CULTURAL STRENGTHS AND EATING BEHAVIOR

OF LATINA YOUNG ADULTS:

AN EXPLORATION OF ETHNIC IDENTITY, *FAMILISMO*, AND

SPIRITUALITY

OF EATING AND HEALTH-RELATED BEHAVIOR

by

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DISSERTATION ABSTRACT

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Title: Cultural Strengths and Eating Behavior of Latina Young Adults: An Exploration of Ethnic Identity, *Familismo*, and Spirituality of Eating and Health-related Behavior

Using a strength-based paradigm, this study explored resilience factors (i.e. ethnic identity, *familismo*, and spirituality) associated with a continuum of eating disorder (ED) and obesity risk variables, depression, anxiety, and acculturation among Latina women. Two models predicting psychological distress and ED outcomes were tested using cross-sectional data (N = 262) from an internet-based survey. Results indicated that cultural resilience factors were associated with less psychological distress, fewer ED symptoms, and less ED risk. Psychological distress partially mediated the relationship between cultural resilience and ED symptoms and risk, indicating the possibility of heightened ED risk when cultural resilience is low and psychological distress is high. Acculturation to U.S. mainstream culture was not associated with cultural resilience or negative outcomes; rather, biculturalism, or successful negotiation of both cultures, appeared to facilitate use of cultural practices and values that protect Latinas from negative eating behaviors and psychological outcomes. Implications for practice and future research are discussed.

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CHAPTER I

INTRODUCTION

A growing body of literature suggests that ethnic minority women experience disordered eating symptoms at similar rates to European American women, (Cachelin, Veisel, Barzegarnazari, & Striegel-Moore, 2000; Shaw, Ramirez, Trost, Randall, & Stice, 2004).Given the increasing literature indicating that Latinas are just as likely to engage in disordered eating behavior, it is necessary for researchers to examine psychosocial and cultural factors that may have protective effects on the health and well-being of this population (Gallo, Penedo, de los Monteros, & Arguelles, 2009). In the literature, researchers describe the cultural processes, including psychological, social, and behavioral processes that foster health and well-being among Latinos. Identified cultural processes include (among others) *familismo*; that is, valuing family relationships and viewing the family as a source of support; *ethnic identity:* a strong sense of identification with one's ethnic group; and *spirituality:* intimate and reciprocal relationships with a deity (e.g. God) that play an important role in health and well-being (Marin & Marin, 1991). Provided that these cultural factors often protect Latinos from poor psychosocial and disordered eating outcomes (Gil, Wagner, & Vega, 2000; Levin, Markides, & Ray, 1996; Roberts, et al., 1999; Rojas, Mandelblatt, Cagney, Kerner, & Freeman, 1996), it is important that scholars assess and target for intervention such cultural factors in an effort to foster Latina health.

In addition to studying populations with eating disorder diagnoses, many researchers include measurement of sub-threshold disordered behavior (i.e. not meeting

full criteria for diagnosis). Sub-threshold disorders in the general population are not only far more prevalent than clinical anorexia and bulimia nervosa, but are also associated with significant psychological distress (Dancyger & Garfinkel, 1995; Mintz & Betz, 1988). Although much of the available literature includes terminology such as "eating pathology, disordered eating, etc.", the following literature review includes studies that involve examination of subclinical disordered eating, and/or eating disorder risk related behavior, in addition to studies with participants who meet full eating disorder criteria.

For the purposes of this dissertation, the term *eating disorders* (ED) refers to the diagnostic syndromes of Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Binge Eating Disorder (BED). BED is a specific example of Eating Disorders Not Otherwise Specified and is a provisional diagnosis that was introduced in the 4th edition of the Diagnostic Manual of Mental Disorders (American Psychiatric Association, 2000). *Disordered eating* (DE) is used throughout this paper as a more inclusive term indicating elevated levels of individual symptoms such as weight concern, shape concern, body dissatisfaction, dietary restraints, and binge eating, as well as inappropriate compensatory behaviors of vomiting, excessive exercise, laxative use, and diuretic use. *Unhealthy eating* will be used as a broad term that encompasses ED, and DE behavior, as well as behavior known to place individuals at risk for obesity.

In the following sections, the literature on risk factors for unhealthy eating patterns, disordered eating, and negative body image is reviewed. The history of Latinas and women of color in the eating disorders literature is discussed, and an argument is made for scholars to include culturally relevant protective factors for the prevention of disordered eating behaviors of young Latinas.

CHAPTER II

LITERATURE REVIEW

History of Research on Disordered Eating and Latinas

In the United States, it is estimated that 10% of adolescent girls and young women experience clinical or subclinical anorexia nervosa (AN), bulimia nervosa (BN), or binge eating disorder (BED) (Hudson, Hiripi, Pope, & Kessler, 2007; Lewinsohn, Striegel-Moore, & Seeley, 2000). Regardless of meeting DSM-IV criteria, those who endorse clinical AN, BN, BED, or their subclinical forms are characterized by functional impairment, medical complications, and increased risk for future obesity, depression, suicide, anxiety disorders, substance abuse, and health problems (Johnson, Cohen, Kotler, Kasen, & Brook, 2002; Lewinsohn, et al., 2000; Stice, Cameron, Killen, Hayward, & Taylor, 1999; Wilson, Becker, & Heffernan, 2003).

The current state of research on Latinas eating behaviors is complex. On one hand, the “White, affluent, female only” myth (Alegria, et al., 2007) contributed to decades of excluding women of color from eating disorders research, leaving many ethnic- and culture- specific questions unanswered (e.g. coping, mental health correlates, cultural strengths and barriers, etc.). Conversely, recent nation-wide attention to the obesity epidemic has had a strong focus on research with women and men of color, establishing that Latinos and African-Americans residing in the United States have higher rates of obesity than other racial or ethnic groups (Flegal, Ogden, & Carroll, 2004; Hedley, et al., 2004)

The few researchers who have included Latina women in their research samples have found that Latinas may engage in binge eating and use self-induced vomiting, laxatives, diet pills and diuretics for weight and shape control at rates similar to those of Asian American (AA) and European American (EA) women (Crago & Shisslak, 2003; Regan & Cachelin, 2006). Some data suggest that binge eating may be more frequent and severe amongst Latina women than amongst EA women (Fitzgibbon, et al., 1998). A recent series of studies with Mexican American (MA) and EA women demonstrated that MA women primarily exhibited subclinical Bulimia Nervosa and Binge Eating Disorder, and were less likely than EA women to experience Anorexia Nervosa (Cachelin & Striegel-Moore, 2006). After conducting a meta-analysis of studies on the topic of disordered eating behaviors for women of color, using cross sectional and longitudinal designs, Brown and colleagues concluded that as with EA women, eating disorders for MA women are associated with psychiatric comorbidity, psychosocial impairment, obesity, body image disturbance, and sexual abuse (Brown, Cachelin, & Dohm, 2009).

Rising sociocultural stressors for Latinas may help elucidate the rise of unhealthy eating behavior among Latina women. Both Latina/o immigrants and U.S.-born Latinas/os alike may be vulnerable to ethnic-specific stressors, including stigmatization and discrimination (Brondolo, et al., 2005; Schneider, Hitlan, & Radhakrishnan, 2000; Smedley, Stith, & Nelson, 2003). Moreover, the harmful effects of ethnic discrimination can be compounded by discrimination related to low socioeconomic status (SES), nativity, or spoken language (Krieger, 2000). With U.S. anti-immigrant sentiment on the rise, experiences of stigmatization and discrimination (i.e. hate crimes) have become more frequent among Latinos (Federal Bureau of Investigation, 2011). Women of color,

in particular, are likely to experience racism, classism, acculturative stress, and emotional, physical, and sexual abuse. Latina women, therefore, may be especially vulnerable to stressors that increase their risk for unhealthy eating patterns and eating related survival strategies (Dounchis, Hayden, & Wilfley, 2001; Gordon, Castro, Sitnikov, & Holm-Denoma, 2010; Silverman, Raj, Mucci, & Hathaway, 2001; Smolak & Murnen, 2002; B. Thompson, 1996). Further, depending on the degree to which Latina women adopt U.S. mainstream values (i.e. acculturation), dominant European-centric beauty ideals may exacerbate body dissatisfaction; a beauty ideal that is culturally and phenotypically discrepant for Latinas and unattainable (Root, 1990). Given this wealth of research on the influence of culture on disordered eating behavior, it is important that researchers continue to investigate how intersections of cultural identity and what cultural experiences influence the development of disordered eating behaviors among Latina women.

Disordered Eating Theories

Several theories have been proposed to explain the incidence of disordered eating among the general population, as well as among women of color. The *sociocultural model* of eating disorders is one of the most thoroughly tested and supported models of body dissatisfaction and eating disorder development (J. K. Thompson & Stice, 2001). According to the sociocultural model, girls and women receive consistent messages from their social environment (e.g., parents, peers, and the media) that a very thin physique is attractive and desirable. Because most women cannot readily attain a thin physique, internalization of the thin ideal promotes body image discrepancy (‘‘I wish I were

thinner''), subsequent body dissatisfaction, and eating pathology (Stice & Shaw, 2002; J. K. Thompson & Stice, 2001). Thus, the sociocultural model presumes that the internalization of cultural messages regarding body shape plays a causal role in body dissatisfaction and eating pathology for women. For decades, mental health experts believed that women of color were immune to internalizing the thin American ideal because many ethnic minority cultures seems to value fuller body types and in turn were protected from body dissatisfaction and eating pathology (Crago, Shisslak, & Estes, 1996; Dolan, 1991; Hsu, 1987). Scholars now understand that women of color are not immune to disordered eating and have proposed using the sociocultural model to better understand the rise of such disordered eating patterns among women of color. For example, some scholars have proposed that women of color are at particular risk for body dissatisfaction due to additional pressures to fit European-American standards of beauty, which are more likely to be phenotypically discrepant (Evans & McConnell, 2003; Lau, Lum, Chronister, & Forrest, 2006; Root, 1990). Body types deemed as beautiful by mainstream society may seem especially unattainable for minority women whose physical attributes are often discrepant from the mainstream standard (e.g., regarding skin tone, facial features, and body proportions; Evans & McConnell, 2003). In sum, the sociocultural model of eating disorders is thought to be relevant for women of color after all given the discrepant beauty ideals faced by women of color (arguably more so than EA women), which leads to body dissatisfaction and subsequent eating disorder risk, depending on their adherence to mainstream values.

Alternately, the *multiracial feminist theory* challenges the notion that the sociocultural model is the only explanation for the development of disordered eating

among women of color. Proponents argue that the origins of eating problems for women of color have little to do with “vanity” or “appearance” but instead are part of survival strategies to deal with ecological stressors such as abuse, racism, classism and acculturation stress (Kempa & Thomas, 2000; B.Thompson, 1996). Results of Thompson’s qualitative study with a diverse group of women indicated that women engaged in culture-based resilience strategies to heal from their disordered eating behavior, including mentorship from other ethnic minority women, organizing faith-based discussion groups, and finding race-conscious therapists. Thompson recommended that DE researchers should attempt to understand underlying social contexts and investigate culturally relevant models.

Latinas and Obesity

Latinos and African-Americans residing in the United States have higher rates of obesity than other racial or ethnic groups (Flegal, et al., 2004; Hedley, et al., 2004). Further, recent findings on obesity show that generational status (i.e. longer time in the U.S.) is associated with increased BMI and obesity among several Latino subgroups (Bates, Acevedo-Garcia, Alegria, & Krieger, 2008). Although not historically studied together, eating disorder symptomology and obesity exhibit some of the same patterns and themes and, therefore, studying them together as a spectrum of body-related issues follows a logical rationale (Fairburn, Welch, Doll, Davies, & et al., 1997; Neumark-Sztainer, 2005).

One overlapping theme across ED and obesity research is binge eating disorder (BED). First, in clinical settings, individuals with BED patterns of eating, on average,

demonstrate higher rates of obesity than the general population (American Psychiatric Association, 2000) and in community samples, the majority meet medical criteria for "overweight"(American Psychiatric Association, 2000). Second, research also suggests that an individual can cross over from one condition to another. Fairburn, Welch, Doll, Davies, and O'Connor (1997) studied factors associated with the onset of bulimia nervosa (BN) for a community-based sample of women. A much higher percentage (40%) of women with BN had been overweight as children (an obesity risk-factor), as compared with only 15% of healthy control subjects (Fairburn, et al., 1997). Longitudinal studies also support an inverse link, whereby disordered eating in adolescence predicted an increased risk for obesity onset in adulthood (Haines, Neumark-Sztainer, Wall, & Story, 2007; Stice, et al., 1999). Third, loss of control when eating is both a symptom of BED and BN, and also an established risk factor for obesity. Fourth, research suggests that emotion-based eating is prevalent both for individuals engaging in "traditional" ED behaviors (e.g. anorexic or bulimic symptoms) as well as those who fit medical criteria for obesity. In other words, when eating or other weight control activities are used to cope with distress, the outcomes include a myriad of unhealthy behaviors that put individuals at great health risks.

Despite the relationship between BED and obesity, it is important to state that obesity is complex and not all individuals identified as obese suffer from binge eating disorder. The study of obesity is multifaceted and a comprehensive measurement of this phenomenon is outside the purview of this study (e.g. family history, food intake diaries, fMRI data of inhibitory control, etc.). Given the high prevalence of obesity among Latinos in the U.S. (Hedley, et al., 2004), however, it seems important to include obesity

related risk factors in this study. Further, as women of color are more likely to experience discrimination, poverty, and acculturative stress (B. Thompson, 1996), they may be at further risk of coping with such forms of oppression via food and weight related behaviors across the continuum.

