particularly apparent in Hispanic patients where depressive symptoms may be manifested in somatic terms (Angel & Guarnaccia, 1989; Katon, Kleinman, & Rosen, 1994). Approximately 20% to 40% of patients with CHD exhibit depressive symptoms, with 18% meeting criteria for current major depression (Carney et al., 1995). In addition, there is evidence that 50% of post-MI patients with major depression either remain depressed or relapse within 12
months and that 42% of patients with minor depression subsequently develop major depression (Hance et al., 1996). These data demonstrate that significant depressive symptoms and episodes of major depressive disorder are common findings in patients during the post-MI period and, if left untreated, minor depression is likely to progress to major depression, rather than to remit, over the course of 12 months post-MI.

Recent research has clearly documented that increased levels of depressive symptomatology adversely affect the prognosis of cardiac illness in patients following a cardiac event through interference during the recovery period, increased mortality, and diminished patient quality of life. Depression in CHD patients has been associated with high medical care utilization, amplification of somatic symptoms and disability, poor self-care and adherence to medical regimens, and increased morbidity and mortality from their medical illness (Katon & Sullivan, 1990). Specifically, studies have demonstrated that patients who meet criteria for major depressive disorder following myocardial infarction (MI) are at increased risk of recurrent cardiac events (Barefoot & Schroll, 1996; Frasure-Smith et al., 1995) and are 5 to 6 times more likely to die during the ensuing 6 months even after controlling for other prognostic risk factors (Frasure-Smith et al., 1993). Further, the combination of CHD and depressive symptomatology has been associated with roughly twice the reduction in social functioning associated with either depression or CHD alone (Wells et al., 1989). In addition, the prevalence of depression has been reported to be at least twice as high among women as men with CHD, which may help to explain why the mortality rate following MI is higher in women than in men (Carney et al., 1995; Kessler et al., 1994). Together the available observations indicate that depression is a risk factor for poor prognosis in patients with heart disease, affecting
several areas of patient adjustment. Therefore, appropriate treatment for depression in heart disease patients is important in light of its high prevalence and negative effects.

Depression in Hispanic CHD Populations

Surprisingly, few studies adequately describe their samples with regard to basic demographics (gender, ethnic identity, SES, marital status) and medical status when presenting research findings related to comorbid depression in CHD populations (Hill et al., 1992). In addition, the vast majority of studies reviewed above have been conducted primarily in Anglo-American adult male samples, which points to the tremendous need for research with women, minorities, and children in this area of study. Given that depression is a common finding in patients following a cardiac event, Hispanic CHD patients may experience added difficulties with medical adjustment due to specific acculturative stressors (e.g., language barriers, lack of economic resources, limited knowledge of available services), which may thereby increase their risk of exhibiting depressive symptoms. Additionally, low emotional support from extended family relationships among Hispanics might enhance the mental health impact of CHD in this patient population.

Although there have been few studies examining the relationship between depression and CHD in Hispanic populations, Nanjundappa and Friis (1985) examined the interrelationship of diabetes and depressive symptoms in a sample of 56 Mexican and Anglo-American patients. Results indicated that nearly 70% of Mexican-American diabetes cases (17 of 22) presented with depressive symptomatology as measured by the CES-D (score of 16 or higher). In addition, Mexican-American ethnicity, non-employment status, and lack of social support were found to predict depression in this
A more recent study investigated the relationship between the presence of angina and depressive symptoms in 1,558 Mexican-American women (n = 98 with angina) participating in the HHANES study (Portillo et al., 1995). Mexican-American women with angina were found to have significantly higher symptoms of depression compared to those without angina (11.5 vs. 9.0, p < .05). Furthermore, functional impairment, not being married, and poverty were significantly associated with higher ratings of depression, with functional impairment having a stronger association with depressive symptoms than angina or physical inactivity.

These findings point to the importance of social isolation and economic necessity as risk factors for the development of depressive symptoms in Hispanic cardiac populations. Furthermore, the results of these studies establish the saliency of the acculturation process in patient adjustment to chronic illness. Mexican Americans are likely to experience greater social and economic stressors in relation to cultural adaptation as immigrants to the U.S. experience detachment from previously established social networks and family relationships. Consequently, effective health seeking behaviors may be further complicated by restricted knowledge of public resources, low socioeconomic status, language barriers, and external attributions to mental health problems.

Although these results provide some information on previously nonexistent data regarding rates of depression in Hispanic patients with heart disease, the results should be interpreted with caution. For instance, the focus of these two studies on Mexican Americans limits the utility and generalizability of the results to other Hispanic samples diagnosed with heart disease. In addition, patients with other manifestations of heart
disease, such as heart failure, or in a more severe stage of their heart disease may present with a varied clinical presentation of depression. Nevertheless, these findings demonstrate that depression is highly prevalent in Hispanics with chronic medical conditions, reflecting the need for psychosocial interventions and further research in this patient population.

In summary, the findings presented indicate (1) the prevalence of depression in the U.S. Hispanic population is similar or higher to that of the general population, (2) the prevalence of depression varies across Hispanic subgroups, level of acculturation, SES status, and gender, (3) the cultural construct of fatalism has been associated with depression in Hispanic populations, varying as a function of acculturation and having potential to increase our understanding of adjustment difficulties in chronically ill populations, (4) depression is a common comorbid illness in patients with CHD and it is a risk factor for poor prognosis in these patients on multiple levels, and (5) data on comorbid depression in Hispanic patients with CHD are virtually nonexistent and point to the need for studies examining this area of research.

Social Support

Social Support in the Hispanic Population

Social support among Hispanics has been traditionally studied from an extended family perspective. Social support systems, levels of stress, and psychological dysfunction (in particular, depression) among Hispanics have suggested that the buffering role of social support in the stress-illness paradigm can be generalized to this population (Salgado de Snyder & Padilla, 1987). More recent research in the social support literature has emphasized that quality more than strictly quantity is the support variable
that protects people in crisis (Sherbourne & Stewart, 1991). Furthermore, among Hispanic immigrants, adequate social support seems to facilitate cultural adaptation and the development of successful coping strategies.

Whether an extended family system functions as a source of support or as a source of stress depends also upon the needs of the individual. In the case of second- and third-generation Hispanics, reliance upon this system would depend upon the person’s self-directed or group-oriented problem solving and coping strategies (Keefe et al., 1979). In their investigation of suburban Mexican Americans in Southern California, Griffith and Villavicencio (1985) found that more acculturated (English-speaking) Mexican Americans, when compared with less acculturated (Spanish-speaking) Mexican Americans, relied less on their extended family network despite having larger numbers of persons in the network who could be relied upon. Whereas the less acculturated Mexican Americans relied most on available primary and extended family for emotional support, the more acculturated Mexican Americans sought help from friends, neighbors, clergy and church members (Cervantes & Castro, 1985). These findings support the general view that, with greater acculturation, Hispanic Americans may develop large social networks, yet they become less dependent upon members of their extended kinships for social support. However, in the case of recent U.S. immigrants, they may often have fewer friends or family members in the U.S., thereby facing increased risk for mental health problems and difficulties accessing health care necessary for proper management of chronic illnesses, such as heart disease.
Social Support and CHD

The presence of social support has been suggested to offer a protective effect with respect to coronary heart disease (CHD) morbidity and mortality through increased adherence to medical therapies and lifestyle recommendations, and mitigating the potentially damaging effect of negative emotional interactions (Krumholz et al., 1998). Several large-scale epidemiologic studies have found significant associations between low levels of social support and increased cardiovascular mortality (Berkman & Syme, 1979; Blazer, 1982; House et al., 1988). Other studies have reported low levels of social support to be related to various manifestations of CHD, including higher prevalence rates of angina pectoris (Medalie & Goldbourt, 1976), myocardial infarction (Case et al., 1992; Ruberman et al., 1984), and cardiac death (Krumholz et al., 1998). Based on this evidence, some researchers have begun to examine whether social relationships improve health by modifying health-related behaviors and physiological processes (Cohen, 1988).

There are a number of possible mechanisms responsible for these observed effects. Positive social influences might be particularly beneficial during times of stress, when people abandon healthy habits (e.g., diet, exercise, health monitoring) and engage in risky behaviors (e.g., excessive consumption of nicotine, alcohol, or narcotics), by providing positive health role models and reinforcing healthy behaviors, thereby preventing health problems (Umberson, 1987). These associations do not appear to be due to factors such as age, SES, or race (Forster & Stoller, 1992; Hanson et al., 1990; Orth-Gomer et al., 1993). In addition, behavioral or traditional risk factors (e.g., smoking habits, body mass, physical disability, cholesterol) alone do not appear to explain these results (House et al., 1988).
Social Support and Depression

Social support has also been suggested to provide a buffering effect in the manifestation of depression. For example, Briones and colleagues (1990) found direct associations between levels of stress and depression and between support networks and depression, such that individuals with more life stressors had higher rates of depression; however, support networks were found to mitigate the influence of stress by decreasing rates of depression. In addition, investigators have begun to examine low social support as an additional determinant of depression after hospitalization for CHD (Holohan et al., 1995, 1997; Oxman et al., 1994; Shumaker & Czajkowsk, 1994; Yates, 1995). For example, Oxman and Hull (1997) found that perceived adequacy of support one month after surgery was associated with less depression at six months in a sample of elderly CHD patients. The clinical implications of these findings are enhanced by results indicating that both depression (Barefoot, 1997; Frasure-Smith et al., 1993) and social support (Berkman, 1995; Orth-Gomer et al., 1988; Ruberman et al., 1984; Williams et al., 1992) are repeatedly shown to predict survival in CHD patients. There are two possible mechanisms to explain their additive effects. Specifically, these psychosocial risk factors have been linked to increased sympathetic nervous system arousal (Williams & Littman, 1996) and an increase in health-damaging behaviors (e.g., smoking) that could have an impact on prognosis, particularly increasing the risk for those individuals possessing one or more of these psychosocial risk factors (Barefoot et al., 1995; Kaplan, 1995; Williams et al., 1997).
Familism

Familism is considered to be one of the most important culture-specific values of Hispanics. Multiple investigators have emphasized the significance of the family as a major source of identity, self-worth, and social support for most Hispanic Americans (Aranda & Knight, 1997; Cervantes & Castro, 1985). The importance of the centrality of the family (nuclear and extended) in terms of having strong feelings of loyalty, reciprocity, solidarity and attachment among members has been documented as a distinct and enduring characteristic among several Hispanic subgroups (Cortes, 1995; Marin, 1993; Sabogal et al., 1987). To date, the concept of familism has been operationalized to represent at least two different dimensions: attitudes and behavior (Marin, 1993; Rodriguez & Kosloski, 1998). The attitudinal aspect includes the beliefs and attitudes Hispanics share regarding the family and their feelings of loyalty and solidarity. The behavioral component focuses on the specific behaviors associated with those feelings.

Familism among Hispanics has been proposed as a possible explanation for ease of adaptation for some immigrants coming to the U.S., as well as for the relatively better mental health profile of Hispanics as compared to non-Hispanic populations (Keefe, Padilla, & Carlos, 1979). The Hispanic family has been described as an emotional support system in which members can find help on a regular basis and are protected from external physical and emotional stressors, thereby facilitating healthy psychological adjustment (Cohen, 1979; Valle & Martinez, 1980).