Risk Factors for Disordered Eating

For the past 30 years*, ED* researchers have sought to understand risk factors associated with disordered eating behavior. Both depression and anxiety are known to play an important role in the development of unhealthy eating behavior with research indicating that both depression and anxiety are often comorbid with ED and DE (Bulik, Sullivan, Fear, & Joyce, 1997; Hudson, et al., 2007; Lewinsohn, et al., 2000). A significant body of research on depression and ED/DE also shows that depression plays multiple roles as a prospective risk factor, a maintenance factor, and an outcome of ED and DE behavior (Measelle, Stice, & Hogansen, 2006; Stice & Bearman, 2001; Wildes, Simons, & Marcus, 2005).

Acculturation has also received much attention as a potential risk factor for Latina women. A growing body of research suggests that acculturation to U.S. culture (i.e., the multidimensional process of cultural change resulting from the meeting of groups or individuals from different cultures; Chun, Organista, & Marin, 2003) has important implications for health. Research examining the relationship between acculturation and ED/DE shows strong support for the theory that Latinas with higher levels of acculturation to U.S. culture are at greater risk for ED/DE (Brown et al. 2009). In the

following subsections, the risk factors of depression and anxiety are discussed in greater detail.

Depression

Eating problems show high rates of co-occurrence with depressive symptoms (Lewinsohn, et al., 2000; Stice & Bearman, 2001). For example, with one cross-sectional study researchers found that depressed women endorsed significantly more subclinical eating disorder symptoms, dysfunctional attitudes about appearance, and body dissatisfaction than did control subjects (Wildes, et al., 2005). Researchers understand very little, however, about the processes that give rise to this comorbidity and their temporal relationship remains uncertain. Researchers examining developmental trajectories of co-occurring depressive, eating, antisocial, and substance abuse problems for female adolescents found that initial depression predicted increases in eating disorder and substance abuse symptoms (Measelle, et al., 2006). Study results indicate that depressive symptoms may act as a risk factor for disordered eating.

A different study suggests an alternative pathway, whereby dysfunctional eating behaviors and attitudes increase risk of depression. Using data from a longitudinal community study (N = 231), Stice and Bearman (2001) tested whether body-image and eating disturbances might partially explain the increase in adolescent girls' depression. They found that dieting, body image, and eating disturbances predicted subsequent increases in depressive symptoms over the course of several years (Stice & Bearman, 2001). Effects remained significant when other established gender-nonspecific risk factors for depression (i.e. social support and emotionality) were statistically controlled.

This finding is consistent with previous evidence that dieting predicted onset of major depression among adolescent girls (Stice, Telch, & Rizvi, 2000), and it provides support for the assertion that dieting has negative psychological consequences. Results from the Stice and Bearman study suggest that eating disturbances contribute to adolescent girls' elevated depression. Furthermore, the nature of these analyses, in which initial levels of elevated DE risk factors (i.e. body image, dieting) predicted subsequent increases in depressive symptoms, challenge the notion that body-image and eating-disturbance-related risk factors are simply concomitants or consequences of depression.

Anxiety

Disordered eating has also been associated with anxiety symptomology. Results from a national comorbidity study (Hudson, et al., 2007) showed that rates were higher for comorbid anxiety and eating disorders than rates for comorbid depression and eating disorders. Bulik and colleagues found lifetime co-morbidity rates that ranged from 57-60% across participants with AN and BN diagnoses (Bulik, Sullivan, Carter, & Joyce, 1996; Bulik, et al., 1997). Results from another study were that adolescent females who endorsed higher levels of disordered eating behaviors were more likely to endorse higher anxiety and lower self esteem (Fisher, Schneider, Pegler, & Napolitano, 1991).

Acculturation to U.S. Mainstream Culture

Acculturation is a multidimensional construct (Chun, Balls Organista, & Marin, 2003) defined as changes in cultural values, behaviors and attitudes that result from continuous contact between two or more distinct cultures (Berry, 1990). According to

the bidimensional model of acculturation, the extent to which people are immersed in their indigenous culture is conceptualized as independent of their immersion in the dominant culture. In other words, Latinas can be immersed solely in their indigenous culture (i.e., Separated, Traditional), solely in U.S. mainstream culture (Assimilated, Acculturated), in both (Biculturalism), or in neither (Marginalization). Unfortunately, measurement of acculturation and eating disorders has included both uni- and bi-dimensional measurement tools, which has likely contributed to mixed results. Those who have measured acculturation bidimensionally, however, have identified a link between acculturation and eating disorder concerns among Latina women such that higher levels of acculturation to mainstream U.S. society have been associated with increased levels of eating disordered behaviors and attitudes (Cachelin, Phinney, Schug, & Striegel-Moore, 2006; Cachelin, et al., 2000).

Growing evidence indicates that even though some Latin American cultures are more appreciative of larger body types than is mainstream U.S. culture (Chamorro & Flores-Ortiz, 2000), increased exposure to mainstream U.S. values (through television and other media sources) may be producing heightened sociocultural pressures toward thinness among women of ethnic minority groups in the United States. Media is saturated with images of thin women, with exhortations about the importance of thinness as a marker of interpersonal and financial success, and advice about how to achieve this unrealistically thin body size (Smolak & Striegel-Moore, 2001). It may be the case that acculturation to mainstream U.S. society, therefore, is accompanied by changes in conceptualization of the ideal body, which can help explain Latina women's vulnerability to eating- and body-related concerns.

Cultural Strengths

A central aim of this study is to work from a strength-based framework to examine specific factors that may protect Latinas against eating- and body-related concerns. Three culturally related factors that may foster Latina women's resilience were identified as possibilities from the literature: ethnic identity, *familismo*, and spirituality. Employing a strength-based framework is consistent with research recommendations to study resilience oriented aspects of culture (Luthar, Cicchetti, & Becker, 2000) as well as an appeal to move beyond main effects to studies that highlight the conditions under which cultural values, such as ethnic identity, *familismo*, and spirituality, operate as sources of strength (Cauce & Domenech-Rodriguez, 2002). Only one other study has attempted a cross-sectional investigation of the relationship between these culturally relevant strengths and eating- and body-related concerns with a group of Mexican American women (Bettendorf & Fischer, 2009). Bettendorf & Fischer explored whether ethnic identity, *familismo*, and enculturation operated as sources of strength for 209 Mexican American women by buffering the relationship between their acculturation to the mainstream U.S. society and eating- and body-related concerns. Consistent with their hypothesis, *familismo* significantly moderated the relationship between acculturation to mainstream U.S. culture and eating disorders symptomology. Enculturation did not moderate the associations and ethnic identity moderated only the link between acculturation and restricted eating (Bettendorf et al. 2009). The present study built on this research by examining *familismo*, ethnic identity, and spirituality (i.e. cultural resilience) as mediators of the relationship between acculturation to US mainstream

culture and unhealthy eating behaviors. These cultural resilience indicators were also examined in direct relation to DE outcomes and the mediating role of psychological distress. The following sub-sections explain these cultural factors in greater detail.

Ethnic Identity

Ethnic identity refers to one's sense of belonging to an ethnic group as well as attitudes and feelings about one's ethnicity (Phinney, 2003; Umaña-Taylor, Vargas-Chanes, Garcia, & Gonzales-Backen, 2008). Ethnic identity may be particularly relevant to the understanding of eating disorders and body image because it is integral to one's sense of self, particularly for minorities (Phinney, 2003). Some scholars have proposed that persons of color experience a unique risk for negative body image due to additional pressures to fit EA standards of beauty, which are more likely to be phenotypically discrepant and unobtainable (Harris & Kuba, 1997). Given that ethnic identity has been shown to be associated positively with psychological well-being and negatively with depression and loneliness (Roberts, et al., 1999), a stronger sense of identification with and resolution about one's ethnic identity may protect against poor mental health outcomes, including the development of unhealthy eating behaviors. A strong sense of belonging to their Latina ethnic group, and/or positive feelings about being Latina, may be protective if such identification de-emphasizes appearance-related attributes, for example (Root, 1990).

Despite growing research on ethnic identity and eating disorders with African American women, few studies have investigated this link with Latina women, and among those, findings were mixed. For example, Cachelin and colleagues found that ethnic

identity did not predict a DSM-IV diagnosis of eating disorders for a group of Mexican women (Cachelin et al. 2006). Correlational results among the eating disorder group demonstrated, however, that Multi-group Ethnic Identity Measure (MEIM) sum scores were negatively associated with vomiting frequency and positively associated with degree of distress regarding binge eating. In other words, "stronger" Mexican ethnic identity seemed to protect against the more pathological symptom of purging, but authors note that the sample size wasn't large enough to provide statistical power on this analysis and should be viewed as preliminary (Cachelin et al. 2006).

In a different study, ethnic identity was not significant as a moderator between acculturation and body dissatisfaction or bulimic symptoms. However, ethnic identity moderated the link between acculturation and restrictive eating (Bettendorf & Fischer, 2009). Taken together, these findings suggest that ethnic identity might play an important role in unhealthy eating behavior; however, more research is needed to ascertain the strength of this relationship. Further, the few studies that exist have significant limitations, including small sample size and unidimensional measurement of acculturation.

Familismo

Familismo is considered a core value of Latino culture (Zinn, 1982) and has been defined as a cultural value that involves an individual's strong identification with and attachment to his or her nuclear and extended families and strong feelings of loyalty, reciprocity, and solidarity among members of the same family (Cauce & Domenech-Rodriguez, 2002; Cortes, 1995). *Familismo* has received attention in ethnic minority

psychology because of its foreseeable effects on psychological adjustment (Knight, et al., 2010; Steidel & Contreras, 2003). The limited research examining the effects of this construct on the psychological functioning among Latino populations has found mixed results, with most studies suggesting a positive association (Fuligni, Tseng, & Lam, 1999; Suárez-Orozco & Suárez-Orozco, 1995) and others a negative one (Mirande, 1980). For example, higher *familismo* has been associated with lower substance use (Gil, Wagner, & Vega, 2000) and lower interpersonal violence (Sommers, Fagan, & Baskin, 1993).

Knight and colleagues recently conducted an in-depth family values study with over 598 Mexican American families in Southwest U.S. (Knight, et al., 2010), which included participation from adolescents, young adults, and parents. Conducting a series of exploratory and confirmatory factor analyses, Knight et al. found that *familismo* was comprised of three dimensions: emotional support, obligation, and family as referent (Knight et al., 2010). Among participants, *emotional support* was comprised of family unity, desirability to maintain close relationships, and unconditional support in times of need. *Obligation* was comprised of the belief that everyone in the family is responsible for each other's well-being, and includes both tangible caregiving across generations, and potentially sacrificing one's own needs and desires if they interfere with those of the family. *Family as referent* represented the reliance on communal interpersonal reflection to define the self. It is the belief that even as adults, one's hard work and behavior will reflect on the identity of the entire family, and therefore family members should make decisions and behave in a way that will honor the family.

Social support is a known protective factor that mitigates the effects of body dissatisfaction and disordered eating symptoms (Stice, 2002), and low perceived social

support from the family has also been found as a risk factor for the development of eating disorders (Ghaderi, 2003). For Latinas at risk of body dissatisfaction and unhealthy eating behaviors, the support dimension of *familismo* may help absorb the distress associated with risk (e.g. anxiety, depression, & acculturative stress). Further, a sense of obligation to one's family may decrease the likelihood that young Latina women would direct efforts to cope with stress internally, minimizing individually-focused efforts such as food restriction, body dissatisfaction, or emotional eating.

Spirituality

Spirituality comprises a significant dimension of Latina/o psychology (Zea, Mason, & Murguia, 2000) and differs from organized religion because it transcends religious affiliation (Comas-Díaz, 2006). As a way of life, spirituality helps many Latinos to deepen their sense of meaning and purpose. Problems and obstacles are interpreted as trials, where the goal is to fulfill one's life mission (Munoz & Mendelson, 2005). Moreover, spirituality shapes how Latinos raise and socialize their children, and has a celebratory and festive character because it teaches that despite adversity, life is full of blessings (Comas-Díaz, 2006).

Research associates both spirituality and religiosity with the health of women of color, where a sense of spiritual connection helps many Latinos who struggle with isolation, psychological distress, acculturative distress, and substance abuse (Musgrave, Allen, & Allen, 2002). Most of the empirical research in spirituality and religiosity among Latinos has targeted primarily Mexican Americans. These investigations indicate that spirituality and religiosity are interwoven with their daily lives and serve as

foundations of strength in coping with life's struggles. For example, spirituality was associated with psychological well-being across three generations of Mexican American families (Levin, Markides, & Ray, 1996) and with physical health status among Mexican American women (Rojas, Mandelblatt, Cagney, Kerner, & Freeman, 1996). In general, it is understood that for Latinos, faith plays an important role in health; however, more research is warranted on the specific moderating and mediating roles that spirituality plays in mental health outcomes.

There is also growing attention to the role of religion and spirituality in psychotherapy conducted with individuals or families with eating disorders (Forthun, Pidcock, & Fischer, 2003; Mahoney, et al., 2005). Recent empirical work has shown that women's spirituality/religiosity has a positive relationship with their body image. Researchers have shown that the more college women view their bodies as being expressions of God and as having sacred qualities (e.g., blessed, holy), the higher their body image (Mahoney et al. 2005). In addition, feeling better about one's weight and appearance is related to praying more, having a closer relationship with God, and having higher intrinsic religious orientation (Boyatzis & McConnell, 2006). Support for the positive role of spirituality and religiosity also comes from qualitative data showing that when women describe in writing whether and how religion affects their body image, the impact is typically positive (Boyatzis et al. 2006). Thus, evidence from multiple samples and multiple measures has pointed to a healthy association between spirituality and young adult women's satisfaction with their bodies.

As with other contextual variables, Latinas have been underrepresented in research examining the roles of spirituality and religion with eating disorder and eating

disorder risk behavior. Given the importance of spirituality for many Latina women, it is unfortunate that Latina spirituality has never been examined as a potential protective factor for eating behaviors and attitudes. One aim of this study is to bridge this gap.

Summary

Unhealthy and disordered eating attitudes and behaviors are significant health issues for young Latina females. More research that includes culture-specific risk and protective factors is needed to improve prevention and intervention efforts with this population. The research reviewed highlights how constructs that are central to Latino psychology, such as ethnic identity, *familismo*, and spirituality have been shown to reduce risk for negative mental health outcomes. Researchers have called for consideration of the realities of Latina women's cultural contexts in developing culturally competent, feminist-driven, and empowerment-focused prevention strategies. This dissertation study, therefore, examined how Latina women's intersecting cultural schemas impact their eating and health related behavior.

Study Purpose

The purpose of the present study was to explore the relationships between acculturation, psychological health, cultural strengths, and eating disorder pathology and risk related variables with a sample of Latina young adults. The primary goals of this study were to: (1) increase awareness and understanding of a broad range of disordered eating patterns among Latinas by learning more about the prevalence of eating disorder- and obesity-risk variables among Latina young adults; (2) increase understanding of

culture-specific resiliency factors that may buffer the effects of DE risk variables among young adult Latina women; and (3) contribute to a growing body of literature examining DE in non-clinical samples in order to strengthen prevention and intervention efforts aimed at populations at risk for clinical DE.

Based on the literature, I developed two models that portray the hypothesized relationships among the variables (see Figures 1 & 2). I hypothesized that : a) strength of cultural-specific variables (EI, *familismo*, and spirituality) would mediate the relationship between *Acculturation to U.S. Mainstream culture* (acculturation to Non-Hispanic/Latino culture, and generational status) and eating and health related variables; b) *Psychological Distress* would mediate the relationship between *Cultural Resilience* (EI, *familismo*, and spirituality) and eating and health related variables.; c) a positive relationship would be present between higher *ED* and *Obesity Risk* and higher *Acculturation to U.S. Mainstream culture* ; d) an inverse relationship would exist between greater *Cultural Resilience* and lower *ED* and *Obesity Risk* related criterion variables; e) an inverse relationships would be present between *Cultural Resilience* and *Psychological Distress* , with greater levels of *Cultural Resilience* being associated with lower levels of *Psychological Distress*, and f) a positive relationship would exist between *Psychological Distress* and eating behaviors, with higher distress symptomology being associated with higher levels of *ED* and *Obesity Risk*.

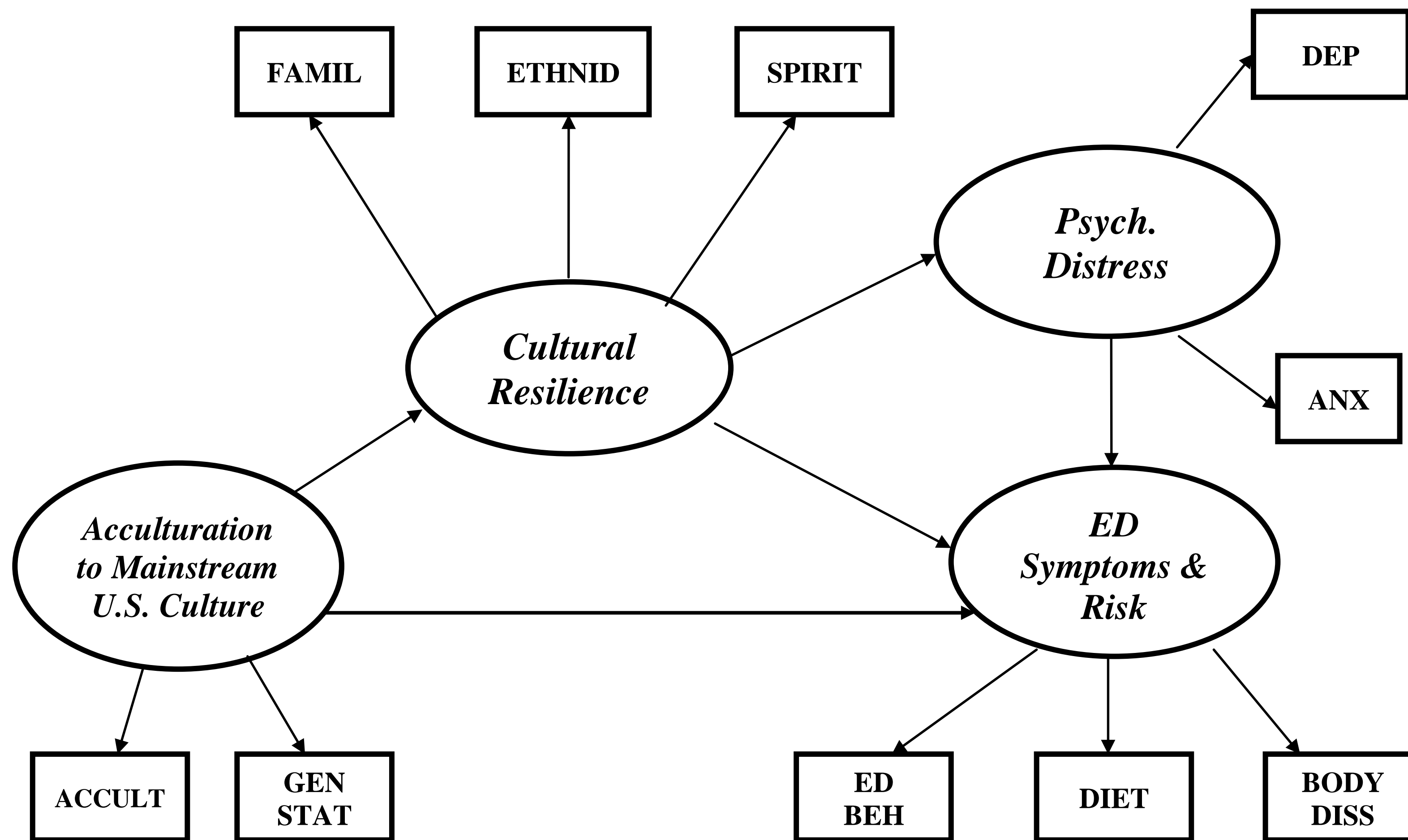

FIGURE 1. Cultural predictors of Latinas' psychological distress and ED risk.

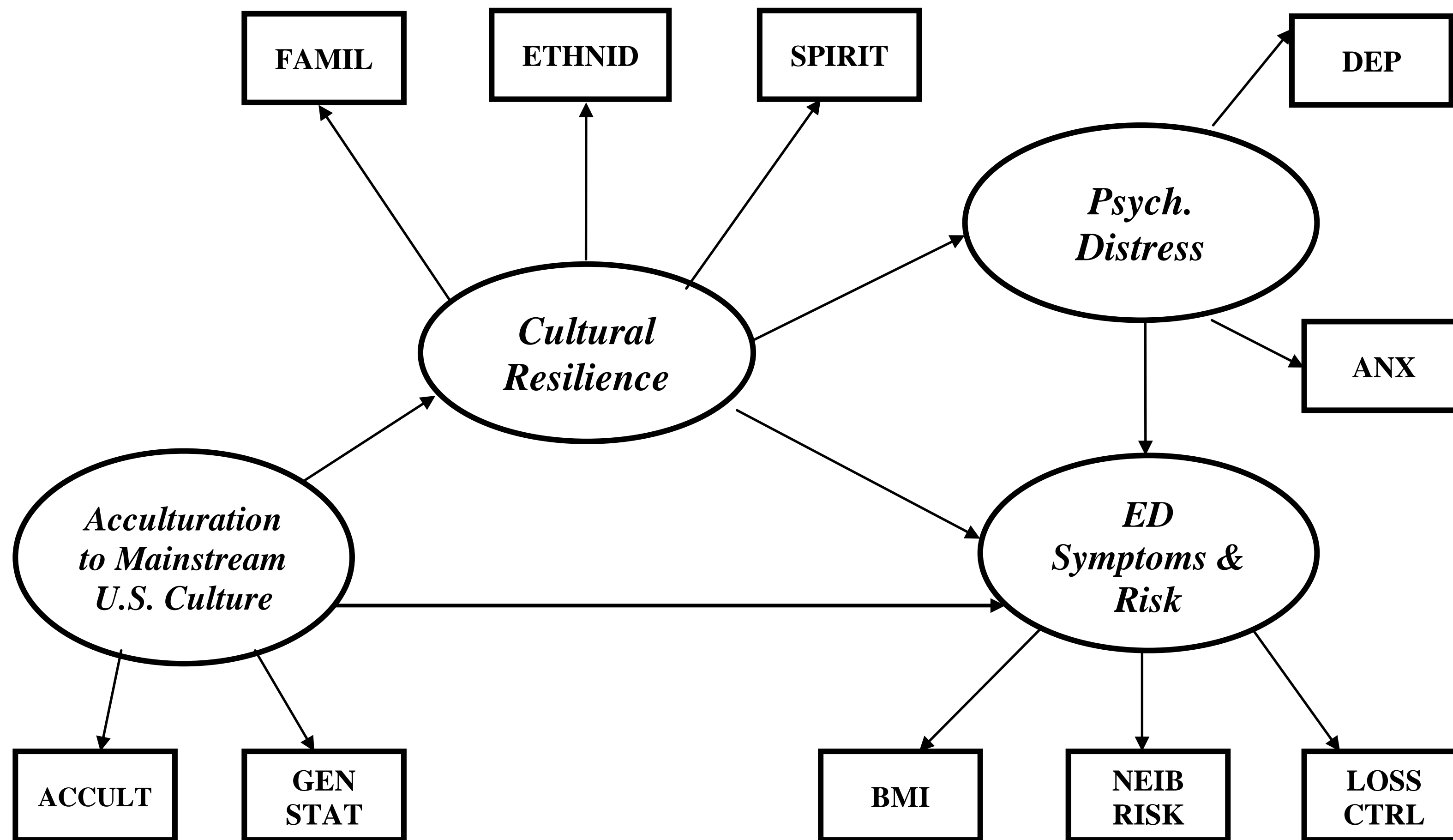

FIGURE 2. Cultural predictors of Latinas' psychological distress and obesity risk.

CHAPTER III

METHODOLOGY

Participants

Eligibility criteria for participation included being: (1) a female identifying as Hispanic/Latina, (2) between the ages of 18-25, and (3) able to read and write English or Spanish. A total of 262 participants consented to participate and complete the web survey. Of the total 262, 12 participants were excluded on the basis of eligibility because they dropped out of the survey before providing their age and/or race/ethnicity. Of the remaining 250 participants who fit study eligibility criteria, 22 did not complete the entire survey. Following Dempster, Laird, & Rubin's (1977) guidelines for missing data, the estimation maximization (EM) algorithm for maximum likelihood was utilized to retain these cases in the analyses. See Analysis section for further description of missing data procedures.

Participants selected labels that fit their ethnic identification and could choose to select more than one category. Table 1 provides participant ethnicity, geographic location, and migration history data. Participants ranged in age from 18-25 years with a mean age of 21.8 (*SD* = 2.1). The majority of participants reported an annual income of less than $22,000 (71.4%) and about half (51.5%) reported that their parent's(s') annual combined income was less than $60,000.

Most of the participants, 61.5%, were currently enrolled in a 4-year college or had earned a Bachelor's degree (*n* = 161). Nineteen percent 19.4% reported some graduate school (*n* = 51) experience and 5% (*n* = 13) were currently enrolled in a community college or held an associate's degree.

TABLE 1. Descriptive Statistics of Participants (N = 250)

Demographic Variable	N	%
Ethnicity		
Latina	137	54.6
Hispanic	115	45.8
Mexican/Mexican American	94	37.5
Chicana	38	15.1
Central American	34	13.5
Puerto Rican	33	13.1
South American	30	12.0
Cuban/Cuban American	22	8.8
Spanish/Spanish American	8	3.2
Multi-ethnic*	16	6.4
State of Residence (U.S. Region)		
Oregon	51	19.5
California	47	18.0
Florida	34	13.0
New York	29	11.1
Texas	10	3.8
New Jersey	8	3.1
Washington	7	2.7
Illinois	6	2.3
Remaining 22 states (< 6 participants)	60	26.5
Age began living in U.S.		
Born in U.S.	193	73.7
Age 6 or younger	27	10.3
Age 7 – 17years	14	5.3
Age 18 or older	5	1.9
Parents born outside the U.S.		
Both parents born outside the U.S.	155	59.2

One parent born outside the U.S.	42	18
Neither parent born outside the U.S.	36	13.7

Note. * Includes multi-ethnic identities with Hispanic/Latino origins (i.e., two or more Latino/Hispanic ethnic groups) and biracial identities (i.e., one Latino/Hispanic group and one or more non-Latino/Hispanic group).

The majority of the sample (91%) reported having religious or spiritual beliefs: Catholic (46%), Protestant/Christian (16.3%), "Spiritual, but do not affiliate with an organized religion" (15%), Agnostic (7%). A total of 25 participants (9.5%) reported not having a "religion/spiritual orientation". With regard to sexual orientation, 78% (n = 204) of the participants reported a heterosexual orientation, with the remaining reporting bisexual (n = 21), queer (n = 8), lesbian (n = 2), or other (n = 3). No one endorsed the option "Trans" and 12 participants did not report their sexual orientation.

Although this study focused on continua of disordered eating behaviors, symptoms, and risk, rather than diagnoses, DSM-IV eating disorder clinical diagnoses (calculated by the EDDS scoring algorithm; Stice & Telch, 2002) are shared here for the purposes of demographic information. More than half of participants (61%) did not meet criteria for full- or sub-threshold eating disorder criteria. Among those that met criteria, 15 percent (n = 40) met full threshold bulimia nervosa (BN) criteria, five percent (n = 3) met criteria for sub-threshold BN, and three percent (n = 6) met criteria for sub-threshold anorexia nervosa (AN). About half of participants (51%) were within "healthy" weight range based on their body mass index (BMI ranged from 18-24.9). Less than three percent (n =6) were "underweight", approximately 16 percent (n=42) met "overweight" criteria, and approximately 12 percent reported BMI indices that qualify as "obese".