Although the importance of familism is evident, various authors have proposed that familism and other central Hispanic values are changing due to acculturation, urbanization, migration, and increasing contact with the U.S. mainstream culture (Cuellar
et al., 1995; Garza & Gallegos, 1985; Rodriguez & Kosloski, 1998). For example, Sabogal and colleagues (1987) investigated various dimensions of familism and acculturation among three subgroups of Hispanics (Mexican-, Cuban-, and Central-Americans). Despite differences in the national origin of Hispanics, subjects reported similar attitudes toward the family indicating that familism is a core characteristic in the Hispanic culture. In addition, three basic dimensions of familism were found: familial obligations, perceived support from the family, and family as referents. Of these three dimensions, familial obligations and the perceptions of the family as referents appeared to diminish with higher levels of acculturation; however, the perception of family support was not affected across acculturation levels, suggesting that perceived family support is the most distinctive and stable dimension of Hispanic familism.

Together, these findings suggest that social support serves as a “protective buffer” in the stress-illness paradigm, particularly with respect to CHD, depression, and ease of cultural adaptation. Additionally, although low social support has been identified as an independent risk factor for poor prognosis in patients with CHD, the additive effects of depression and low social support can place the individual manifesting both these psychosocial risk factors at increased risk for cardiovascular morbidity and mortality. Finally, social support in Hispanics has been extensively studied through the cultural construct of familism - examining its role as a source of ethnic identity and social support on mental health outcomes and cultural adaptation. Although aspects of this core value have been shown to vary across levels of acculturation, it is a potentially valuable construct in examining physical and mental health functioning in Hispanics with heart
disease, serving an adaptive role in cardiac patient adjustment and various dimensions of quality of life.

**Health-Related Quality of Life**

Health-related quality of life (HQOL) is a multidimensional concept that characterizes an individual’s entire well being and includes psychological, social, and physical dimensions (Aaronson, 1988). Assessments of HQOL help characterize the psychosocial functioning and day-to-day experiences of patients with chronic medical conditions or those recovering from invasive medical procedures. The patient profiles obtained along these multiple dimensions can then be compared across different disease, gender, ethnic, and sociodemographic groups. Therefore, psychosocial profiles of different patient groups and subgroups allow for a better understanding of the effects a disease has on daily functioning and psychosocial adjustment. Data on moderators of HQOL, such as social support, personality characteristics, and sociocultural influences, can be used to identify psychosocial factors that are associated with more favorable HQOL profiles. This information potentially can be used by researchers to test the effects of interventions or to enhance psychosocial adjustment for those living with chronic medical conditions, such as coronary heart disease, by illustrating the daily challenges and psychosocial issues faced by these patients. Finally, health care providers may use the information to select treatment options that address clinical and psychosocial needs of specific patient groups. The following sections review factors associated with patients’ psychological adjustment to their heart disease, as well as the role of acculturation in the psychosocial functioning and health status of Hispanic populations.
Psychosocial Adjustment to Heart Disease.

Psychologically, as well as physiologically, the heart is crucial to one’s identity and social function. It is not surprising, therefore, that normal, emotional reactions to the development of heart disease often include aspects of shock, fear, anger, guilt, sadness, and grief. The onset of cardiac illness comes as an injury that can affect one’s self-esteem from many perspectives. Many patients are forced to confront issues of dependence on others and loss of control, as well as face a less contributing role in support of their families (Shapiro, 1996). In addition, sexual functioning may be adversely affected by circulatory impairment, ischemia, medication, or by fear and other emotional factors, contributing to a further loss of self-esteem that in turn may exacerbate further decline and complicate adjustment and recovery (Quadagno et al., 1995). Finally, the issues of progression of disease, recurrence of acute illness, and death are universally present for heart disease patients and may be met with reactions ranging from denial to adverse psychological sequelae, such as anxiety or depression (Brummett et al., 1998; Kubzanksy et al., 1998; Littman, 1993).

For men and women who survive CHD events, the physical and psychosocial sequelae of CHD can be significant, requiring long periods of recovery and, in some cases, resulting in long-term functional, social, and emotional deficits. HQOL data from NHLBI studies have highlighted the existence of gender-specific psychosocial profiles for CHD patients, with women showing poorer psychosocial functioning than men even after controlling for age, severity of disease, and comorbidities (Shumaker & Czajkowski, 1993). These findings suggest that disparities in psychosocial functioning may be related to gender differences in societal role functioning (i.e., women are more likely to be
caregivers and may experience multiple role demands to a greater extent than men, which may result in greater stress and poorer functioning). Data also suggest that healthy women are more likely to be depressed than men (Nolen-Hoeksema, 1990), and social isolation may be a more common experience for women, especially elderly women, given their relatively longer lifespans (Berkman, Vaccarino, & Seeman, 1993).

Given the complicated nature of heart disease and its debilitating impact on areas of physical and psychosocial functioning, studies have attempted to identify sociodemographic, psychological, and cultural factors that influence health outcomes in this patient population (Kinney et al., 1996). Socioeconomic status (SES) has been demonstrated to be one of the most robust predictors of mortality and disease progression in patients with CHD (Marmot & Smith, 1997; Williams et al., 1992), as well as for both behavioral and subjective measures of health and well being (Chamberlain, 1997; Marmot et al., 1991). A strong association with all-cause mortality has been observed regardless of whether SES is measured in terms of occupation, income, or education (Adler et al., 1994; Carroll et al., 1996), and this association has been demonstrated for women as well as men (Ginn & Arber, 1989). Mechanisms for this relationship include CHD risk-developing lifestyle, inadequate access to services or health education, low social support, high levels of stress, and inadequate coping skills (Rodriguez, 1996). In Hispanic populations, an important correlate of SES, acculturation, is frequently unaccounted for in many studies examining health status and psychosocial functioning. A significant positive relationship has been demonstrated between acculturation level and SES, suggesting that highly acculturated individuals come from backgrounds with higher standards of living and better education (Negy & Woods, 1992). However, it remains
unclear whether being more acculturated facilitates integration into the mainstream culture, which could result in better living standards and education, or whether higher SES facilitates becoming more acculturated. It is also likely that these two possibilities are simultaneously influential. Despite evidence linking economic and cultural factors to disease progression, few studies have focused on identifying the underlying psychological, social, and structural processes that account for these relationships.

**Acculturation and Health-Related Quality of Life**

Limited research has compared the well-being and functioning of patients from different ethnic backgrounds with chronic medical conditions. Given that ethnic differences in attitudes, beliefs, and behavior have been reported on health-related issues such as cigarette smoking (Marin et al., 1990), cancer (Perez-Stable et al., 1992, 1994), self-rated health status, and well-being, other outcomes may also differ by ethnicity through different dimensions of acculturation. Previous research among Hispanic groups has suggested that self-rated health status is related to acculturation, income, language proficiency, and years residing in the U.S. (Angel & Angel, 1992; Markides & Lee, 1991; Seijo et al., 1991). Therefore, studies examining the relationship between ethnicity and acculturation on self-rated health and global functioning are important in light of their influence on medical management of disease, utilization of health care resources, and health outcomes.

The first researcher to conduct a study specifically designed to investigate the relationship between acculturation and functional capacity was Ailinger (1989). In this study, 152 elderly Hispanic immigrants were administered the Multidimensional Functional Assessment Questionnaire (MFAQ; George & Fillenbaum, 1985), which was
designed to assess the functional status of elderly adults on five dimensions: social, economic, mental health, physical health, and activities of daily living (ADL).

Acculturation was estimated by years of residence in the U.S. Results indicated that of the five functional areas, social functioning (54%) and economic resources (73%) were the most impaired. As education increased, social and economic functioning improved, as did mental health. Longer residence in the U.S. was related to better economic resources ($r = -.52$, $p < .001$) and higher cumulative functional scores ($r = -.29$, $p < .001$).

In a 5-year follow-up of this subject sample ($n = 76$; Ailinger et al., 1993), years of residence in the U.S. remained related to economic resources ($r = .34$, $p < .05$). In general, functional ratings assessed at Time 1 were the strongest predictors of 5-year follow-up ratings. The authors concluded that the Hispanic immigrant sample under study was functioning well in the community without much change in their status over time. In terms of acculturation, this sample had been residing in the U.S. an average of 14 years at 5-year follow-up, indicating that they had immigrated from their homeland while in their 50s and still able to work. The authors suggested that this group was more likely to remain in a stable state over time, given that they had been able to deal with the adjustment of a major relocation during middle age. However, it is important to take into account that the sample at Time 2 was of survivors only, a group who by definition has certain strengths.

Health status and acculturation were also investigated in a large sample ($n = 1012$) of Hispanic and non-Hispanic white adults (Shetterly et al., 1996). In this study, participants rated their health on a continuous scale of “excellent” to “poor,” and completed a self-constructed measure of acculturation consisting of English proficiency,
circle of friends, and value orientation. In general, no large ethnic differences were observed in factors that influence self-reported health (e.g., illness, medications, hospitalizations). However, Hispanics (both mono- and bilingual) were 2.2 times more likely than non-Hispanic whites to report fair or poor health, even after controlling for socioeconomic factors. In addition, highly acculturated Hispanics rated their health similarly to non-Hispanic whites, while low acculturated Hispanics remained two to three times more likely to report fair or poor health compared to non-Hispanic whites. These researchers concluded that, as a group, traditionally oriented Hispanics may have reported lower health ratings due to the experience of somatic symptoms that may not have been fully captured by their measures of physical illness or affect.

Tran and colleagues (1996) conducted a path analysis to investigate the relationship of acculturation, stress, health status, and psychological distress among elderly Hispanics. Their study consisted of a national-area probability sample of Mexican-American, Puerto Rican, and Cuban elderly (n = 2019). Participants completed Bradburn’s affect balance scale and measures of social and family/personal stress, self-reported health status, and physical limitations to examine physical and emotional adjustment patterns within this population. Education and English proficiency served as indicators of acculturation. The overall model explained 29% of the total variance in psychological distress. Acculturation had a significant effect upon health status, such that less acculturated respondents (i.e., low levels of education and English proficiency) were found to experience higher rates of self-reported health problems compared to those with higher levels of acculturation (education, $DE = .09$; English proficiency, $DE = -.10$;
The findings also suggest that the existence of health problems contributed, both directly and indirectly, to higher levels of stress and psychological distress. One interpretation provided by the authors is that those elderly Hispanics who are less acculturated tend to experience difficulties in accessing health care because they have fewer language skills and lower levels of education. The lack of access to medical care may lead, in turn, to their tendency to perceive themselves as subject to certain health-related problems. This interpretation is supported by a previous study, which found that language barriers and lack of education were associated with difficulties in accessing medical care (Siddharthan & Sowers-Hoag, 1989).

In a more recent study, Perez-Stable, Napoles-Springer, and Miramontes (1997) examined 226 Hispanic and non-Hispanic white patients with hypertension or diabetes to compare the effect of ethnicity and language concordance with their physician on health outcome measures, use of health-care services, and clinical outcomes. Patients completed the SF-36 and a general measure of health-care satisfaction in order to examine the association between ethnicity and language concordance on perceived physical and emotional well being and health-care satisfaction. Among the 73 (66%) Hispanics who responded in Spanish, 44 (60%) were followed by clinicians who spoke Spanish (language concordant), and 29 (40%) were followed by non-Spanish speaking clinicians (language discordant). Results indicated that Hispanic patients reported a better health outlook ($D = 10.3$, $p < .01$), less health distress ($D = -9.0$, $p < .05$), and fewer days interfered with by pain ($D = -14.1$, $p < .05$) than non-Hispanic white patients. In addition, having a language concordant physician was associated with higher perceived physical functioning ($R^2 = .32$, $p < .05$), better psychological well-being ($R^2 = .20$, $p$
<.01), better overall perceptions of health ($R^2 = .26$, $p < .05$), and less pain interference in daily activities ($R^2 = .23$, $p < .05$). These results are consistent with other studies showing language concordance between patient and physician to be associated with increased compliance (Manson, 1988), greater patient-physician communication (Seijo et al., 1991), and better patient care (Todd et al., 1993).