Procedures

Participant Recruitment

Participants were recruited using four methods: email solicitations, postings on the internet social networking website Facebook, flyers posted and distributed to university campuses and community agencies, and snowball sampling. Email advertising involved targeting approximately 25 national or regional universities, and/or network-based groups with a focus on multicultural populations (i.e., ethnic minority groups, women's groups), Latino membership (e.g. National Latina/o Psychology Association), and/or Latino student-related groups (i.e., MEChA, Mujeres, Latina sororities). These groups were selected based on their focus on Latina/o issues, and/or likelihood of Latina participation and affiliation. Once groups were identified, email solicitations were sent to organization leaders requesting distribution to their members via their group listserves. In addition to post-secondary education based listserves, recruitment emails were sent to community leaders and advocates who work with or have access to young adult Latino networks. These leaders were identified via professional relationships with local community members and via existing social networks. This email and all recruitment documents are presented in Appendix B.

The second recruitment method involved the internet social networking engine, Facebook. Facebook was used to reach a diverse range of young Latina women, especially those who may not be enrolled in a college or university. The study description and invitation to participate were posted on the Facebook walls of family members,

friends, colleagues, and interest groups such as regional MEChA chapters, regional Latina sorority chapters, and Community Alliance for Lane County in Oregon.

The third recruitment method involved posting study flyers at colleges and universities that were accessible through professional networks: University of Oregon, Oregon State University, Lane Community College, Loyola Marymount University, and Santa Ana Community College campuses. In addition, permission to post flyers on community boards was granted from owners of Plaza Latina market and the YMCA in Eugene, Oregon. Colleagues with access to informational boards printed flyers to post around their respective university and community settings. The flyer is presented in Appendix A.

The final method of recruitment involved snowball sampling (Gall, 2003) whereby participants identified other participants for the study. Current participants were asked to forward the email solicitation and invitation to participate to other eligible participants and to listserves that might reach eligible participants. Upon completion of the survey, all participants were again prompted to forward the survey web link to other individuals and listserves.

Data Collection

Data were collected online, using Qualtrics (Qualtrics Labs, Inc., 2009), a secure web-based survey data collection service. A gift card drawing was used as a research incentive whereby participants could be randomly selected to receive one of eight $40 gift cards to the store of their choice among the following options: iTunes, Forever 21, DSW Shoes, Macy's, Barnes & Noble, or Starbucks Coffee. One name was drawn for

every 31 participants; therefore, each participant had a 1 in 31 chance to win a gift card. After completion of the survey, participants were asked if they wished to participate in the gift card drawing, and they were informed that the contact information provided for the drawing would not be linked to their survey responses. Those who chose to participate were directed to a new page requesting their name and mailing address; the page reiterated that their identifying information was not linked to their survey responses.

To gain an estimated survey completion time, the complete survey was piloted with six graduate student volunteers. Each reported a completion time between 15 and 20 minutes. See Appendix B for the questionnaire format as presented on the web via Qualtrics.

Measures

This section describes the measures used in the study. Per author scoring instructions, aggregate scores were computed for the Eating Disorders Diagnostic Scale (EDDS), the Cognitive Behavioral Dieting Scale (CBDS), and the Body Shape Questionnaire-8 (BSQ-8). All other aggregate scores were attained by computing mean scores, per author scoring instructions. Table 2 provides a list of the constructs, measures, means, SDs, and reliability coefficients for measured variables. All measures are included in Appendix B as presented in Qualtrics.

Demographics Questionnaire

The 10-item demographics questionnaire included age, ethnicity, education, country of origin, current state of residence, spiritual/religious affiliation, annual income,

and sexual orientation. In addition, participants endorsed the age range for when they began living in the US (or if they were born in the US), as well as their generational status (i.e., if one or both parents were born outside of the US). All items were self-report. Country of origin and current state of residence were reported using an open-ended format. All other questions provided a list of options and asked participants to fill in a bubble to indicate the answer(s) that best matched their situation. Categorical ranges of income for target participants and their parents were loosely based on ranges established by the US Department of Health & Human Services federal income poverty guidelines (U.S. Department of Health & Human Services, 2012).

Psychological Distress Indicators

Depression and Anxiety. Psychological distress was measured using the "Depression" and "Anxiety" subscales of the Brief Symptom Inventory (Derogatis & Melisaratos, 1983). Participants were asked to endorse the option that best described the amount of discomfort that the subscale symptoms have caused within the last two weeks. Response options ranged from (1) *not at all* to (5) *very much* on items such as "feeling blue" and "nervousness or shakiness inside". Psychometric data for the BSI has been collected with a broad range of populations (Derogatis & Savitz, 2000), including Latino adults in residential mental health care treatment (Hoe & Brekke, 2009). For a community sample of Latina and African American adult women, Cronbach's alphas of .80 and .79 were calculated for the Depression and Anxiety subscales, respectively (Lester, et al., 2010). Cronbach's alphas of.86 and .82 were calculated with the present study sample for the Depression and Anxiety subscales, respectively.

Acculturation to U.S. Mainstream Culture Indicators

Acculturation to non-Hispanic/Latino culture (ACCULT). The degree to which participants endorsed *acculturation to non-Hispanic/Latino culture* was assessed using the Bidimensional Acculturation Scale for Hispanics (Marin & Gamba, 1996). The BAS provides an acculturation score for two major cultural dimensions, Hispanic/Latino and Non-Hispanic/Latino. Each dimension is assessed with 12 items (per cultural domain) that measure two language-related areas: "Non-Hispanic Linguistic Proficiency" and "Non-Hispanic Electronic Media Use". Mean scores of both language-related areas were used to assess level of acculturation to non-Hispanic/Latino culture. Response options ranged from (1) *very poorly* to (5) *very well* on items such as "how well do you understand music in English". Participants also responded to the same questions in regard to their Spanish use, which comprised the "Hispanic/Latino Domain" subscales. Cronbach's alphas of .69 for "Non-Hispanic/Latino Cultural Domains" and .93 for "Hispanic Latino Cultural Domains" were calculated with the present study sample. Per author guidelines, both domain scales may be combined for a total biculturalism score, which reports the extent to which participants are acculturated to both non-Hispanic/Latino and Hispanic/Latino cultural domains. Biculturalism (BICULT) scores were calculated using author guidelines.

Generational Status (GEN STAT). Generational status was assessed by asking participants to endorse whether both (score = 1), one (score = 2), or neither? of their parents (score = 3) were born outside of the U.S. The more parents born in the U.S., the

higher their generational status score (i.e. higher scores indicated longer passage of time since family's migration experience). This type of assessment and scoring are supported by a growing body of theoretical literature and empirical data emphasizing the link between generational status and acculturation to mainstream U.S. culture (Dinh & Bond, 2008; Hsiao & Wittig, 2008).

Cultural Resilience Indicators

Familismo (FAMIL). This construct was measured using the three "Familismo" subscales of the Mexican American Cultural Values Scale for Adolescents and Adults (Knight, et al., 2010). The six-item "Support" subscale measures the extent to which one's family provides a sense of security, cohesiveness, and connectedness. The five-item "Obligation" subscale addresses the degree to which one helps, cares for, and makes sacrifices for immediate and extended family. The five-item "Referent" subscale measures the extent to which one seeks advice from family members when making important decisions, considers how decisions will impact the family, and represents the family in a positive manner. All three subscales comprise a total of 16 items, which were summed to create an overall *Familismo* composite score. Participants were asked to rate the extent to which they agree with each item, which ranged from (1) *not at all* to (5) *completely* on items such as "It is important to work hard and do one's best because this reflects on the family" and "family provides a sense of security because they will always be there for you". With a community sample of Mexican American adult women, Chronbach's alpha of .88 was calculated (Bettendorf & Fischer, 2009). A Cronbach's alpha of .93 was calculated with the present study sample.

Ethnic Identity (ETHNID). The "Affirmation" subscale of the Ethnic Identity Scale (Umaña-Taylor, Yazedjian, & Bamaca, 2004) was used to measure ethnic identity affirmation. The EIS builds on theoretical perspectives of a stage model of ethnic identity that differentiates "Resolution" (the degree to which an individual has resolved what his/her ethnic identity means to her/him) and "Affirmation" (the positive or negative affect that s/he associates with that resolution). Utilizing the Affirmation subscale is consistent with the study's theoretical understanding that women of color may have negative feelings about being or looking like an ethnic minority (i.e., low affirmation), even if they have resolved what their ethnicity means to them. Participants endorsed the extent to which item statements describe them from (1) *does not describe me at all* to (4) *describes me very well.* Sample items included *"*I dislike my ethnicity*"* and "I wish I were of a different ethnicity. A coefficient alpha of .86 was calculated for the Affirmation subscale with a multi-racial community sample of young adults (Umaña-Taylor, et al., 2004). A Cronbach's alpha of .86 for the Affirmation subscale was calculated with the present study sample.

Spirituality (SPIRIT). The Intrinsic Spirituality Scale (Hodge, 2003) was used to measure spirituality, which assesses the degree to which spirituality plays a role in participants' functioning. The ISS is a six-item measure that has been used with both theistic and non-theistic populations, with inclusive language for non-religious individuals. Participants endorsed responses on an 11-point Likert-type scale about the role of spirituality in their lives. For example, one item asks participants to consider the

beginning of the sentence "*My spiritual beliefs affect*:"and respond on a continuum that ranges from *(0)" no aspect of my life"* to (10) "*absolutely every aspect of my life".* For a group of 17-25 year olds who were predominantly female, a Cronbach's alpha of .80 was calculated (Hodge, 2003). A Cronbach's alpha of .97 was calculated with the present study sample.

Eating Disorder Symptoms and Risk Indicators

Disordered Eating Behavior (EATBEH). Disordered eating behavior was measured using the Eating Disorder Diagnostic Scale (Stice, et al., 2000), which assesses bulimic, binge eating, excessive exercise, and restriction symptoms. The EDDS contains 22 questions that measure the DSM-IV diagnostic criteria for BN, AN, and binge eating disorder (BED). Participants answered questions about disordered eating attitudes such as "Has your weight influenced how you think about (judge) yourself as a person?" and "Have you had a definite fear that you might gain weight or become fat?" Response options ranged along a 7-point Likert-type scale from (0) *not at all* to (6) *extremely*. Participants also answered dichotomous questions (yes/no) such as "have there been times when you felt you have eaten what other people would regard as an unusually large amount of food..?" In addition, there were symptom severity questions such as "How many times per week on average have you made yourself vomit to prevent weight gain or counteract the effect of eating?", which offer broad response ranges (i.e., 0-14 scale). Aggregate scores (i.e., overall symptom sum) and sub-clinical and full threshold eating diagnoses were calculated using scoring algorithms published by the EDDS authors. Test re-test reliability and internal consistency for the EDDS reported by the authors were

strong for the overall symptom composite (kappa=.87 and alpha=.91, respectively) with a sample of predominantly European American females recruited from randomized AN, BN, and BED treatment clinical trials. The EDDS has been used to measure symptomology among low-income, urban college student Latinas (Gentile, Raghavan, Rajah, & Gates, 2007; Napolitano & Himes, 2011). A Cronbach's alpha of .97 was calculated with the present study sample.

Dieting (DIET). Dieting was measured with the 14-item Cognitive Behavioral Dieting Scale (Martz, Sturgis, & Gustafson, 1996), which measures participants' dieting behavior and thoughts over the past two weeks. Two, 5-point Likert-type scales comprise the CBDS with responses ranging from (1) never to (5) always for responses about dieting behavior and (1) strongly disagree to (5) strongly agree for responses about dieting thoughts. Sample items include "I have used the nutritional labels of foods to determine if I eat a certain food or not" and "I have felt guilty about something I ate". Martz and colleagues (1996) calculated a Cronbach's alpha of .95 for a group of undergraduate females from a large south-eastern university. A Cronbach's alpha of .94 was calculated with the present study sample.

Body Dissatisfaction (BODYDISS). Body dissatisfaction was measured using the Body Satisfaction Questionnaire-8 (BSQ-8; C. Evans & Dolan, 1993). The original BSQ is a 34-item body image questionnaire using a 6 point Likert format with scores ranging from 16 to 96. The BSQ measures body dissatisfaction and feelings of low self-worth in connection with weight and shape (Cooper, Taylor, Cooper, & Fairburn, 1987). Evans &

Dolan (1993) found that most items measure the same underlying construct—concern with shape – and therefore, developed an abbreviated 8-item scale with nearly identical psychometrics as the lengthier version (Evans & Dolan, 1993). Response options ranged from (1) *never* to (6) *always* on items such as "Have you worried about your skin not being firm enough?" and "Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)?" For a sample of Mexican American university students in the southwest, a Chronbach's alpha of.97 was calculated (Warren, Gleaves, Cepeda-Benito, del Carmen Fernandez, & Rodriguez-Ruiz, 2005). A Chronbach's alpha of .88 was calculated with the present study sample.

Obesity Risk Indicators

Body Mass Index (BMI). BMI was measured using two fill-in items from the EDDS (described above) and is based on the ratio of weight in kilograms to the height in meters (Cogan, Smith & Maine, 2008). The questions "How much do you weigh?" and "How tall are you?" allowed participants to fill in their best estimated weight and height. BMI was then calculated using SPSS code provided by EDDS authors.

Loss of Control (LOSSCTRL). Loss of control (when eating) was measured using eight items from the EDDS (described above). These selected items measure the regulatory aspect of binge-eating and subsequent cognitive-emotional symptoms. Response options were *(0)* No or *(1)* Yes on questions such as "During the times when you ate an unusually large amount of food, did you experience a loss of control" and "During these episodes, did you eat alone because you were embarrassed by how much

you were eating?" A Chronbach's alpha of .91 was calculated with the present study sample.

Neighborhood Risk (NEIGHBRISK). Neighborhood risk was measured using three subscales of the Self-Reported Neighborhood Characteristics Survey (SRNCS; Echeverria, Diez-Roux & Link, 2004): Access to Healthy Food, Social Cohesion (i.e. neighborhood connectedness), and Exercise Environment subscales. Items were rated on a scale from (1) *strongly agree* to (5) *strongly disagree*. The first subscale measures the extent to which healthy food choices are available with items such as "it is easy to purchase fresh fruits and vegetables in my neighborhood". The social cohesion scale measures neighborhood connectedness and includes items such as "people around here are willing to help their neighbors" and "people in this neighborhood can be trusted". The exercise environment subscale measures opportunities for exercise in the community and includes such items as "my neighborhood offers many opportunities to be physically active" and "it is pleasant to go for a walk in my neighborhood". For a community sample of Latino and African American adults on the east coast, Chronbach's alphas of .78, .86, and .94 for the access to "Healthy Food, "Social Cohesion", and "Exercise Environment" subscales were calculated, respectively (Echeverria, Diez-Roux, & Link, 2004). Chronbach's alphas of .70, .92, and .70 were calculated with the present sample for the Exercise Environment, Access to Healthy Food, and Social Cohesion subscales, respectively. For the total neighborhood risk scores, a Chronbach's alpha of .89 was calculated with the present study sample.

CHAPTER IV

RESULTS

Study findings are presented in the following order: data screening and missing data, descriptive information and tests of statistical assumptions, bivariate correlations, and primary model analyses.

Data Screening and Missing Data

All preliminary analyses to model testing, including data screening and examination of missing data, were conducted using Predictive Analytics Software 19.0 for Windows (PASW; SPSS Inc., 2009). Data ranges were checked for each variable to ensure that all data were within the prescribed ranges. Univariate outliers were addressed by inspecting frequency distributions and identifying *z* scores that were equal to or greater than +3.29 (Tabachnick, 2007). Two data points were outside the possible range on each of the following measures: the Brief Symptom Scale-Anxiety Subscale (ANX), the Bidimensional Acculturation Scale –English Subscale (ACCULT), and the Familism scale (FAMIL), respectively. The Ethnic Identity Affirmation Scale (ETHNID) and Familism-Support subscales had three points outside the admissible *z* score range (± 3.9). One data point was outside the *z* score range for the Loss of Control (LOSSCTRL) subscale. Given that these values were not attributed to data entry errors, they were rounded down to the nearest value within *z* score range after confirming that these responses were consistent with participants' prior responses. All other data were in range.

Missing data were examined. As expected, the amount of missing data was within a reasonable range. Missing data percentage for each variable is presented in Table 1.

The greatest amounts of missing data are associated with the criterion variables body mass index (BMI), body dissatisfaction (BODYDISS), and disordered eating behavior (EAT_BEH), which is not surprising given the sensitive nature of questions regarding body, weight, and eating habits. Neighborhood risk (NEIGHBRISK), measured by the Self-Reported Neighborhood Characteristics Survey (SRNCS; Echeverria, Diez-Roux & Link, 2004), was also among variables with the greatest amounts of missing data. The SRNCS was the last measure in the survey battery, which may explain the greater amount of missing data. Overall, the amount of missing data was within a reasonable range (Little & Rubin, 2002).

TABLE 2. Percentage of Missing Data per Variable

Variable	Missing data (%)
1. Acculturation (ACCULT)	15.60
2. Biculturalism (BICULT)	15.60
3. Generational status (GENSTAT)	8.80
4. Familismo (FAMIL)	14.10
5. Spirituality (SPIRIT)	15.30
6. Ethnic identity (ETHNID)	16.40
7. Depression (DEP)	11.50
8. Anxiety (ANX)	11.10
9. Disordered eating behavior (EAT_BEH)	17.09
10. Dieting (DIET)	16.80
11. Body dissatisfaction (BODYDISS)	17.20
12. Neighborhood risk (NEIGHBRISK)	17.20
13. BMI (BMI)	18.30
14. Loss of control (LOSSCTRL)	16.00

Little's missing completely at random test indicated that missing items were missing completely at random, X^2 (183) = 151.510, $p = .957$. The missing data were imputed using maximum likelihood estimates under the estimation maximization (EM) method for missing value. This method was chosen because it is a well supported, iterative estimation procedure which generates a single imputed data set, giving the most likely estimated imputed values with the EM algorithm (Dempster, 1977).

Descriptive Statistics and Statistical Assumptions

The mean, standard deviation, alpha coefficients, range, and normality coefficients for each variable are presented in Table 4. Alpha reliability coefficients were estimated with the present study sample and ranged from .69 to .97.

TABLE 3. Descriptive Statistics, Reliability, and Normality for Measured Variables

Variable	*M*	*SD*	α	Skew	Kurtosis
1. ACCULT	3.77	0.26	.69	1.38 $^{+}$	1.71
2. BICULT	3.26	0.37	.81	-0.51	0.01
3. GENSTAT	1.50	0.71	.	1.66 $^{+}$	-0.07
4. FAMIL	3.76	0.74	.93	-1.04 $^{-}$	2.93
5. SPIRIT	6.16	2.61	.97	-0.28	-0.73
6. ETHNID	3.51	0.52	.89	-1.66 $^{-}$	3.15
7. DEP	2.16	0.87	.86	1.08 $^{+}$	0.62
8. ANX	1.90	0.71	.82	1.09	0.78
9. EAT_BEH	42.66	13.22	.97	0.51	0.29
10. DIET	38.00	13.48	.94	-0.21	-0.78

11. BODYDISS	26.74	8.92	.88	0.09	-0.55
12. BMI	25.38	4.73	.	1.13 +	1.61
13. LOSS_CTRL	9.00	2.49	.91	0.55	-0.54
14. NEIGHBRISK	2.60	0.61	.89	0.10	0.41

Note. + = positively skewed, - = negatively skewed.

The primary statistical assumptions of SEM are multivariate normality and linearity, which are important for making accurate statistical inferences when using maximum likelihood estimation (Kline, 2005). Skewness and kurtosis were examined using the following statistical cutoffs: -0.8 to .8 (skew) and -3 to 3 (kurtosis) (Tabachnick, 2007). Examination of skew and kurtosis, as well as visual inspection of histograms, indicated that data distributions were not normal for the following variables: ACCULT, GENSTAT, DEP, ANX, BMI, FAMIL, and ETHNID. Skewness was out of range for these variables and kurtosis was out of range for ETHNID. The violation of normality was addressed with the recommended approach of using maximum likelihood with robust standard errors during structural equation modeling (Kline, 2005).

Bivariate Correlations

A zero order correlation matrix of study variables is presented in Table 5. Correlations between variables were mostly in the expected direction, though some were of small magnitude or non-significant. Correlation results for ACCULT and GENSTAT indicators were mixed. As expected, GENSTAT, or greater length of time since families' migration to the US, was significantly related to low levels of FAMIL, SPIRIT, and ETHNID and significantly related to greater levels of DIET. ACCULT was not

significantly related to any of the indicator variables comprising the *Cultural Resilience, ED Symptoms and Risk,* or *Obesity Risk* latent constructs. Biculturalism (BICULT), which had not previously been included in study hypotheses, had a significant positive relationship with *Cultural Resilience* (FAMIL, SPIRIT, and ETHNID), and a significant negative relationship with *Psychological Distress* variable indicators (DEP and ANX). Further, BICULT was significantly and inversely correlated to *ED Symptoms and Risk* factors as well as LOSS_CTRL (one of three *Obesity Risk* variables).

As expected, all *Cultural Resilience* variables (FAMIL, ETHNID, and SPIRIT) were inversely related to *Psychological Distress* variables (DEP and ANX), *ED Symptoms and Risk* variables (EAT_BEH, DIET, and BODDISS) and LOSS_CTRL (one of three *Obesity Risk* variables). FAMIL and ETHNID, but not SPIRIT, were significantly related to BMI, whereby higher FAMIL and ETHNID were related to higher BMI; opposite of the relationship that was hypothesized. NEIGHBRISK was not significantly correlated to any of the hypothesized variables.

As expected, there was a significant positive relationship between *Psychological Distress* indicators (ANX and DEP) and *ED Symptoms and Risk* indicators (EAT_BEH, DIET, and BODDISS); that is, greater *Psychological Distress* was correlated with greater levels of *ED Symptoms and Risk*. In addition, higher DEP and ANX levels were significantly correlated with the *Obesity Risk* indicator of LOSS_CTRL, which was expected, yet were not significantly correlated with NEIGHBRISK or BMI, which was unexpected.

TABLE 4. Bivariate Correlations Among Measured Variables for Whole Sample

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ACCULT	---												
2. BICULT	.16*	---											
3. GENSTATUS	.15*	-.41**	---										
4. FAMIL	-.04	.40**	-.15*	---									
5. SPIRIT	-.03	.36**	-.20**	.44**	---								
6. ETHNID	-.05	.42**	-.22**	.56**	.29**	---							
7. DEP	-.04	-.31**	.09	-.40**	-.20**	-.51**	---						
8. ANX	-.01	-.23*	.01	-.38**	-.17**	-.39**	.71**	---					
9. EAT_BEH	.05	-.19**	.08	-.22**	-.13*	-.39**	.45**	.40**	---				
10. DIET	.11	-.25**	.18**	-.31**	-.20**	-.39*	.30**	.28**	.62**	---			
11. BODDISS	-.01	-.20**	.11	-.18**	-.18**	-.38**	.45**	.42**	.78**	.74**	---		
12. NEIGHBRSK.	-.11	.04	-.09	-.01	.06	-.04	.08	.09	.12	.11	.13	---	
13. BMI	.11	.03	.09	.17**	-.02	.09	-.00	-.01	.33**	.17**	.25**	.08	---
14. LOSS_CTRL	.10	-.20**	.12*	-.22**	-.16**	-.25**	.36*	.28**	.71**	.32**	.47**	.03	.25**

Note. ACCULT = acculturation; BICULT = biculturalism; GENSTAT = generational status; ETHNID.= ethnic identity; EAT_BEH.= disordered eating behavior; BODYDISS = body dissatisfaction; NEIGHBRSK = neighborhood risk; BMI = body mass index; LOSS_CTRL= loss of control .
$^{*}p \leq .05$ (2-tailed). $^{**}p \leq .01$ (2-tailed).

Model Testing

Structural equation modeling (SEM) was conducted using PASW 19.0 (SPSS Inc., 2009) to answer the primary study questions. The two full models proposed (i.e. a combination of directly observed and unmeasured latent variables) were tested, and based on these results reduced post hoc models were tested (Model 1 Post Hoc A and B, and Model 2 Post Hoc A). Model-fit was assessed for all models with a joint consideration of the chi-square statistic (χ^2), the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Residual (SRMR) (Hu & Bentler, 1999). In general, good model fit is evidenced by a nonsignificant chi-square, which suggests that the hypothesized model is not different from a perfect model. A CFI of at least .95 represents very good model fit, and a CFI of .90 to < .95 represents adequate model fit (Hu & Bentler, 1999). An RMSEA between .05 and .08 represents a good fit, and describes a lack of fit per degrees of freedom (Hu & Bentler, 1999). A SRMR of .06 or less represents a good fit and describes how well the variance-covariance matrices match each other. However, Marsh and colleagues (2004) have cautioned against overgeneralizing stringent cutoff threshold values for the purpose of accepting or rejecting models (Marsh, 2004). Instead, particularly for counseling psychology research, Quintana and Maxwell (1999) recommend that fit indices be used as descriptive information regarding how well a model fits the data (Quintana & Maxwell, 1999).

Given the lack of significant bivariate correlations between ACCULT with any of the proposed criterion variables, this indicator variable was dropped from the original model leaving one remaining indicator variable to measure ACCULT, GENSTAT.

Correlations among all other indicator variables were significant and supported the proposed latent variable construction (see Table 5).

Model 1

The first hypothesized model is presented in Figure 3 with standardized parameter estimates included for each path. The chi-square statistic value was statistically significant, (χ^2 [23, N = 262] = 80.90, p = .000). Fit indices were as follows: CFI (.920), RMSEA (.092), and the SRMR (.051). Overall, the model provided an inadequate fit to the data.

Ten paths were significant in the hypothesized model (see Figure1). As expected, GENSTAT had a significantly negative relationship with the *Cultural Resilience* latent factor (β = -.25, p < .001). *Cultural Resilience* was significantly negatively related to the *Psychological Distress* latent factor (β = -.65, p < .001), and *Psychological Distress* was significantly positively related to *ED Symptoms and Risk* latent factor (β = -.41, p <.001).

Contrary to expectation, the path between GENSTAT and *ED Symptoms and Risk* was not significant (β = .04, p = 45.). In addition, the path from *Cultural Resilience* and *ED Symptoms and risk* was not significant (β = -.18, p =.45). Table 8 provides parameter estimates (unstandardized and standardized), z-values, and p-values for Model 1.