**Methodological Critique**

In review, these four studies offer evidence to suggest that the process of acculturation influences psychosocial adjustment and health-related quality of life in Hispanic populations. However, the literature related to patient adjustment is clearly in its beginning stages, and appears to have only just begun to emerge over the last decade. Consequently, many methodological flaws currently exist in the literature. Of primary importance, most of the research conducted in this area has been limited in the manner that acculturation is operationalized. For example, three of the four studies reviewed utilized behavioral indices of acculturation (i.e., language proficiency, length of U.S. residency, education) to best estimate the influence of cultural adaptation on perceived health status (Ailinger, 1989; Perez-Stable et al., 1997; Tran et al., 1996). The inherent problem in this approach to measurement is that these proxy measures of acculturation exclude cognitive components, such as cultural values and belief systems, which are highly important and representative of acculturative change. In addition, these proxy measures are largely used as criterion variables in the validation of developed acculturation scales. Therefore, problems arise when validation criteria are used as measures rather than as correlates of acculturation (Marin, 1992). As discussed earlier, when a single index of acculturation is utilized to capture aspects of a multidimensional
construct, individuals are often misclassified. For example, recent Hispanic immigrants may have high levels of education although their level of acculturation is relatively low.

The literature has also been enveloped with the use of non-standardized assessment measures of functional status and inconsistent operationalization of psychosocial constructs. Two of the studies reviewed (Shetterly et al., 1996; Tran et al., 1996) relied upon single-item measures to make conclusions regarding patient functioning, rendering results more difficult to interpret meaningfully. Studies such as these may provide a narrow, perhaps inaccurate picture on the psychosocial adjustment and quality of life of Hispanic populations as they are designed to measure only a single aspect of health status (Chwalow, 1995). Another serious problem with the literature has been the limited attempt of these studies to control for disease severity on outcomes of perceived physical and psychosocial functioning. Disease severity has been empirically shown to influence differences in utilization of health care services, mortality rates, and functional status outcomes (Greenfield et al., 1995). Consequently, two studies attempted to control for physical health status through subject reports of chronic illness, prescription medications, and hospitalizations (Ailinger, 1989; Shetterly, 1996); however, multimodal indicators of health status (e.g., physician rating, physiological markers) would more adequately address the inherent problem of relying solely on self-report methodology. To date, there have been few studies examining the relationship of acculturation and health outcomes in chronically ill patient populations, particularly heart disease (Perez-Stable et al., 1997). As such, inferences about the unique impact that the acculturation process has on the psychosocial functioning of Hispanic patients with heart disease are limited. Further, the additive effects of psychological and social factors may
result in strong associations with acculturation on the perceived health status and functioning of Hispanic populations, particularly when combined with other influencing factors common to medically-ill patient populations (e.g., co-morbid medical diagnoses, declines in general health).

In summary of the literature to date, the following conclusions can be made: (1) investigators in the field of HQOL research have only begun to systematically examine the unique nature of acculturation in relation to the psychological adjustment of Hispanic patients with chronic medical illnesses; (2) studies examining various health indices have demonstrated a strong positive relationship with acculturation, independent of ethnicity and socioeconomic factors, such that highly acculturated individuals report higher overall functioning; (3) prospective studies of self-rated health demonstrate no change in functional status over time; and (4) the majority of existing research contains serious methodological limitations, such as subject selection biases, poor control of medical variables, and the use of non-standardized assessment measures, accentuating the need for more culturally sensitive and comprehensive assessments in Hispanic patient populations.

Aims of the Current Study

Given the chronic and debilitating nature of coronary heart disease (CHD), it is not surprising that some individuals experience difficulties in adjustment as well as psychological complications secondary to their medical condition. Psychosocial factors, such as depression and social isolation, have been empirically related to the development, clinical expression, and prognosis of CHD. However, most of these studies have been conducted with primarily Anglo-American samples, despite evidence demonstrating high
mortality from CHD and increased prevalence of both traditional and psychosocial risk factors in Hispanic populations.

Recent studies have attempted to characterize the daily functioning and psychosocial adjustment of Hispanics residing in the U.S. by examining the manner by which acculturation, or level of cultural integration, influences quality of life outcomes. Acculturation may impact Hispanic heart disease patients through its influence on patient-physician communication, reliance on family support systems, health care utilization, passive or fatalistic interpretations of illness, and disease prognosis via depression and social support. However, to date, culturally sensitive and theoretically based studies assessing Hispanic patient adjustment to CHD are nonexistent.

In response to these deficits in the CHD literature, the current investigation seeks to examine the psychosocial adjustment of Hispanic cardiac patients. The current study has the following objectives: 1) report the incidence of depression, degree of social support and cardiac-related quality of life (CQOL) in this patient population; 2) examine factors unique to Hispanic culture (i.e., acculturation, familism, fatalism); and 3) investigate these psychosocial and cultural dimensions as predictors on three specific domains of cardiac patient functioning (i.e., physical, emotional, social), while controlling for age, gender, SES, medical severity, and time since cardiac diagnosis.

Hypotheses

The following hypotheses are made about the predictive models tested: 1) It is expected that women, cardiac patients with a lower SES, who are presenting with high levels of medical severity, depressive symptomatology, and fatalistic beliefs will display lower levels of physical, emotional, and social functioning; and 2) older Hispanic cardiac
patients, who have lived with their cardiac diagnosis for a long period of time, and presenting with high levels of social support, acculturation, and familism will display higher levels of physical, emotional, and social functioning. These study findings are expected to help health care providers and family members identify common patterns of psychosocial adjustment and factors associated with more favorable quality of life outcomes in Hispanic cardiac patients.
METHOD

Participants

One hundred and thirty Hispanic cardiac patients visiting a cardiology clinic in south Florida were approached for this study. Subject involvement was voluntary and no compensation was offered for their participation. In order to be admitted into the study, participants were required to meet the following inclusion criteria: 1) be at least 18 years of age, and 2) have a primary diagnosis of coronary heart disease, consisting of coronary artery disease (CAD) with or without cardiomyopathy. Following their appointment with the cardiologist, patients were asked to participate in a brief clinical interview consisting of several assessment measures. The clinical interview materials were presented to participants in either English or Spanish, based on patient preference. Participants were told that all responses would be confidential and to ensure anonymity, subject numbers were used to identify each patient’s responses. The Institutional Review Board (IRB) at the University of Florida Health Science Center approved this study and all procedures for ethical research were followed.

Of the 130 patients approached for the study, 10 (7.7%) declined to participate, resulting in a total sample size of 120. Non-participants were not significantly different from study participants in relation to age or gender. Of the 120 participants, the majority were male (70.8%), with a mean age of 65.9 years (range 37 to 91), covered under some form of health insurance (99.2%), and having had an 8th grade education or less (42.5%).
The sample was predominantly Cuban-American (71.7%), Catholic (85.8%), and married (71.7%), with 43.4% of participants having retired from their previous employment and residing in the U.S. an average of 28.1 years (SD = 13.9). One hundred percent of participants requested that the clinical interview be conducted in Spanish and 75.0% identified themselves as “Purely Hispanic” on a one-item Ethnic Identity Scale.

Participants reported delaying the use of health care services an average of 28.8 days (SD = 99.1) after first noticing symptoms related to their heart disease and visiting their doctor an average of 4.4 times in the past six months (SD = 4.1). The majority of Hispanic cardiac patients had a primary diagnosis of coronary artery disease (64.2%), a New York Heart Association (NYHA) class II (54.8%) with a mean left ventricular ejection fraction (LVEF) of 45.7% (range 15 to 70), and averaged 5.7 years (range 1 month to 27 years) since the time of their initial diagnosis. In addition to LVEF, Hurst and colleagues (1999) have recommended that the NYHA’s classification of cardiovascular disease be utilized as an index of medical severity to comprehensively examine the nature and course of one’s heart disease. NYHA class takes into account the etiology, anatomy, physiology, functional classification, and objective assessment for each patient. Therefore, LVEF and NYHA class will also be analyzed for comparison purposes. Descriptive statistics for demographic data are presented in Table 1.

Cardiac Risk Factor Profile

Table 2 presents the cardiovascular risk factor profile for the current study sample of Hispanic cardiac patients. The sample was predominantly sedentary, with 45.8% reporting no exercise activity. Further, 64.2% of patients were either current or past smokers. The majority of study participants had a history of hypertension (77%),
valvular heart disease (51.3%), angina (95.8%), and hypercholesterolemia (57.1%). In addition, a large proportion of patients had experienced a myocardial infarction (52.5%), arrhythmia (48.3%), and were diagnosed with diabetes mellitus (30.2%).

Measures

During patient assessment, the following instruments were administered:

(1) Background Questionnaire (see Appendix A), (2) Center for Epidemiological Studies-Depression (see Appendix B), (3) Familism Scale (see Appendix C), (4) Fatalism – Mastery Scale (see Appendix D), (5) MacNew Quality of Life After Myocardial Infarction Questionnaire (see Appendix E), (6) Medical Outcomes Study – Social Support Survey (see Appendix F), and (7) Short Acculturation Scale for Hispanics (see Appendix G). The Spanish-versions of these measures have been translated and utilized in prior studies examining Hispanic populations. Presented below, in alphabetical order, is a detailed description of each of the primary assessment measures that were administered in the current study.

Background Questionnaire

A custom designed questionnaire was used to gather demographic information on all study participants, including age, sex, socioeconomic status, Hispanic background, years residing in the U.S., and ethnic identity. Socioeconomic status (SES) was calculated utilizing the four-factor Hollingshead index (Hollingshead, 1975). In addition, this questionnaire contains specific information related to health status, risk factors for heart disease (i.e., exercise, smoking, and drinking patterns), and health care utilization. Information related to each patient’s cardiac history (e.g., NYHA class, LVEF, cardiac risk factors) was collected from his or her available medical records.
### Table 1

Demographic characteristics of study participants

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<td><strong>Age</strong></td>
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<td><strong>Employment Status</strong></td>
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<td><strong>Cardiac Diagnosis</strong></td>
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<td>Under 55</td>
<td>19</td>
<td>15.8</td>
<td>Employed full-time</td>
<td>37</td>
<td>30.8</td>
<td>CAD</td>
<td>77</td>
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<tr>
<td>55-64</td>
<td>40</td>
<td>33.3</td>
<td>Employed part-time</td>
<td>5</td>
<td>4.2</td>
<td>CAD &amp; Cardiomyopathy</td>
<td>37</td>
<td>30.8</td>
</tr>
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<td>65-74</td>
<td>29</td>
<td>24.2</td>
<td>Not employed</td>
<td>9</td>
<td>7.5</td>
<td>CAD &amp; CHF</td>
<td>4</td>
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<td>Retired</td>
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<td>43.3</td>
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<td>Unskilled Laborers</td>
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<td>Semiskilled Workers</td>
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<td>2 – 4 years</td>
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<td>30% or less</td>
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<td>31 – 40%</td>
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<td>Married</td>
<td>86</td>
<td>71.7</td>
<td>Partly Hispanic &amp; Anglo-American</td>
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<td>41 – 50%</td>
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Table 2