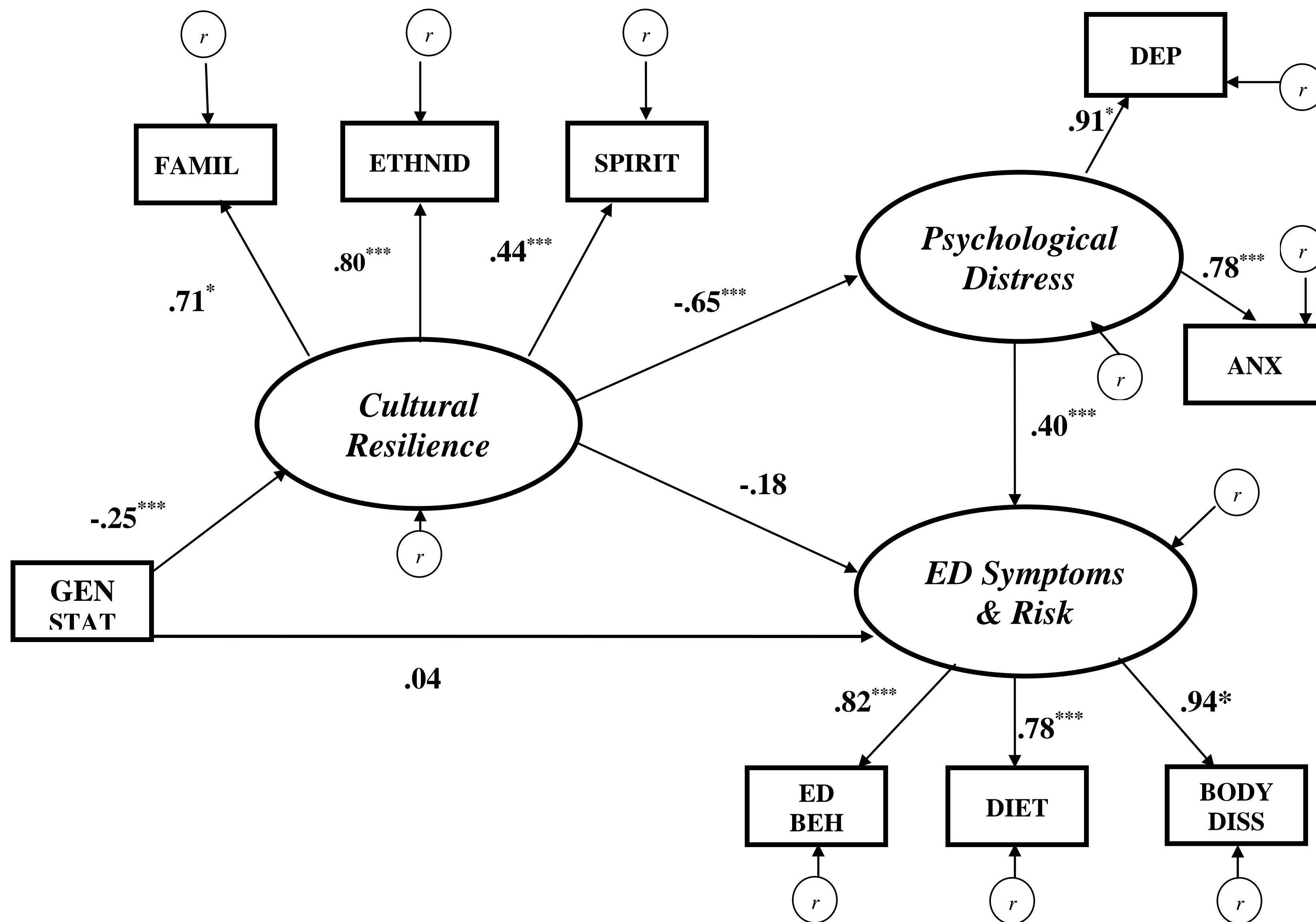

FIGURE 3. Model 1 with standardized parameter estimates. *$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 5. Path Statistics for Model 1 and Model 1 Post Hoc A

Path	Un-standardized parameter estimate	Standardized parameter estimate (β)	*Z*	*P*
Model 1				
Cultural Resilience →*ED Symptoms and Risk and Risk*	-2.92	-0.18	-1.83	.066
Cultural Resilience →ETHNID	0.70	0.80	9.12	<.0001***
Cultural Resilience →FAMIL	1.00	0.71	--	--
Cultural Resilience →*Psych Distress*	-0.97	-0.64	-7.94	<.0001***
Cultural Resilience →SPIRIT	2.17	0.44	6.12	<.0001***
ED Symptoms and Risk →BODYDISS	1.00	0.94	--	--
ED Symptoms and Risk→EAT_BEH	1.28	0.82	17.14	<.0001***
ED Symptoms and Risk→DIET	1.24	0.78	15.82	<.0001***
GENSTAT→*Cultural Res*	-0.18	-0.24	-3.52	<.0001***
GENSTAT→*ED Symptoms and Risk*	0.51	0.04	0.74	.454
Psych Distress →ANX	0.70	0.78	11.41	<.0001***
Psych Distress →DEP	1.00	0.91	--	--
Psych Distress →*ED Symptoms and Risk*	4.34	0.40	4.24	<.0001***
Model 1 Post Hoc A				
BICULT→ *Cultural Resilience*	-2.13	0.53	-7.23	<.0001***
Cultural Resilience →*ED Symptoms and Risk*	-2.87	-0.18	-1.92	.054
Cultural Resilience →ETHNID	0.67	0.77	9.84	<.0001***
Cultural Resilience →FAMIL	1.00	0.72	--	--

Cultural Resilience → *Psych Distress*	-0.94	-0.64	-8.08	<.0001***
Cultural Resilience →SPIRIT	2.27	0.47	6.63	<.0001***
ED Symptoms and Risk→BODYDISS	1.00	0.94	--	--
ED Symptoms and Risk→EAT_BEH	1.28	0.82	17.09	<.0001***
ED Symptoms and Risk→DIET	1.24	0.77	15.77	<.0001***
GENSTAT→ *Cultural Resilience*	-0.02	-0.03	-0.46	.642
GENSTAT→BICULT	-0.21	-0.40	-7.23	<.0001***
Psych Distress →ANX	0.70	0.78	11.41	<.0001***
Psych Distress →DEP	1.00	0.90	--	--
Psych Distress →*ED Symptoms and Risk*	4.38	0.41	4.33	<.0001***

**p* < .05. ***p* < .01. ****p* < .001.

Model 1 Post Hoc A

To explore the possibility of a model with better fit, a post-hoc model that included biculturalism (BICULT) was tested. BICULT was not part of the original hypothesized model, yet these data were available because participants completed the full Bidimensional Acculturation Scale (Marin, 1991). Given the significant relationship between BICULT scores and generation status (GENSTAT) (see Table 5), it was predicted that a significant path would exist between GENSTAT and BICULT, as well as a significant path between BICULT and *Cultural Resilience;* thus, these two paths were added to the model. Based on evaluation of parameter estimates (Kline, 2005) (β = .04, *p* = 45.), the path between GENSTAT and *ED Symptoms and Risk* was dropped.

Overall, the improvement in model-fit indices for Model 1 Post Hoc A was significant. The chi-square statistic remained significant ($\chi 2$ [31, N = 262] = 85.88, p = < .01), The CFI (.95) and RMSEA (.08) indices, however, indicated a better fit to the data and fell just inside the desirable range. The fit indices were: chi-square statistic (χ^2 [31, *N* = 262] = 85.88, *p* = < .01), CFI (.95), and RMSEA (.08). The new paths between GENSTAT and BICULT (β = -.41, *p* <.001) and BICULT and *Cultural Resilience* (β = .54, *p* <.001.) were significant. The path between *Cultural Resilience* and *ED Symptoms and Risk*, however, was not significant (β = -.18, *p* = .056). In addition, the path between GENSTAT and *Cultural Resilience* was not significant (β = -.03, *p* = .64).

Model 1 Post Hoc B

The model was adjusted again. Compared to the other observed factors that comprise the latent factor *Cultural Resilience* in Model 1 Post-hoc A, parameter estimate strength for SPIRIT was weak (β = .47, *p<.001*) indicating that SPIRIT explains the least variance for the *Cultural Resilience* latent factor. The SPIRIT indicator variable was dropped for Model 1 Post Hoc B. The improvement in model-fit indices was significant. The chi-square statistic remained significant (χ^2 [23, *N* = 262] = 59.16, *p* = < .01). The CFI (.96) and RMSEA (.07) indices, however, indicated a better fit to the data than Model 1 Post-hoc A. Furthermore, the path between *Cultural Resilience* and *ED Symptoms and Risk* was significant (β = -.22, *p* = .02). The path between GENSTAT and *Cultural Resilience* remained non-significant (β = -.04, *p* = .60).

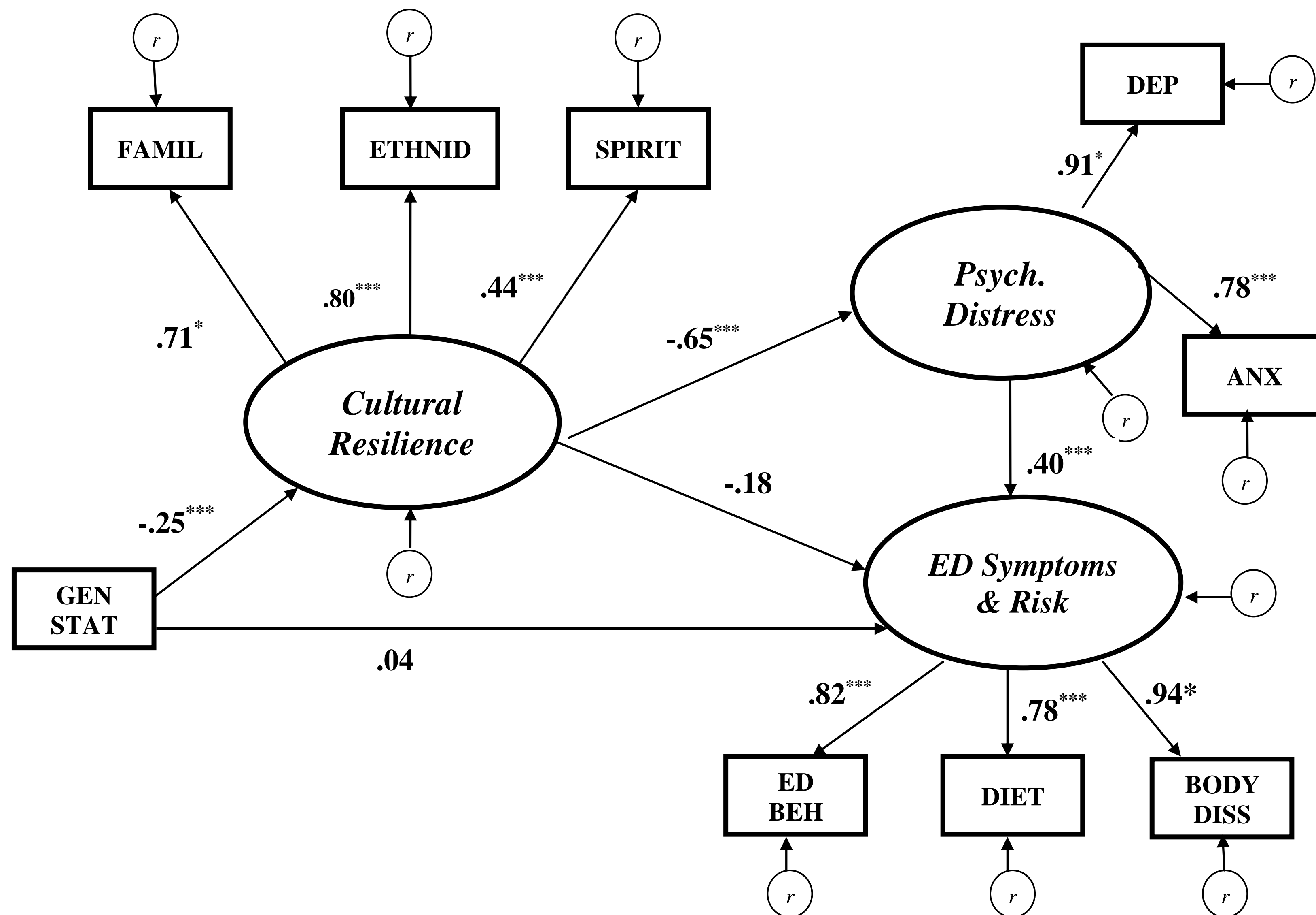

FIGURE 4. Model 1 Post Hoc A with standardized parameter estimates. $*p < .05$. $**p < .01$. $***p < .001$.

TABLE 6. Path Statistics for Model 1 Post Hoc B

Path	Un-standardized parameter estimate	Standardized parameter estimate (β)	*Z*	*P*
Model 1 Post Hoc B				
BICULT→ *CulturalResilience*	0.67	0.50	-1.83	<.0001***
Cultural Resilience →*ED Symptoms and Risk*	-3.74	-0.22	-2.28	.022*
Cultural Resilience →ETHNID	0.78	0.83	9.15	<.0001***
Cultural Resilience →FAMIL	1.00	0.67	--	--
Cultural Resilience →*Psychological Distress*	-1.05	-0.65	-8.01	<.0001***
ED Symptoms and Risk →BODDISS	1.00	0.94	--	--
ED Symptoms and Risk →EAT_BEH	1.28	0.82	17.12	<.0001***
ED Symptoms and Risk →DIET	1.24	0.77	15.79	<.0001***
GENSTAT→*Cultural Resilience*	-0.02	-0.03	-0.52	.603
GENSTAT→BICULT	-0.21	-0.40	-7.23	<.0001***
Psychological Distress→ANX	0.69	0.77	11.41	<.0001***
Psychological Distress→DEP	1.00	0.91	--	--
Psychological Distress→ *ED Symptoms and Risk*	4.02	0.38	3.98	<.0001***

*$p < .05$. **$p < .01$. ***$p < .001$.

The squared multiple correlation coefficients (R^2) indicated that GENSTAT explained 17.0% of the variance in BICULT and 27.0% of the variance in *Cultural Resilience*. The *Cultural Resilience* latent factor explained 70.4% of the variance in ETHNID, and 45.0% of the variance in FAMIL. The *Psychological Distress* latent factor explained 83.6% of the variance in DEP, and 60.4% of the variance in ANX. The *ED Symptoms and Risk* latent factor explained 68.0% of the variance in EAT_BEH, 89.7% of the variance in BODYDISS, and 60.7% of the variance in DIET. Model 1 Post Hoc B

accounted for 43.0% of the variance in *Psychological Distress* and 30.6% of the variance in *ED Symptoms and Risk*. See Table 9 for the squared multiple correlation coefficients for Model 1 Post Hoc B.

TABLE 7. Squared Multiple Correlation Coefficients (R^2) for Model 1 Post Hoc B

Variable	R^2 (%)
ANX	60.4
BICULT	17.0
BODYDISS	89.7
Cultural Resilience	26.8
EAT_BEH	68.0
DEP	83.6
DIET	60.7
ED Symptoms and Risk	30.6
ETHNID	70.4
FAMIL	44.9
Psychological Distress	42.8

Mediation or indirect effects were calculated for Model 1 Post Hoc B. As hypothesized, parameter coefficients were significant for the standardized indirect effect of *Psychological Distress* on *Cultural Resilience* (β = -.65, p = <.001) and *ED Symptoms and Risk* (β = .38, p = < .001). To determine the statistical significance of this mediated effect, Bootstrap analyses procedures were used. Compared with other mediation significance methods, bootstrap analyses have demonstrated high statistical power and low measurement error sensitivity (Oosterhuis, 2011). AMOS 17 (AMOS; SPSS Inc., 2009) was used to conduct a parametric bootstrap analysis (i.e., Monte Carlo) with 10,000 samples. Bias corrected confidence intervals were also calculated. According to Kline (2005), an indirect effect is significant at the .05 level if the 95% confidence

interval does not include zero. For the present study, the results from the bootstrap analyses indicated that indirect effect of *Cultural Resilience* on *ED Symptoms and Risk* through *Psychological Distress* was significant because the 95% confidence interval did not include zero (see table 7). The standardized regression coefficient, unstandardized regression coefficient, standard error, and 95% bias corrected confidence interval are reported in Table 7.

Model 2

The second hypothesized model is shown in Figure 4. This model differs from Model 1 in that *Obesity Risk* replaced *ED Symptoms and Risk*. The latent construct *Obesity Risk* was originally comprised of observed variables: BMI, LOSS_CTRL, and NEIGHBRISK. Given the lack of significant bivariate correlations between NEIGHBRISK with any of the proposed criterion variables, this indicator variable was removed from the original model. It was expected that *Cultural Resilience* would be negatively associated with *Obesity Risk*, and that *Psychological Distress* would be positively associated with *Obesity Risk*. All other relationships were hypothesized as with Model 1, using Model 1 Post-hoc 2 as the basis for further model estimation.

Similar to Model 1 Post-hoc 2, results suggested that the data adequately fit the model: (χ^2 [18, N = 262] = 31.76, p = < .01), CFI = .975 and RMSEA = .054. However, the converged solution was inadmissible due to the presence of a Heywood case (i.e., negative variance) on the observed LOSS_CTRL residual variable (r = -.619.59).

TABLE 8. Bootstrap Analysis of Statistical Significance of Indirect Effects

Path	*B* (standardized path coefficient and product)	*Standard Error*[a]	*Bias Corrected CI for Mean Indirect Effect*[a] *(Lower to Upper)*
Model 1 Post Hoc B			
Cultural Resilience→Psychological Distress	(-0.65) x (0.38) = -0.24	-0.13	-1.334 to -0.7938*
Psychological Distress→ ED Symptoms and Risk	“	1.10	1.960 to 6.015*

Note. N = 262.

[a]These values are based on the unstandardized path coefficients.

*This 95% confidence interval excludes zero and therefore is significant at $p < .05$.

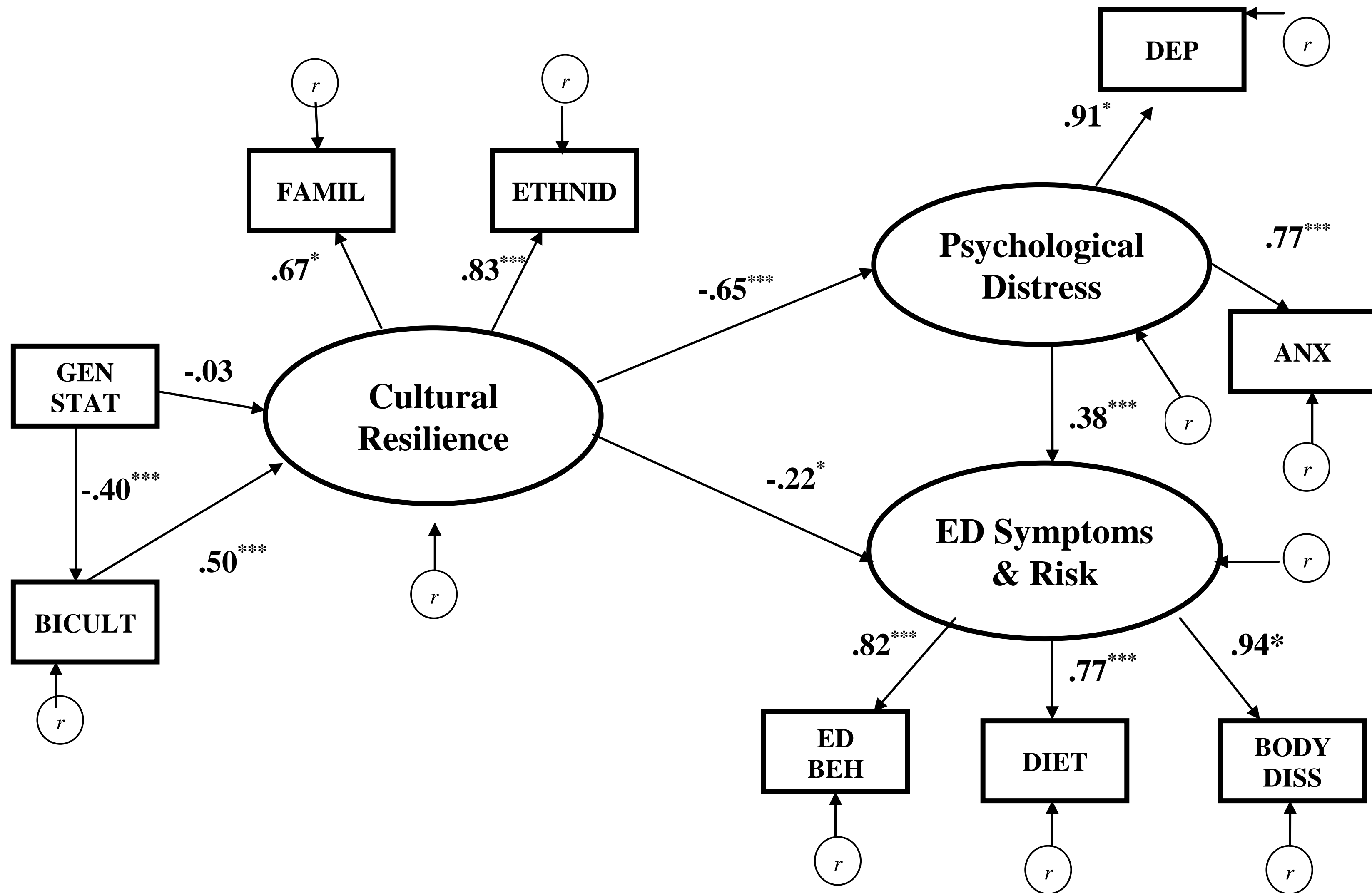

FIGURE 5. Model 1 Post Hoc B with standardized parameter estimates. *$p < .05$. **$p < .01$. ***$p < .0001$.

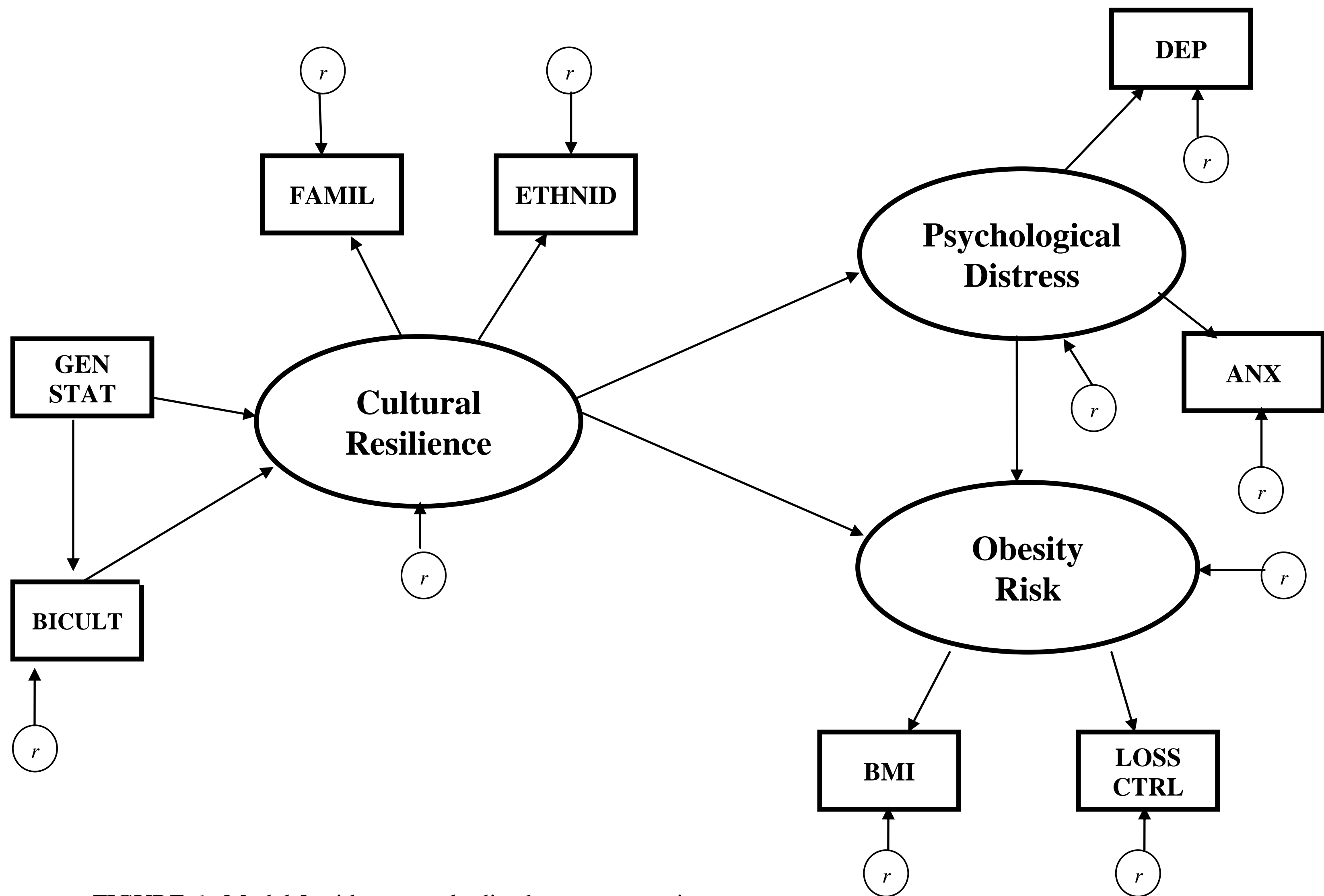

FIGURE 6. Model 2 without standardized parameter estimates.

According to Kline (2010), the presence of negative variances could be caused by model misspecification or by including only two indicators per factor in a measurement model with a small sample size (e.g. $N < 100$). It is not recommended to trust the results of models that include negative variance (Kline, 2010). Thus, contrary to theoretical predictions, the initial model did not provide a good fit to the data.

Model 2 Post Hoc A

Based on the inadmissible solution that converged during the first analysis, Model 2 was adjusted based on the following criteria: First, bivariate correlations were re-examined. Although BMI was significantly correlated with LOSS_CTRL, the former was not significantly correlated with any of the other indicator variables except FAMIL. Therefore, it is unlikely that an admissible model will converge with BMI being unrelated to the majority of the predictor variables. Second, the parameter estimate coefficient between *Obesity Risk* and BMI was not statistically significant ($p = .98$). Given these considerations, BMI was dropped from the model. Model 2 Post-hoc 1 was analyzed as a reduced model with latent factor *Obesity Risk* reduced to an observed construct: LOSS_CTRL.

TABLE 9. Path Statistics for Model 2 Post Hoc A

Path	Un-standardized parameter estimate	Standardized parameter estimate (β)	Z	P
Model 2 Post Hoc A				
BICULT→ *Cultural Resilience*	0.71	0.51	6.61	<.0001***
Cultural Resilience →LOSS_CTRL	-0.62	-0.13	-1.33	.183

Cultural Resilience →ETHNID	0.73	0.81	9.16	<.0001***
Cultural Resilience→FAMIL	1.00	0.69	--	--
Cultural Resilience→*Psychological Distress*	-1.04	-0.64	-8.15	<.0001***
GENSTAT→BICULT	-0.21	-0.40	-7.23	<.0001***
GENSTAT→*Cultural Resilience*	-0.21	-0.02	-0.43	.665
Psychological Distress→ANX	0.65	0.75	10.53	<.0001***
Psychological Distress→DEP	1.00	0.94	--	--
Psychological Distress→ LOSS_CTRL	0.87	0.29	3.08	.002**

*$p < .05$. **$p < .01$. ***$p < .001$.

Results suggested that the data adequately fit the model: (χ^2 [11, N = 262] = 13.17, p = > .05), CFI = .996, and RMSEA = .028. As with Model 1 Post Hoc B, the path between GENSTAT and Cultural Resilience remained non-significant (β = -.03, p = .66). The path between *Cultural Resilience* and LOSS_CTRL was also not significant (β = -.13, p = .18), making it unnecessary to calculate indirect effects for model two. All other paths were statistically significant.