Cardiovascular risk factor profile of study participants

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<th>Factor</th>
<th>n</th>
<th>%</th>
<th>Factor</th>
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<td>Exercise Frequency</td>
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<td>&gt; Once a day</td>
<td>3</td>
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<td>Extremely Vigorous</td>
<td>4</td>
<td>3.3</td>
<td>Current Smoker</td>
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<td>10.8</td>
<td>Male &gt; 45</td>
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<td>68.3</td>
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<td>4-7 times/week</td>
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<td>Somewhat Vigorous</td>
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<td>Past Smoker</td>
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<td>53.4</td>
<td>Female &gt; 55</td>
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<td>Not Very Vigorous</td>
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<td>Family Hx of CAD</td>
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<td>66.7</td>
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Center for Epidemiologic Studies-Depression Scale (CES-D: Radloff, 1977)

The CES-D is a 20-item, self-report questionnaire containing several of the common affective and somatic symptoms of depression. The respondent is asked how often he/she has experienced these symptoms during the past week, ranging from 0 (less than 1 day) to 3 (5-7 days). The total possible score ranging from 0 to 60 reflects both the number of symptoms reported and their duration. Higher scores reflect greater severity of depressive symptomatology. A cut-off score of 16 is used for the initial screening for a possible diagnosis of a depressive disorder. However, a cut-off score of 27 has also been suggested to provide the optimal combination of sensitivity and specificity to detect depressive symptoms in medical populations. Consequently, 16 was used as the standard cut-off score and 27 as the stringent cut-off score for this study. This questionnaire is designed to be an epidemiologic instrument to measure the degree of depressive affect in community samples; it does not provide a diagnostic criterion for depression. The CES-D has demonstrated adequate internal consistency and test-retest reliability in general populations (Radloff, 1977; Radloff & Locke, 1986; Weissman et al., 1977) as well as in Mexican-American, Puerto Rican, and Cuban-American populations (Guarnaccia et al., 1989). Cronbach’s alpha for the current study was .89 and is consistent with previous estimates (Zich, Attkisson, & Greenfield, 1990).

Familism Scale (Familism: Sabogal, Marin, & Otero-Sabogal, 1987)

The Familism scale is a 13-item, self-report measure comprised of three factors: (1) Familial Obligations (respondents’ perceived obligation to provide material and emotional support to the members of the extended family), (2) Perceived Support from the Family (perception of family members as reliable providers of help and support to solve problems), and (3) Family as Referents (deals with relatives as behavioral and attitudinal referents). Familism
items were taken from the Familism scales developed by Bardis (1959) and by Triandis et al. (1982). Respondents are instructed to answer each of the 13 questions on a five-point Likert-type scale (with 5 indicating “Completely True” and 1 “Not at all True”). For the purposes of the present study, the total score across these factors was utilized. Higher scores on the familism scale indicate more traditional views of the family as a support system. Cronbach’s alpha for the current sample was .80.

Fatalism/Mastery Scale (Fatalism: Neff & Hoppe, 1993)

The Fatalism/Mastery Scale is a seven-item measure of “Personal Fatalism” (the individual’s perception of his or her ability to control events in the world) developed from items used by Chandler (1979) and by Pearlin and Schooler (1978). Responses to each of the seven items range from 1 (Strongly agree) to 4 (Strongly disagree). Lower scores are an indicator of having fatalistic interpretations towards future events and a sense of low mastery. Internal consistency reliabilities have been demonstrated to be .70, .76, and .80 in Anglo Americans, African Americans, and Mexican Americans, respectively. The Cronbach’s alpha for the fatalism/mastery scale in the current study was .63.

MacNew Quality of Life after Myocardial Infarction Questionnaire (QLMI: Valenti, Lim, Heller, & Knapp, 1996)

The QLMI is a 27-item cardiac disease-specific quality of life questionnaire. The QLMI addresses three major dimensions of cardiac-related quality of life (CQOL): Emotional, Physical, and Social functioning. Statistically significant correlations between the QLMI and other health-related quality of life (HQOL) measures, as well as moderate to strong evidence for the measure’s predictive and discriminative validity have been demonstrated in cardiac patient populations (Oldridge et al., 1991; Hillers et al., 1994). Several investigators have suggested that disease-specific instruments, which focus on the problems of a defined medical population, are
preferable over generic HQOL measures due to their sensitivity in capturing aspects of specific medical illnesses (Dempster & Donnelly, 2000; Guyatt et al., 1989; Hillers et al., 1994). Higher scores on the physical, emotional, and social dimensions from the QLMI indicate better health status in that domain. The Cronbach’s alpha for the QLMI dimensions in our study were .86 (Physical), .87 (Emotional), and .82 (Social), respectively. A single global index of CQOL may also be derived by combining the patient’s responses to all items on the QLMI.


The MOS-SS is a 19-item, self-report survey of functional social support that represents five dimensions: (1) Emotional support (the expression of positive affect, empathetic understanding, and the encouragement of expressions of feelings), (2) Informational support (the offering of advice, information, guidance or feedback), (3) Tangible support (the provision of material aid or behavioral assistance), (4) Positive Social Interaction (the availability of other persons to do fun things with you), and (5) Affectionate support (involving expressions of love and affection). Subjects rate their perceptions of the availability of different functional aspects of support (e.g., the degree to which their interpersonal relationships serve particular functions). The MOS-SS has been shown to have strong internal consistency (.91 to .97) and has demonstrated high convergent and discriminant validity of items, supporting the dimensionality of the measure (Sherbourne & Stewart, 1991). Although each of these scales can be interpreted separately, the literature indicates that the scores on the MOS-SS scales can also be summed to derive a single, valid indicator of perceived availability of social support. For the purposes of this study, this approach was taken and only the total MOS-SS score was utilized in the planned analyses. Higher scores reflect a greater degree of perceived social support. Cronbach’s alpha for the total score in the current study was .95.
Short Acculturation Scale for Hispanics (SASH: Marin, Sabogal, VanOss-Marin, Otero-Sabogal, & Perez-Stable, 1987)

The SASH is a 12-item, self-report measure of behavioral acculturation for Hispanics. Separate factor analyses of 363 Hispanics and 228 non-Hispanic whites have produced three factors: (1) Language Use, (2) Media, and (3) Ethnic Social Relations. These three factors have been shown to have moderate to high internal consistency, with alpha coefficients ranging from .78 to .90, with an overall internal consistency coefficient of .92. The SASH has been demonstrated to correlate highly with the following validation criteria: respondents’ generation, length of residence in the U.S., age at arrival, ethnic self-identification, and with an acculturation index (Marin et al., 1987). Non-Hispanics have also been shown to differ significantly from Hispanics in their responses to the SASH. Although each of these factors can be interpreted separately, a single, valid indicator of acculturation can be derived. For the purposes of this study, this approach was taken and only the total SASH score was utilized in the planned analyses. Higher total scores are an indicator of greater integration into the U.S. mainstream culture. Respondents may also be placed in categories of “low acculturation” (< 3), “biculturalism” (≥ 3), or “high acculturation” (≥ 4) based on their total scores. Cronbach’s alpha for the current sample was .89.
RESULTS

Incidence of Depression and Degree of Acculturation, Social Support, and CQOL

A categorization of depressed versus non-depressed Hispanic cardiac patients (cut-off score ≥ 16) indicated that 25.9% of our sample (n = 31) endorsed items reflecting significant depressive symptomatology as measured by the CES-D. Furthermore, 9.2% (n = 11) met more stringent criteria (cut-off score ≥ 27) for depression. Regarding our cultural measures, 91.7% of our sample (n = 110) met classification criteria for “low acculturation” (total score < 3) and 8.3% (n = 10) for “biculturalism” (total score = 3) as measured by patient responses on the SASH. None of our sample met criteria for “high acculturation” (total score ≥ 4). In addition, 85.8% of study participants perceived having a high degree of social support available to them (total score ≥ 70.83) as evident by their responses on the MOS-SS. Finally, although a majority of Hispanic patients reported moderate to high cardiac-related quality of life (CQOL) – 84.2% to 85.8% – as evident in their responses on the QLMI, there remained a subset of patients (one or more standard deviations below the mean) that endorsed items indicative of adjustment difficulties in the areas of physical (14.2%), emotional (14.2%), and social (15.8%) functioning, respectively.

Relationships between Quality of Life Dimensions and Cardiac Patient Study Variables

Table 3 presents the zero-order correlations for the predictor and outcome variables under study. Consistent with prior studies, acculturation was moderately correlated to SES (r = .48, p < .01), suggesting that the process of acculturation tends to be facilitated in those individuals who come from backgrounds with greater economic resources and higher education. Acculturation
was also significantly related to age ($r = -.35, p < .01$) and familism ($r = -.32, p < .01$), suggesting that older Hispanic patients in our sample tended to communicate primarily in Spanish and retain traditional attitudes and behaviors related to the Hispanic family. LVEF and NYHA class were inversely correlated as expected ($r = -.34, p < .01$), such that patients with a low ejection fraction were classified at a higher NYHA medical severity level. Finally, results showed that depression, as measured by the CES-D, was highly correlated with the emotional functioning dimension of the QLMI ($r = -.81, p < .01$). Therefore, depression was not entered into the multiple regression equation for emotional functioning due to its likely colinearity; however, depression was entered for the dimensions of physical and social functioning.

**Patient Characteristics Influencing Cardiac-Related Quality of Life**

In order to determine the effect of age, gender, SES, LVEF, NYHA class, and time since diagnosis on Hispanic patients’ cardiac adjustment, a series of between subjects analyses of variance (ANOVAs) were conducted. For all ANOVAs, the total score from the QLMI was used as the dependent variable to assess CQOL. ANOVA analyses demonstrated a significant main effect for gender, $F(1, 119) = 10.71, p < .01$; time since cardiac diagnosis, $F(3, 119) = 2.68, p < .10$; and NYHA class, $F(2, 114) = 14.66, p < .001$, respectively.

Examination of group means indicated that females ($M = 5.33, SD = 0.67$) displayed greater adjustment difficulties in relation to their heart disease than males ($M = 5.86, SD = 0.86$). Further, post-hoc comparisons examining mean differences across levels of time since diagnosis revealed that those patients with a diagnosis of coronary heart disease for 10 years or more demonstrated greater adjustment difficulties than those diagnosed for 2 to 4 years, $t(120) = 0.55, p < .10$ (see Figure 1). No other significant differences were observed for any of the remaining time since diagnosis comparisons. Finally, post-hoc comparisons examining mean differences
across NYHA class indicated that as medical severity level increased, CQOL diminished. These differences were noticeable between NYHA class I and III, \( t(115) = -1.02, p < .001 \); and NYHA class II and III, \( t(115) = -.83, p < .001 \) (see Figure 2). Given that there were no significant differences found for LVEF on cardiac patient adjustment, NYHA class replaced this variable as an index of medical severity to assess the degree of unique variance contributed by its entry into the three multiple regression models representing dimensions of CQOL.

Regression Models for Dimensions of Cardiac-Related Quality of Life

The three dimensions of CQOL (physical, emotional, and social functioning) were each predicted through hierarchical multiple regression analyses (Table 4). Within each block entered, a stepwise selection procedure was utilized to obtain the most efficient model (Figure 3). For all regression analyses, predictor variables were entered in three separate steps. Step 1 entered five patient characteristics (i.e., age, gender, SES, NYHA class, time since diagnosis) as a block followed by the two psychosocial measures (i.e., depression and social support) in the second step to test the differential impact of each of these variables on dimensions of CQOL. As previously mentioned, depression was not entered into the multiple regression equation for emotional functioning due to its likely
Table 3
Correlations, Means, and Standard Deviations of Study Variables

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Note. GEN = Gender; SES = Socioeconomic Status; LVEF = Left Ventricular Ejection Fraction; NYHA = New York Heart Association Class YRDX = Time Since Diagnosis; DEP = Depression; SS = Social Support; ACC = Acculturation; FAM = Familism; FAT = Fatalism; PF = Physical Functioning; EF = Emotional Functioning; SF = Social Functioning.

*p < .05.  **p < .01.
Figure 1. Mean Scores of Global Quality of Life by Time Since Cardiac Diagnosis
Figure 2. Mean Scores of Global Quality of Life by NYHA Class
colinearity. The three indices of acculturation (i.e., behavioral, familism, fatalism) were then entered in the third step to examine the unique contribution of behavioral acculturation, familism, and fatalism on dimensions of CQOL, while controlling for patient characteristics and psychosocial variables.

**Physical Functioning**

As seen in Table 4, the gender of Hispanic cardiac patients significantly accounted for 3% of the variance for scores on the QLMI Physical Functioning Scale. NYHA class was also significant and added an additional 21% of the variance to the model. Depression, as measured by the CES-D, accounted for the greatest increment in variance for physical functioning, with an additional 28% explained by its entry into the model, thereby increasing the overall variance accounted for by the final model to 52%. However, none of the remaining patient characteristics (i.e., age, SES, time since diagnosis), psychosocial variables (i.e., social support), or dimensions of acculturation (i.e., behavioral, familism, fatalism) significantly contributed any additional variance to QLMI Physical Functioning scores. These findings suggest that women, patients with a higher degree of medical severity, and presence of depressive symptoms are each predictive of lower perceived physical functioning among this sample of Hispanic cardiac patients.

**Emotional Functioning**

As with physical functioning, NYHA class and gender of Hispanic cardiac patients significantly predicted scores on the QLMI Emotional Functioning Scale, accounting for 6% and 10% of the variance, respectfully (see Table 4). Fatalism significantly accounted for 3% of the variance. Social support, as measured by the
Independent Variables

STEP I

Control Variables
- Age
- Gender
- SES
- NYHA Class
- Time Since Diagnosis

STEP II

Psychological Variables
- Social Support
- Depression

STEP III

Cultural Variables
- Acculturation
- Familism
- Fatalism

Dependent Variables

Model 1
Physical Functioning

Model 2
Emotional Functioning

Model 3
Social Functioning

Figure 3. Models for the Three Planned Regression Analyses
Table 4

Summary of Final Regression Analyses for Variables Predicting Three Dimensions of Cardiac-Related Quality of Life, Depression, and Social Support

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<th>$\Delta R^2$</th>
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<tr>
<td>Gender</td>
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* $p < .05$. ** $p < .01$. *** $p < .001$. 


MOS-SS, was also significant and added an additional 14% of the variance, increasing the overall variance accounted for by the final model to 33%. None of the remaining patient characteristics (i.e., age, SES, time since diagnosis) or dimensions of acculturation (i.e., behavioral, familism) significantly contributed any additional variance to QLMI Emotional Functioning scores. These findings suggest that women, those with a higher degree of medical severity, as well as those patients with low levels of social support and low mastery (i.e., fatalism) were associated with lower levels of perceived emotional functioning.

Social Functioning

NYHA class significantly accounted for 19% of the variance for scores on the QLMI Social Functioning Scale. As with physical functioning, depression accounted for the greatest increment in variance for social functioning, with an additional 26% explained by its entry into the model, thereby increasing the overall variance accounted for by the final model to 45%. However, none of the remaining patient characteristics (i.e., age, gender, SES, time since diagnosis), psychosocial variables (i.e., social support), or dimensions of acculturation (i.e., behavioral, familism, fatalism) significantly contributed any additional variance to QLMI Social Functioning scores (see Table 4). These findings suggest that patients with high medical severity and depressive symptoms were associated with lower perceived social functioning than those Hispanic cardiac patients with a lower severity of illness and fewer depressive symptoms.

Regression Models for Depression and Social Support

In addition to the three dimensions of cardiac patient adjustment, depression and social support were predicted through a hierarchical multiple regression analysis (see
Table 4). Within each block entered, a stepwise selection procedure was utilized in which predictor variables were entered in three separate steps. Step 1 entered five patient characteristics (i.e., age, gender, SES, NYHA class, time since diagnosis) as a block followed by social support (for depression) or depression (for social support) in the second step, depending on the model tested, to examine the differential impact of each of these variables on psychosocial functioning. The three indices of acculturation (i.e., behavioral, familism, fatalism) were then entered in the third step to examine the unique contribution of behavioral acculturation, familism, and fatalism on depression and social support, while controlling for patient characteristics and psychosocial variables.

**Depression**

As seen in Table 4, NYHA class and gender significantly accounted for 4% and 6% of the variance for scores on the CES-D, respectfully. Fatalism was also significant and added an additional 7% of the variance to the model. Social support, as measured by the MOS-SS, accounted for the greatest increment in variance for depression, with an additional 17% explained by its entry into the model, thereby increasing the overall variance accounted for by the final model to 34%. However, none of the remaining patient characteristics (i.e., age, SES, time since diagnosis) or dimensions of acculturation (i.e., behavioral, familism) significantly contributed any additional variance to CES-D scores. These findings suggest that women, those with a higher degree of medical severity, as well as those patients with low levels of social support and lack of perceived control tend to endorse high levels of depressive symptomatology.
Social Support

Both gender of Hispanic cardiac patients and familism significantly predicted scores on the MOS-SS, each accounting for 4% of the variance (see Table 4). Depression, as measured by CES-D, was also significant and added an additional 18% of the variance, increasing the overall variance accounted for by the final model to 26%. None of the remaining patient characteristics (i.e., age, SES, time since diagnosis) or dimensions of acculturation (i.e., behavioral, fatalism) significantly contributed any additional variance to MOS-SS scores. These findings suggest that women, those with nontraditional views of the family as a support system, and patients with a greater degree of depressive symptoms were associated with lower levels of social support.
DISCUSSION

The current study sought to investigate the psychosocial adjustment of Hispanic cardiac patients to assist in identifying those patients at-risk for developing adjustment difficulties as well as identifying factors associated with more favorable quality of life outcomes.

Hispanic Patient Sample

The first objective was to examine the incidence of depression, degree of social support and quality of life in a sample of Hispanic cardiac patients presenting to their cardiologist. Results indicated that approximately 26% of the current sample endorsed items reflective of depressive symptomatology. This was a somewhat high percentage (based on CES-D scores alone and not confirmed by diagnostic interview) compared to national prevalence data for Hispanic Americans, but within the 20 – 40% prevalence rate of depression reported in prior studies of primarily Anglo-American cardiac samples (Carney et al., 1995). This finding suggests that depressive symptoms could be prominent in a sizable proportion of Hispanic cardiac patients and therefore, merits further investigation as a potential risk factor for poor prognosis in this patient population.

Second, about 86% of study participants described having a high degree of social support available to them in terms of emotional and material support, receiving guidance, and having positive social companionship. Finally, about 14% to 16% of the current
sample reported experiencing poor functioning in the areas of physical health, emotional well-being, and social interactions. This finding is consistent with prior studies of Hispanic medical patients (Jackson-Triche et al., 2000) and suggests that although a proportion of patients may be experiencing adjustment difficulties, the majority are adapting well with their cardiac illness and generally experience good quality of life.

**Multidimensional Assessment of Hispanic Acculturation**

A second purpose of the current study was to examine factors unique to Hispanic culture, namely, acculturation, familism, and fatalism. Approximately 92% of Hispanic cardiac patients in our sample were classified as being “low acculturated,” suggesting that the majority of participants are Spanish-speaking and therefore tend to use media resources in Spanish and socialize with Hispanic peers. This finding is not surprising given that the majority of study participants were characterized as Hispanic immigrants, having resided in a predominantly Spanish-speaking community (i.e., south Florida) for an average of 28 years, and self-identified as “Purely Hispanic.” Therefore, in terms of language use, this segment of the Hispanic population may not have had to struggle with acculturative stress as much as perhaps other Hispanic Americans in different regions of the United States, particularly as Hispanic immigrants to south Florida are guided to available community resources upon arrival.

When examining the relationship between acculturation and specific Hispanic cultural values, behavioral acculturation was related to familism but not fatalism. These findings emphasize the enduring importance of the centrality of the family in this sample of predominantly low acculturated cardiac patients, and the potential use of this Hispanic cultural value as an emotional support system when coping with stressful life events.
Consistent with Keefe & Padilla’s (1987) model of “selective acculturation”, as the acculturation process takes place, traditional Hispanic attitudes and behaviors related to the family might diminish. This process may particularly occur for those Hispanic patients that immigrated to the U.S. without members of their immediate or extended family, thereby directing them towards seeking of alternative social networks. In addition, the finding that fatalism was not significantly related to behavioral acculturation may be due to several factors, including the size and level of heterogeneity within the current patient sample. This finding highlights the need for future studies examining the multidimensionality of the acculturation process and its measurement over time. As expected, acculturation seemed to be facilitated in those participants who came from higher socioeconomic backgrounds.

Cardiac-Related Quality of Life

Physical Functioning

The third objective of the study was to examine the role that psychosocial and cultural dimensions may have in predicting cardiac-related quality of life (CQOL), while controlling for specific demographic and medical factors. As predicted, Hispanic cardiac patients that were depressed, had a higher degree of medical severity, and were female appeared to experience lower levels of physical functioning, characterized by fatigue, shortness of breath, chest pain, and limited sexual activity. Depression was found to be a strong predictor of poor physical functioning, independent of cardiac disease severity (NYHA class), demonstrating its potential role in exacerbating somatic symptoms and disability, increasing health care utilization, and leading to higher morbidity and mortality in this patient population (Friedman et al., 1995).
Social Functioning

Similarly, depressed patients and those with high levels of medical severity seemed to participate in fewer social activities, feel excluded or burdensome to others, and perceive having overprotective family members. This finding is consistent with prior studies demonstrating the additive effects of both CHD diagnosis and depression on reducing social functioning two-fold, compared to CHD or depression alone (Wells et al., 1989). This result may be of particular importance in Hispanic cardiac patients who rely on family support when dealing with stressful events. When depressed, these patients may view supportive family members as being “overprotective” or feel that their medical illness has placed a “burden” on the family, thereby contributing to a decreased number of social interactions that are viewed as positive. As a result of deficits in social functioning, these patients may also have a particularly difficult time dealing with their cardiac illness on their own, leading to poor self-care behaviors, poor adherence to their medical regimen, and subsequent medical complications (Katon & Sullivan, 1990).

Emotional Functioning

Poor emotional well being – characterized by feelings of frustration, worthlessness, low self-esteem, and fear – was found in those cardiac patients with low levels of social support, high levels of medical severity, female gender, and fatalistic perceptions. Consistent with prior studies of the stress-illness paradigm (Briones et al., 1990; Oxman & Hull, 1997), the perceived availability of support networks in this patient population appears to serve as a “buffer” to experiencing adverse emotional reactions (e.g., anxiety, depression) in reaction to one’s cardiac illness. However, female Hispanic patients and those experiencing a number of health complications related to their heart
disease are patient subgroups that seem to be at heightened risk for developing adverse emotional sequelae to their illness.

Interestingly, fatalism (i.e., Hispanic cultural value symbolizing lack of perceived individual control) was found to be a significant predictor of poor emotional functioning, even after controlling for other demographic, medical, and psychosocial factors. Although fatalism has been interpreted as a potentially adaptive response to uncontrollable life situations, particularly in U.S. minority groups (Neff & Hoppe, 1993), results from the current study suggest that fatalistic attitudes may result in greater distress in Hispanic cardiac patients as a result of passive coping responses with one’s heart disease and treatment plan, leading to adjustment difficulties and miscommunication between the patient and his/her cardiologist.

**Time Since Diagnosis**

Contrary to a priori hypotheses, age, SES, time since diagnosis, acculturation, and familism were not associated with any of the three dimensions of CQOL examined. However, when CQOL was examined as a whole, patients living with heart disease for two to four years demonstrated significantly better adjustment to their medical illness than patients diagnosed for 10 or more years. Conceptually, this finding suggests that recently diagnosed patients (< 2 years) may experience initial adjustment difficulties with their heart disease due to a number of lifestyle changes that are associated with their diagnosis. For example, this cohort of patients may experience limitations related to physical exertion, various behavior changes (e.g., need to increase exercise, eat a healthier diet, decrease smoking, and take medications), and role changes (i.e., increased dependency on others) that interfere with their daily activities. After a period of time
(i.e., 2 to 4 years post-diagnosis), patients may learn how to adapt to these lifestyle changes, leading to increased quality of life. However, the longer these patients live with their heart disease, the more likely they are to encounter new adjustment issues as they experience increased health complications with age, increased dependency on others, and decreased social support, particularly in those patients who outlive members of their support system.

**Psychosocial Risk Factors**

In addition to CQOL, factors associated with high levels of depression and social support were examined given their importance as psychosocial risk factors and prognostic indicators in those with heart disease. Depression tended to manifest itself in those cardiac patients with low levels of social support, fatalistic views toward their illness, high medical severity, and in women. In addition, women, those endorsing depressive symptomatology, and those not viewing the family as a traditional support system reported low availability of social support. These findings may be explained in part by clinical observations of depressed individuals, particularly those who are living with a chronic medical condition, who are often socially isolative or perceive having negative interactions with others and therefore have less quality social support systems available to them. Similarly, individuals with low social support are at increased risk for developing psychological sequelae, such as depression, in response to lifestyle changes related to their heart disease. Consequently, depressed cardiac patients may experience feelings of hopelessness, loss of control, and low self-esteem.

The Hispanic cultural values of fatalism and familism also appeared to be associated with depression and social support, respectively, via different coping
mechanisms. As previously mentioned, fatalism (lack of perceived control) may promote depression and affect health outcomes through passive coping responses, often leading to poor adjustment with one’s medical condition and treatment plan. Conversely, the Hispanic value of familism – which perceives family as a source of identity, self-worth, and social support – may act as a protective buffer for many Hispanic cardiac patients experiencing adjustment difficulties with their illness by facilitating the availability and use of culturally congruent social networks, such as family and peers, to reinforce healthy behaviors, provide healthy role models from one’s own culture, and serve as a source of emotional support.

Women and CHD

Consistent with prior studies of women with CHD, Hispanic women in the current study reported higher levels of depression, lower levels of social support, and greater adjustment difficulties with their heart disease than men, regardless of age or SES (Nolen-Hoeksema, 1990; Shumaker & Czajkowski, 1993; Schron et al., 1991). An exact reason for this difference is not known. These gender differences may be attributed to the multiple role demands that women encounter, such as balancing work and interpersonal commitments with their spouses, children, and friends. Balancing multiple roles, such as work and interpersonal demands, has been shown to be an independent predictor for the development and progression of CHD in women (Dixon, Dixon, & Spinner, 1991).

Hispanic women may be at equal or greater risk of experiencing psychological and cardiac complications, in comparison to Hispanic men, particularly when they are placed in the role of “the long suffering mother,” also referred to as Marianismo in the Hispanic culture. This cultural value refers to the spiritual superiority of the mother,
capable of enduring any suffering and self-sacrifice to help the husband and children, and often attending to another family member’s needs before her own (Bernal & Gutierrez, 1988). As a result of these family role expectations, these women may experience increased social isolation as they cope with their cardiac illness alone, resulting in greater distress, poorer functioning, and increased risk for depression. Women may be placed at even greater risk for social isolation and its potentially adverse consequences as they outlive their spouses, given their longer lifespan. These findings accentuate the need for health care providers to give increased attention to women’s role demands, cultural values, role stressors, and level of social isolation and depression in interfering with the treatment and quality of life of this cardiac patient population.

**Limitations**

The limitations in this study are primarily related to the demographic profile of the Hispanic patient population sampled. Having conducted the study in a specialty cardiology clinic in south Florida may have limited the participation of Hispanic cardiac patients at different stages of the acculturation process. This concept is particularly evident in that approximately 92% of Hispanic patients sampled were classified as “low acculturated”, predominantly Cuban-American (72%), and preferred to have the clinical interview conducted in Spanish. Given the nature of the social environment in south Florida and largely represented Hispanic community, it is feasible that many of the Hispanic patients sampled did not have to experience the same acculturation issues that other Hispanic communities in the U.S. may face. In particular, Hispanics residing in south Florida have the resources available to maintain many cultural customs, such as language use, media use, choice of social peers, food, and music. As a result, an
adequate sample of “high acculturated” or “bicultural” Hispanic patients was not represented in the current study to demonstrate the level of heterogeneity that exists in the Hispanic population on measures of psychosocial adjustment. This observation may also account, in part, for behavioral acculturation (i.e., language use) not being a significant predictor on specific dimensions of CQOL.

Similarly, a second limitation involved the Spanish-speaking ability of the cardiologist from whom this sample of Hispanic cardiac patients sought treatment. There is evidence suggesting that having a language-concordant physician is associated with higher ratings of physical and emotional well-being by the patient, lower reported bodily pain, increased compliance, and higher patient satisfaction (Perez-Stable, et al., 1997). These findings may be related to a decrease in delay of health-seeking behavior on the part of the patient and targeted treatment plans on the part of the physician, resulting from direct communication in the patient-physician relationship. Communication in the patient’s native language decreases opportunities for misunderstandings regarding the etiology, symptomatology, diagnosis, and treatment for presenting problems. Therefore, the high percentage of Hispanic cardiac patients reporting moderate to high CQOL (84% to 86%), may be related to having a physician with whom they could communicate with in their native language. Consequently, the current sample may not be generalizable to Hispanic cardiac patients who receive care from a language-discordant physician.

Of note, approximately 99% of our sample reported to have some form of health insurance compared to 34% of the nation’s 31 million Hispanic Americans having no health insurance and 12% of Anglo Americans with no health insurance (Kilborn, 1999). Nationally, while Hispanic Americans appear to be gaining in economic strength, they
disproportionately lack insurance coverage and ready access to health care. That is particularly true for the three-quarters who are from Mexico and Central America. Cuban-Americans (the predominant Hispanic subgroup sampled in the current study) tend to be older, have a higher income, and are the most likely to have private health insurance (74%) compared to Puerto Ricans, who most likely have Medicaid coverage (32%), or Mexican Americans, who are the most likely to be uninsured (30%) (Council on Scientific Affairs, 1991). Hispanic cardiac patients in the current study may also have a higher rate of being insured due to their U.S. residency status ($M = 28.1$ years), which easily surpasses the five-year wait requirement that legal Hispanic immigrants must meet prior to applying for Medicaid. Cardiac patients, particularly those that experience some form of health complication (e.g., heart attack), are also inherently more likely to be eligible for disability payments in comparison to the general U.S. population (American Heart Association, 1999). Given these discrepancies in health care coverage, the results presented in the current study may not be as readily generalizable to Hispanic subgroups that lack health insurance and access to health care services. Despite these limitations, a number of compelling findings were obtained and require further investigation.

**Future Directions**

The present study provides greater insight into the psychosocial functioning of Hispanic cardiac patients, a population in need of assessment given the scarce amount of research conducted in this population. Research studies examining the cardiac-related quality of life (CQOL) of Hispanic Americans are particularly important given the high existing mortality rates from CHD and the increased prevalence of both traditional and psychosocial risk factors in this patient population. Results from the current study are the
first to provide prevalence data of Hispanic patients who are coping well with their cardiac illness versus those exhibiting adjustment difficulties. Second, psychosocial and cultural factors were examined and found to have predictive value in identifying patient subgroups at risk for experiencing poor CQOL. Consequently, results from the present study provide a number of empirical and clinical implications for changing the focus of current intervention modalities and public health policy.

In terms of Hispanic acculturation, the current investigation provides support for examining acculturation as a multidimensional construct (encompassing one’s behaviors, attitudes, norms, and values) and demonstrates its potential to affect Hispanic cardiac functioning through several mechanisms, including coping responses to illness (fatalism), use of culturally congruent supportive networks in times of crisis (familism), and effective communication through language concordant health care providers, media, or social peers (behavioral acculturation). Utilizing this methodological approach implies cultural growth along a continuum whereby an individual may adopt new values, while simultaneously retain cultural values that may or may not contribute to poor CQOL. This theoretical framework of cultural integration also accentuates the level of heterogeneity present within the Hispanic community, reinforcing the importance of examining intra-group differences in this population. Understanding the cultural context by which certain adjustment and psychological disorders present themselves, particularly in chronic illness, allows the healthcare provider to develop and utilize clinical tools that enhance optimal patient care.

Second, results from the current study indicate that approximately 14 to 16% of Hispanic patients experience adjustment difficulties related to their cardiac illness.
Within this group, patients exhibiting 1) high depressive symptoms, 2) low social support, 3) high medical severity, and/or are 3) women are particularly “at-risk” for developing complications in relation to their physical, emotional, and social functioning. Moreover, Hispanic patients living with their cardiac diagnosis for 10 years or more are more susceptible to poor CQOL compared to more recently diagnosed patients (2 to 4 years). Collectively, these findings identify subgroups of Hispanic cardiac patients that are at high risk for experiencing poor CQOL and are in need of culturally-sensitive interventions targeting reductions in depression and social isolation, while addressing the special needs of this medical population.

Interventions targeting risk-reductions of cardiovascular lifestyle factors have generally focused on secondary prevention efforts. In the realm of cardiac rehabilitation, secondary prevention has been conceptualized as the development and implementation of long-term strategies for patients who already have CHD, with the objective of decreasing future cardiac events, improving quality of life, and prolonging life (Burell, 1996). Targeted lifestyle factors may include behavioral (e.g., smoking, diet, sedentary activity) and emotional (e.g., depression, social isolation) characteristics. Although medical and surgical procedures have been developed to effectively ameliorate acute symptoms and manifestations of CHD, lifestyle interventions have been recommended to produce long-term impact on the course of the disease. Similarly, the mental health field has made major advances in classifying mental disorders and developing treatments for many of them. However, there has been almost no work conducted on preventing mental disorders. Consequently, the development and evaluation of preventive intervention efforts has been recommended by the Institute of Medicine, with special emphasis on
reducing the incidence of new cases of major depressive episodes (MDE) (Muñoz, Mrazek, & Haggerty, 1996). Parallel to cardiac lifestyle interventions, focusing on the prevention of depression has significant benefits not only for the patient but their families, who also experience a great number of challenges as they attempt to confront the issues surrounding cardiac disease.

Evidence from the present study strongly suggests that addressing and ameliorating psychosocial risk factors in Hispanic cardiac patients necessitates culturally-appropriate methods to assessment and access to services. For example, assessment materials in the patient’s preferred language should be made available to ensure accurate reporting of symptoms and understanding of the adjustment issues that Hispanic cardiac patients may encounter. Interestingly, study participants requested that the research assessment battery be conducted via clinical interview versus self-report format. This study observation is consistent with the Hispanic values of personalismo and simpatía. Personalismo refers to the dignified approach to personal associations that many Hispanics prefer (Miranda et al., 1996). Important aspects of this personal approach include the use of formal greetings when addressing patients in patient-provider relationships, particularly as more traditional Hispanics have a tendency to value and demonstrate a great deal of respect for their health care provider. Along with showing respect, traditional Hispanics are expected to be warm and personal in their interactions with others, a concept referred to as simpatía (Miranda et al., 1996). Likewise, Hispanics tend to appreciate and respond well to the simpatía of others. Understanding these cultural values become of vital importance in the recruitment of Hispanic patients for clinical research, as traditional approaches to recruiting participants may be perceived as
both too informal or too cold. Therefore, having bilingual staff who treat older Hispanic patients with respect, using formal titles, while being warm and personable, would greatly enhance the successful recruitment and retaining of Hispanics into research studies and improve accessibility to clinical services.

Results from the present study also suggest that routine screening practices for depression, social isolation, and CQOL be made available for Hispanic patients that present to their cardiologist. Once the screening results are received by the cardiologist, clear directions should be made readily available as to what to do if the patient screens positive. When screening is not routine, it should at least be available when requested by either patient or the physician. Even in these settings, screening should be routine for certain subsets of patients. Study findings suggest that subsets of Hispanic cardiac patients particularly at risk for adjustment difficulties are those that 1) exhibit depressive symptoms, 2) have low social support, 3) have several medical complications, and 4) are female. Implementation of screening procedures would be highly important in Hispanic cardiac patients given that this ethnic group has been found to receive comparatively less mental health treatment than mainstream groups. Even though only 22% of Anglo Americans who meet criteria for major depression receive mental health treatment, the rate for Hispanics is even lower (11%) (Hough et al., 1987). This finding suggests that Hispanics are either less likely to be identified by the health care system or to have access to mental health services. Screening, using culturally valid measures, will help address these barriers to accessing services and will also help cardiologists identify patients who are experiencing poor CQOL for referral to clinical services.
Individuals who endorse high depressive symptoms should be provided with alternative methods for increasing mood management skills and a rationale explaining how negative mood states can reduce their ability to enjoy life, to express their love to family and friends, and to manage their heart disease. Educational offerings (e.g., classes to learn about mood and health) can be described in accurate and non-stigmatizing ways as part of wellness interventions rather than exclusively for those who are at-risk. These wellness interventions can be offered as part of cardiac rehabilitation programs to improve lifestyle factors related to one’s heart disease. Once patients are screened and referred, they may then undergo a more careful assessment for medication evaluation and/or prevention/treatment interventions. Having physicians who are willing to discuss alternate treatments might increase patients’ willingness to divulge their depression to their doctor, discuss treatment they are receiving elsewhere, and allow their doctor to collaborate with their treatment.

Hispanic Americans, who now number approximately 31 million and are quickly becoming the largest minority group in the United States (Mein & Winkleby, 1998), are showing substantial increases in depression and other cardiovascular disease risk factors the longer they stay in the U.S., and their children show even higher rates (Sundquist & Winkleby, 1999; Vega et al., 1998). Efforts to address these risk factors in Hispanic Americans must begin with developing and evaluating culturally-sensitive prevention intervention programs. This requires that

1) educational materials/pamphlets about both psychosocial and behavioral risk factors for CHD be made available in Spanish and English for patients and their family members;
2) Spanish-language versions of cardiac risk factor prevention interventions be developed alongside English-language versions;

3) prevention interventions be offered as “courses” related to improving one’s lifestyle and adjustment to CHD, as well as reducing future CHD risk for one’s family, in order to reduce the stigma associated with mental health and normalize the cardiac adjustment experience for patients;

4) interventions capitalize upon the value of Hispanic familism to decrease social isolation, while utilizing a group format to share experiences of acculturation and CHD in order to strengthen social connections within the Hispanic community;

5) interventions address fatalistic attitudes as a situational coping response with alternative coping strategies being offered to deal specifically with one’s CHD (problem-focused coping); and

6) interventions address traditional Hispanic gender roles (e.g., marialismo) and their impact on CQOL.

Future studies should examine the efficacy of these wellness interventions on ameliorating clinical depression in this patient population in light of evidence demonstrating that 42% of cardiac patients with subclinical depression subsequently develop a MDE (Hance et al., 1996). In order to change health care policy, prevention intervention programs must be able to demonstrate measurable improvements in mood and behavioral risk factors. Preliminary studies have shown that cognitive-behavioral mood management methods – that focus on changing how we think, our activity levels, and our interpersonal contacts – can be used successfully to prevent the onset of clinical depression in both English- and Spanish-speaking medical populations (Muñoz, 1997).
Further, there is evidence that the integration of psychosocial interventions within cardiac rehabilitation programs leads to reduced cardiovascular morbidity and mortality in comparison to those programs without this intervention component (Linden, 2000). Collectively, these findings emphasize the need for the development, evaluation, and future accessibility of cardiac risk factor prevention services for Hispanic cardiac patients.

The policy implications and clinical impact of psychosocial factors in chronic medical conditions are increasingly being assessed, not just by their prevalence and associated mortality, but by their impact on patient adjustment and perceived well being (Cassileth et al., 1984; Wells et al., 1989). The findings of the current study are particularly important because of evidence that unaddressed psychological factors in medical patients lead to poorer health outcomes and more expensive health care costs (Friedman et al., 1995). Poor well being and functioning are also of policy interest because of societal costs due to loss of productivity and use of health services (Wilson & Drury, 1984). These factors may be especially evident in Hispanic populations where cultural and social factors have been demonstrated to influence utilization of health care services, appropriateness of health care sought, and compliance behaviors – all of which operate to determine one’s functional status (Angel & Angel, 1997). The development and integration of both psychological and behavioral CHD prevention programs within health care settings allows for a more cost-efficient, comprehensive service approach for patients.

Studies examining the cost-effectiveness of a prevention versus treatment intervention model are particularly needed as the focus of healthcare has shifted.
Already, health care reform, especially the move toward managed care, demands that health care services move from an emphasis on acute care, which is very costly, to early preventive interventions, which, ideally, will reduce the need for acute care. It is up to the health care providers of these patients to make sure that cultural and psychological issues are part of this new focus.

In sum, the physical and psychological sequelae that survivors of CHD events experience can be significant, requiring long periods of recovery and sometimes resulting in long-term functional, social, and emotional deficits. A subset of Hispanic cardiac patients may be particularly at risk for poor quality of life outcomes as the complex process of acculturation leads to adopting and retaining values that may or may not aid with cardiac adjustment. Results from the current study demonstrate the importance of assessing psychosocial and cultural factors in Hispanic cardiac patients, particularly as these variables were found to predict and differentiate at-risk groups on several dimensions of quality of life. Members of the cardiology team can utilize this information to enhance CQOL and reduce unnecessary suffering by developing and evaluating culturally-appropriate interventions that improve access to services and address the special needs of this population.
REFERENCES


Friedman, R., Sobel, D., Myers, P., Caudill, M., & Benson, H. Behavioral medicine, clinical health psychology, and cost offset. Health Psychology, 14(6), 509-518.


INSTRUCTIONS: Please check ✓ all that apply:

1. Age: ___________ (years)  
2. Sex: ☐ Male ☐ Female

3. Which of the following best describes your current marital status? (select one item)
   ☐ Single/Never Married ☐ Separated ☐ Married
   ☐ Living together ☐ Divorced ☐ Widowed

4. Which of the following best describes your religious background? (select one item)
   ☐ Catholic ☐ Jewish ☐ Christian, with no formal religious affiliation
   ☐ Protestant (denomination): ______________ ☐ Other: ______________

5. What is the highest grade you completed in school? (select one item)
   ☐ 8th grade or less ☐ Some high school ☐ High school graduate/GED
   ☐ Some college ☐ College graduate ☐ Post-graduate work

6. Which of the following best describes your current employment status? (select one item)
   ☐ Employed Full-Time ☐ Employed Part-Time ☐ Not employed
   ☐ Retired ☐ Medically Disabled

7. Please state your most recent occupation: ________________________________

8. Please state your average yearly income: ________________________________ ($ dollar amount)

9. What is your current insurance status? (select one item)
   ☐ Private ☐ Medicare ☐ Medicaid ☐ HMO ☐ None ☐ Other ______________

10. Please indicate which group best describes your ethnic or cultural background:
    ☐ White/Anglo ☐ Puerto Rican
    ☐ Cuban or Cuban American ☐ South American ______________ (country)
    ☐ Mexican, Mexican-American, or Chicano/a ☐ Central American ______________ (country)
    ☐ Other Latino/Hispanic ______________ ☐ Mixed

11. What is your father’s ethnic or cultural background? ________________________________

12. What is your mother’s ethnic or cultural background? ________________________________

13. Where were you born? ________________________________ (city/state/country)

14. Where was your father born? ________________________________ (city/state/country)

15. Where was your mother born? ________________________________ (city/state/country)

16. How many years have you lived in the United States? _____________ (years)

17. Which of the following best describes you? (please circle one item)
     1  2  3  4  5
     Purely Somewhat Partly Latino/Hispanic Somewhat Purely
     Latino/Hispanic Latino/Hispanic and Anglo-American Anglo-American Anglo-American
HEALTH/LIFESTYLE QUESTIONS

1. Has your doctor ever told you that you had any of the following conditions?  
(Please choose either yes or no for each condition)

- Yes  No  a. Congestive heart failure
- Yes  No  b. Chronic lung disease (including bronchitis or emphysema)
- Yes  No  c. Diabetes mellitus (high blood sugar)
- Yes  No  d. Hypertension or high blood pressure
- Yes  No  e. Angina or chest pain
- Yes  No  f. Heart attack or myocardial infarction
- Yes  No  g. Arrhythmia (abnormal heart rhythm)
- Yes  No  h. Cancer

2. At what age did you first notice symptoms related to your current heart condition?  

3. After you first noticed your heart symptoms, how much time passed before you went to the doctor?  

4. How many times have you been to the doctor in the past 6 months?  

- Zero  1 time  2 times
- 3 times  4 times  More than 4 times _______ (number)

5. How often do you exercise?  

- More than once a day  4-7 times/week  1-4 times/week
- Couple times/month  Once a month  Never

6. How vigorously do you exercise?  

- Extremely vigorously  Somewhat vigorously
- Not very vigorously  NA

7. For how long have you been exercising?  

- 10 or more years  5-10 years  2-5 years
- 1 year  Less than one year  NA

8. Have you ever or do you currently smoke?  

- Yes, current smoker  Yes, past smoker  No

9. How many years did/have you smoke(d)?  

10. On average, how much did (do) you smoke each day? _______  Packs/day

11. Have you ever or do you currently drink alcoholic beverages (including beer, wine, hard liquor/spirits)?  

- Yes  No

12. How many years have/had you consumed alcohol?  

13. On average, how often did (do) you consume alcohol?  

- Daily _______ (drinks/day)  2-3 times/weekly  Weekly
- 2-3 times/month  Once a month  Almost Never
Below is a list of the ways you might have felt or behaved. For each question, please indicate how often you have felt this way during the past week.

<table>
<thead>
<tr>
<th>DURING THE PAST WEEK:</th>
<th>Rarely or None of the Time (Less than 1 Day)</th>
<th>Some or a Little of the Time (1-2 Days)</th>
<th>Occasionally or a Moderate Amount of Time (3-4 Days)</th>
<th>Most or All of the Time (5-7 Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I was bothered by things that don't usually bother me…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>2. I did not feel like eating; my appetite was poor……</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>3. I felt that I could not shake off the blues even with help from my family or friends…………………………………</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>4. I felt I was just as good as other people………………...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>5. I had trouble keeping my mind on what I was doing……...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>6. I felt depressed………………………………………...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>7. I felt that everything I did was an effort………………...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>8. I felt hopeful about the future…………………………</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>9. I thought my life had been a failure……………………...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>10. I felt fearful…………………………………………...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>11. My sleep was restless…………………………………..</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>12. I was happy………………………………………………</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>13. I talked less than usual………………………………....</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>14. I felt lonely…………………………………………….</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>15. People were unfriendly…………………………………....</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>16. I enjoyed life…………………………………………..</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>17. I had crying spells………………………………………..</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>18. I felt sad………………………………………………...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>19. I felt that people disliked me…………………………...</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>20. I could not &quot;get going&quot;……………………………………..</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>
## Familism Scale

<table>
<thead>
<tr>
<th>Question</th>
<th>Not at all True</th>
<th>A Little True</th>
<th>Somewhat True</th>
<th>Quite a Bit True</th>
<th>Completely True</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. One should make great sacrifices to guarantee a good education for their children</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>13. One should help economically with the support of younger brothers and sisters</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>14. I would help within my means if a relative told me that she/he is in financial difficulty</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>15. One should have the hope of living long enough to see his/her grandchildren grow up</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>16. Aging parents should live with their relatives</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>17. A person should share his/her home with uncles, aunts or first cousins if they are in need</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>18. When someone has problems s/he can count on help from his/her relatives</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>19. One can count on help from his/her relatives to solve most problems</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>20. Much of what a son or daughter does should be done to please the parents</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>21. The family should consult close relatives (uncles, aunts) concerning its important decisions</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>22. One should be embarrassed about the bad things done by his/her brothers or sisters</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>23. Children should live in their parents’ house until they get married</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>24. One of the most important goals in life is to have children</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>
## Fatalism Scale

Now here are some statements about how you see yourself as a person. How strongly do you agree or disagree with each of these statements. (Please check ✓ one answer for each question).

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Do Not Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have little control over the things that happen to me.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>2. There is really no way I can solve some of the problems I have.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>3. I often feel helpless in dealing with the problems of life.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>4. What happens to me in the future really depends on me.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>5. There is little I can do to change many of the important things in my life.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>6. Sometimes I feel that I’m being pushed around in life.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>7. I can do anything I really set my mind to do.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
</tbody>
</table>
APPENDIX E
QUALITY OF LIFE MEASURE
We would like to ask you some questions about how you have been feeling **DURING THE LAST 2 WEEKS**. For each question, please check ☑️ the box ☐ that matches your answer.

<table>
<thead>
<tr>
<th>How often, <strong>DURING THE LAST 2 WEEKS:</strong></th>
<th>All of the Time</th>
<th>Most of the Time</th>
<th>A Good Bit of the Time</th>
<th>Some of the Time</th>
<th>A Little of the Time</th>
<th>Hardly Any of the Time</th>
<th>None of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you felt frustrated, impatient or angry?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>2. Have you felt worthless or inadequate?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>3. Have you felt discouraged or down in the dumps?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>4. Have you felt worn out or low in energy?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>How often, <strong>DURING THE LAST 2 WEEKS:</strong></td>
<td>None of the Time</td>
<td>A Little of the Time</td>
<td>Some of the Time</td>
<td>A Good Bit of the Time</td>
<td>Most of the Time</td>
<td>Almost All of the Time</td>
<td>All of the Time</td>
</tr>
<tr>
<td>5. Did you feel very confident and sure that you could deal with your heart problem?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>6. Did you feel relaxed and free of tension?</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>

7. How happy, satisfied, or pleased have you been with your personal life **during the last 2 weeks**?

<table>
<thead>
<tr>
<th>Very Dissatisfied, Unhappy Most of the Time</th>
<th>Generally Dissatisfied, Unhappy</th>
<th>Somewhat Dissatisfied, Unhappy</th>
<th>Generally Satisfied, Pleased</th>
<th>Happy Most of the Time</th>
<th>Very Happy Most of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>
How often, **DURING THE LAST 2 WEEKS:**

8. Have you felt restless, or as if you were having difficulty trying to calm down? .................................................................

   - All of the Time
   - Most of the Time
   - A Good Bit of the Time
   - Some of the Time
   - A Little of the Time
   - Hardly Any of the Time
   - None of the Time

9. How much shortness of breath have you experienced **during the last 2 weeks** while doing your day-to-day physical activities? .................................................................

   - Extreme Shortness of Breath
   - Very Short of Breath
   - Quite A Bit Shortness of Breath
   - Moderate Shortness of Breath
   - Some Shortness of Breath
   - A Little Shortness of Breath
   - No Shortness of Breath

How often, **DURING THE LAST 2 WEEKS:**

10. Have you felt tearful, or like crying? ......................................................

11. Have you felt as if you were more dependent than you were before your heart problem? ..............................................................

12. Have you felt you were unable to do your usual social activities, or social activities with your family? ..................................................

13. Have you felt as if others no longer have the same confidence in you as they did before your heart problem? ..................................................

14. Have you experienced chest pain while doing your day-to-day activities? .................................................................

15. Have you felt unsure of yourself or lacking in self-confidence? ............

16. Have you been bothered by aching or tired legs? ..................................

How often, **DURING THE LAST 2 WEEKS:**

17. Have you been limited in doing sports or exercise as a result of your heart problem? ..........................................................
### How often, **DURING THE LAST 2 WEEKS:**

<table>
<thead>
<tr>
<th>Question</th>
<th>All of the Time</th>
<th>Most of the Time</th>
<th>A Good Bit of the Time</th>
<th>Some of the Time</th>
<th>A Little of the Time</th>
<th>Hardly Any of the Time</th>
<th>None of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Have you felt apprehensive or frightened?</td>
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<td>19. Have you felt dizzy or lightheaded?</td>
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</tr>
</tbody>
</table>

### How often, **DURING THE LAST TWO WEEKS:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Extremely Limited</th>
<th>Very Limited</th>
<th>Limited Quite A Bit</th>
<th>Moderately Limited</th>
<th>Somewhat Limited</th>
<th>Limited A Little</th>
<th>Not Limited At All</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Have you been restricted or limited as a result of your heart problem?</td>
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</tbody>
</table>

### How often, during the **DURING THE LAST TWO WEEKS:**

<table>
<thead>
<tr>
<th>Question</th>
<th>All of the Time</th>
<th>Most of the Time</th>
<th>A Good Bit of the Time</th>
<th>Some of the Time</th>
<th>A Little of the Time</th>
<th>Hardly Any of the Time</th>
<th>None of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Have you felt unsure as to how much exercise or physical activity you should be doing?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>22. Have you felt as if your family is being over-protective toward you?</td>
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<tr>
<td>23. Have you felt as if you were a burden on others?</td>
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<tr>
<td>24. Have you felt excluded from doing things with other people because of your heart problem?</td>
<td></td>
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<tr>
<td>25. Have you felt unable to socialize because of your heart problem?</td>
<td></td>
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<tr>
<td>26. Have you felt your heart problem limited or interfered with sexual intercourse?</td>
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</tbody>
</table>

### How often, **DURING THE LAST TWO WEEKS:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Extremely Limited</th>
<th>Very Limited</th>
<th>Limited Quite A Bit</th>
<th>Moderately Limited</th>
<th>Somewhat Limited</th>
<th>Limited A Little</th>
<th>Not Limited At All</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. Have you been physically restricted or limited as a result of your heart problem?</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
APPENDIX F
SOCIAL SUPPORT MEASURE

Next are some questions about the support that is available to you.

1. About how many close friends and close relatives do you have (people you feel at ease with and can talk to about what is on your mind)? Write in number of close friends and close relatives: ______________

People sometimes look to others for companionship, assistance, or other types of support. **How often is each of the following kinds of support available to you if you need it?** (Please check the box that matches your answer)

<table>
<thead>
<tr>
<th>Question</th>
<th>None of the Time</th>
<th>A Little 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>2. Someone to help you if you were confined to bed…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Someone you can count on to listen to you when you need to talk…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Someone to give you good advice about a crisis…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Someone to take you to the doctor if you needed it…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Someone who shows you love and affection….</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. Someone to have a good time with…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. Someone to give you information to help you understand a situation…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. Someone to confide in or talk to about yourself or your problems…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. Someone who hugs you…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>11. Someone to get together with for relaxation…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>12. Someone to prepare your meals if you were unable to do it yourself…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>13. Someone whose advice you really want…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>14. Someone to do things with to help you get your mind off things…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>15. Someone to help with daily chores if you were sick</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>16. Someone to share your most private worries and fears with…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>17. Someone to turn to for suggestions about how to deal with a personal problem…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>18. Someone to do something enjoyable with…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>19. Someone who understands your problems…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>20. Someone to love and make you feel wanted…</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
</tbody>
</table>

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# APPENDIX G
## ACCULTURATION MEASURE

**SASH**

<table>
<thead>
<tr>
<th>Question</th>
<th>Only Spanish</th>
<th>Spanish Better than English</th>
<th>Both Equally</th>
<th>English Better than Spanish</th>
<th>Only English</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In general, what language(s) do you read and speak?...........</td>
<td></td>
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</tr>
<tr>
<td>2. What was the language(s) you used as a child?.................</td>
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<tr>
<td>3. What language(s) do you usually speak at home?..............</td>
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<tr>
<td>4. In what language(s) do you usually think?..................</td>
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</tr>
<tr>
<td>5. What language(s) do you usually speak with your friends?...........</td>
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<tr>
<td>6. In what language(s) are the T.V. programs you usually watch?........</td>
<td></td>
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<tr>
<td>7. In what language(s) are the radio programs you usually listen to?...</td>
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<tr>
<td>8. In general, in what language(s) are the movies, T.V. and radio programs you prefer to watch and listen to?</td>
<td></td>
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<tr>
<td>9. Your close friends are.........</td>
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<tr>
<td>10. You prefer going to social gatherings/parties at which the people are................</td>
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<tr>
<td>11. The persons you visit or who visit you are.....................</td>
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<tr>
<td>12. If you could choose your children’s friends, you would want them to be................</td>
<td></td>
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</tr>
</tbody>
</table>
Guido G. Urizar Jr. was born in Philadelphia, Pennsylvania, on August 3, 1974, to Guido and Gladys Urizar. Guido was raised in Miami, Florida, and graduated from Christopher Columbus High School in June 1992. Guido received his Bachelor of Sciences degree in psychology, from the University of Miami in Coral Gables, Florida, in December 1996. He was then accepted to the College of Health Professions at the University of Florida to pursue a Ph.D. degree in the Department of Clinical and Health Psychology. Guido is currently completing his clinical internship training at the University of California, San Francisco (UCSF) Department of Psychiatry in partial fulfillment of the requirements for the Doctor of Philosophy degree. This two-year clinical research training program includes both a predoctoral and postdoctoral training year in the Public Service and Minority Cluster at San Francisco General Hospital. Guido’s future career goals are to engage in clinical and research activities within an academic medical setting, focused in the health promotion of underserved populations.