The squared multiple correlations for Model 2 Post Hoc A are presented in Table 11. The squared multiple correlation coefficients (R^2) indicated that GENSTAT explained16.7% of the variance in BICULT and 27.9% of the variance in *Cultural Resilience*. *Cultural Resilience* latent factor explained 66.0% of the variance in ETHNID, and 47.9% of the variance in FAMIL. The *Psychological Distress* latent factor explained 88.5% of the variance in DEP, and 57.1% of the variance in ANX. Model 2 Post Hoc A accounted for 42.2% of the variance in *Psychological Distress*, and 15.4% of the variance in LOSS_CTRL.

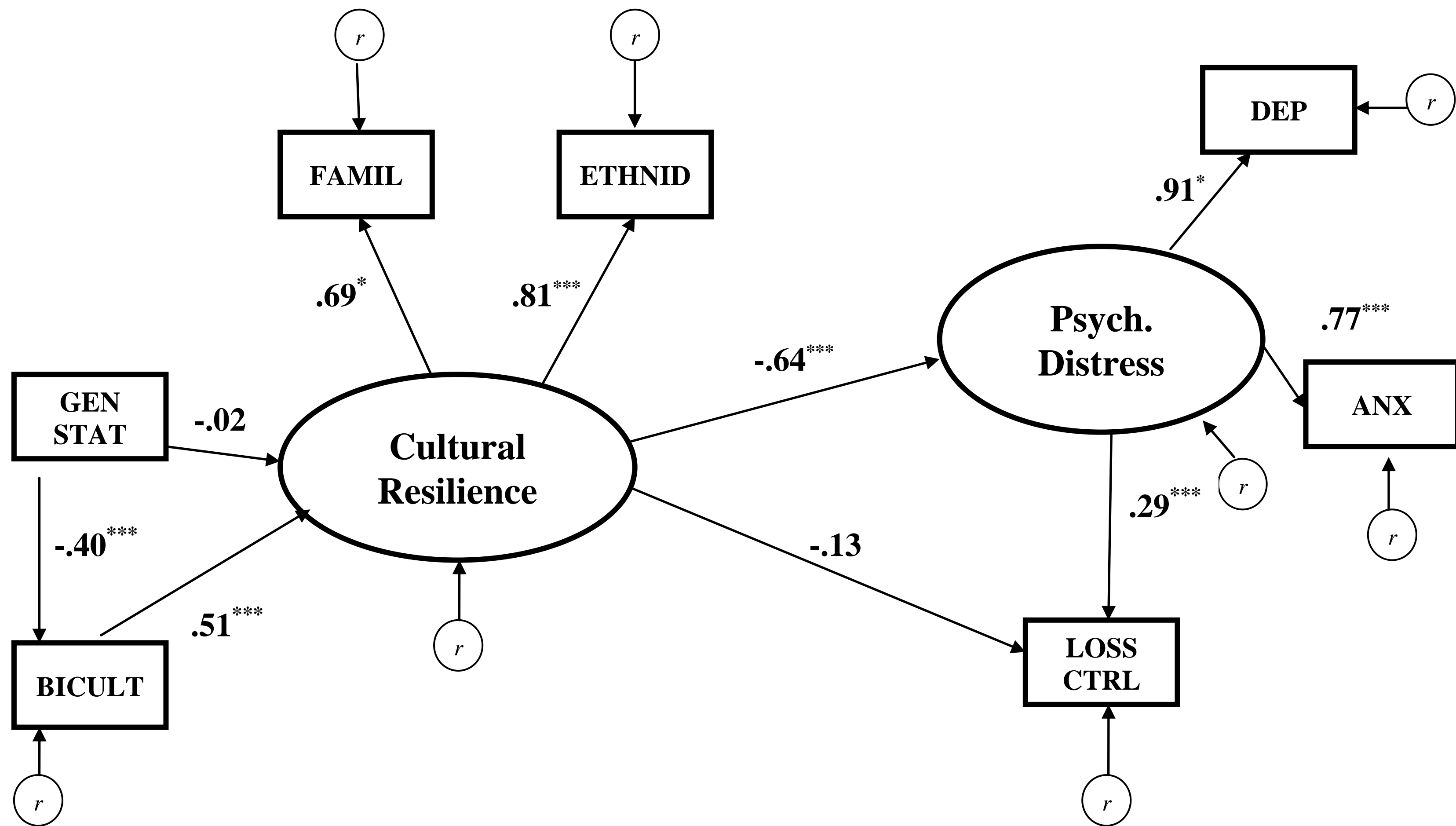

FIGURE 7. Model 2 Post Hoc A with standardized parameter estimates. $*p < .05$. $**p < .01$. $***p < .001$.

TABLE 10. Squared Multiple Correlation Coefficients (R^2) for Model 2 Post Hoc A

Variable	R^2 (%)
ANX	57.1
BICULT	16.7
Cultural Resilience	27.8
DEP	88.5
ETHNID	66.0
FAMIL	47.9
LOSS_CTRL	15.4
Psychological Distress	42.2

TABLE 11. Summary of Model Fit Statistics

Model	$\chi 2$	*Df*	*P*	CFI	RMSEA
Model 1 (hypothesized)	80.90	23	.00	.920	.092
Model 1 post hoc A	85.88	31	.00	.950	.080
Model 1 post hoc B	59.16	23	.00	.960	.070
Model 2 (hypothesized)	31.76	18	.00	.975	.054
Model 2 post hoc A (w/ LOSS_CTRL as outcome)	13.17	11	.05	.996	.028

Note. CFI = Comparative fit index; RMSEA = Root-mean-square error of approximation.

CHAPTER V

DISCUSSION

The purpose of this study was to explore the relationships between acculturation, psychological health, cultural resilience, and eating disorder (ED) symptoms and risk related variables with young adult Latinas. The primary goals of this study were to: (1) increase understanding of a broad range of disordered eating (DE) and obesity risk patterns among young adult Latinas; (2) increase understanding of culture-specific resiliency factors that may protect against or buffer the effects of ED risk among young adult Latinas; and (3) contribute to a growing body of literature examining DE in community samples to strengthen prevention and intervention efforts aimed at Latinas in the general population.

Study results supported several study hypotheses: (a) higher ethnic identity affirmation and *familismo* (i.e., cultural resilience) were associated with lower depression and anxiety symptomology (i.e., psychological distress); (b) higher ethnic identity affirmation and *familismo* were associated with lower DE behavior, dieting, and body image dissatisfaction (i.e., ED symptoms and risk); (c) higher depression and anxiety symptoms were associated with higher DE behavior, dieting, body image dissatisfaction, and loss of control; and (d) psychological distress partially mediated the relationship between cultural strengths and ED symptoms and risk. Post-hoc analysis indicated that more recent immigration status was associated with higher biculturalism, which was associated with higher ethnic identity affirmation and *familismo*.

Although previous ED researchers (Lau, 2007) have investigated separate dimensions of acculturation (i.e., acculturation to indigenous and dominant cultures separately), this is the first study to examine the outcomes of both dimensions together (i.e., biculturalism).Generational status was inversely related to biculturalism, whereby longer time since family's migration was associated with lower biculturalism. This relationship is consistent with selective-acculturation theory, which asserts that cultural language, value, and behavior transmission is likely to decline the longer a group has contact with the host culture (Portes & Rumbaut, 2001). Also consistent with hypotheses, biculturalism was positively associated with higher cultural resilience variables *familismo* and ethnic identity affirmation. This finding supports bidimensional acculturation theory, which suggests that U.S. ethnic minority and immigrant health is greatly influenced by their bicultural competency, or ability to negotiate acculturation processes that occur when they come into contact with the multiple and different cultures with which they may identify (Hovey, 1998, 2000a, 2000b; LaFromboise, Coleman, & Gerton, 1993; Sanchez & Fernandez, 1993). The positive role of biculturalism in the current study also supports findings that bicultural competence is negatively associated with depressive symptoms among ethnic minority college students (Wei, et al., 2010), negatively associated with loneliness among Latino college students (Suárez, Fowers, Garwood, & Szapocznik, 1997), and inversely related to parent-adolescent conflict among Latino families (Smokowski, Rose, & Bacallao, 2008). The present study contributes to biculturalism research by identifying *familismo* and ethnic identity affirmation as specific Latino cultural mechanisms that may protect young adult Latinas from DE and psychological distress.

As hypothesized, higher cultural resilience was associated with less psychological distress. The more participants had positive feelings about being Latina, and the more they endorsed family support, loyalty, and obligation, the less depression and anxiety symptoms they experienced. Findings underscore existing research findings regarding the positive role of *familismo* and ethnic identity on Latino health. For example, for a community sample of Mexican American women, those with higher levels of ethnic pride reported higher levels of family support, which in turn predicted lower levels of mental health problems (Dinh, Castro, Tein, & Kim, 2009). In addition, results are consistent with Bacallo and Smokowski's (2007) finding that families coped with post-immigration changes by maintaining high levels of familism (i.e., support and mutual obligation among family members) and cultural traditions (Bacallao & Smokowski, 2007). These extant findings are similar to present study results; providing support for *familismo* and ethnic identity affirmation protecting Latina women from experiences of psychological distress.

Cultural resilience was also inversely related to ED symptoms and risk variables, which is consistent with present study hypotheses. For Latinas in this study, positive feelings about being Latina, and higher endorsement of family support, loyalty, and obligation were associated with less disordered eating behavior, dieting, and body dissatisfaction. Only two other studies have been published examining ethnic identity and DE with Latinas. With the first study, researchers found no predictive relationship between ethnic identity and DSM-IV diagnoses with a sample of Mexican American women (Cachelin et al., 2006); however, unlike the present study, which examined the ethnic identity "affirmation" subscale independently, Cachelin and colleagues examined

overall ethnic identity scores. Also unlike the present study, categorical ED diagnoses were used, rather than a continuum of disordered eating. With their second study, Cachelin et al. (2006b) found that stronger Mexican ethnic identity protected against purging, but they explained that findings were preliminary given a sample size that was too small for statistical power. The present study is the first to demonstrate significant results on the protective nature of ethnic identity affirmation on ED symptoms and risk with Latinas.

Although research on *familismo* and DE is also limited, present study findings are consistent with extant research. The only researchers to examine this relationship found that *familismo* significantly moderated the links between acculturation to mainstream U.S. culture and three eating and body related variables: control concerns, restricted eating, and body dissatisfaction (Bettendorf & Fischer, 2009). It is possible that exposure to U.S. values of thinness is a form of acculturative stress stemming from navigating conflicting cultural norms (Berry, 1990), such as ideals related to attractiveness. Present study findings indicate that family protects Latinas from the negative impact of living in a culture that endorses the thin, European American ideal, a possible source of acculturative stress. The present study findings add to this growing area of research by identifying that *familismo* may also be protective of ED symptoms and risk with Latinas.

Finally, psychological distress was both positively related to ED symptoms and risk, and acted as a partial mediator between cultural resilience and ED symptoms and risk. For Latinas in this study, higher levels of depression and anxiety were associated higher levels of DE behavior, dieting, body dissatisfaction, and loss of control. This is consistent with previous research showing that disordered eating are highly associated

with depressive symptoms (Lewinsohn, et al., 2000; Stice, Presnell, & Bearman, 2001) and anxiety symptoms (Bulik, Sullivan, Carter, & Joyce, 1996; Bulik et al., 1997). Given the measurement of disordered eating used in the present study (i.e., continua versus categorical diagnoses), findings support the notion that meeting full ED diagnostic criteria is not necessary for women to experience co-occurring depression and anxiety. Further, this study is the first to examine the mediating effect of psychological distress on cultural resilience and ED symptoms and risk with Latina women. Findings indicate that when cultural resilience is low, Latinas are at risk of developing depression and anxiety, which is in turn associated with the development of disordered ED symptoms and risk.

The following results were contrary to present study hypotheses: (a) generational status and acculturation to Non-Latino culture (i.e., Acculturation to U.S. Mainstream culture) were not associated any of the cultural resilience or ED symptoms and Risk variables, nor any obesity risk variables. Cultural resilience, therefore, did not mediate the relationship between Acculturation to U.S. Mainstream Culture and ED symptoms and risk or obesity risk, as expected; (b) spirituality was not strongly associated with Cultural Resilience variables, which made it a poor fit with this model; and body mass index and neighborhood risk were not associated with generational status, ethnic identity affirmation, depression or anxiety.

The absence of association between acculturation to non-Latino culture and all criterion variables was surprising. Existing research on the effects of acculturation on DE suggests that high acculturation to non-Latino culture is associated with: a) AN, BN, and BED symptomology (Cachelin, 2000), b) anti-fat attitudes (Pepper & Ruiz, 2007) and c) body dissatisfaction (Bettendorf & Fisher, 2009). This lack of association in the present

study may be explained by the following: First, internal consistency for this subscale was low ($\alpha = .69$), indicating that the items were unlikely to be closely related as a group. In Marin and Gamba's (1996) original validation study, a Cronbach's alpha reliability of .90 was reported. Participants, comprised of a random sample of 254 adult Latinos who had a mean age of 39 years, were mostly born outside the U.S. (80%), and predominantly identified as Mexican American and Central American. Thus, internal consistency differences between the present and original samples may indicate that the measure may not have worked as well for the young adult, predominantly college affiliated participants of the current study. Second, the mean participant score on the non-Hispanic/Latino acculturation scale ($M = 3.77$, $SD = 0.26$) and positive skew (1.38) indicated that most participants endorsed items very highly. That is, participants were more highly acculturated to U.S. mainstream culture and negotiating and operating with Western norms. For example, for items such as "how well do you understand English" and "how often do you watch television in English" most women endorsed understanding English very well and engaging in leisure activities using English quite often. Further, given the low number of participants who took this survey in Spanish ($n = 6$), the skewed distribution of the acculturation variable may be associated with sample specificity; namely, a result of English-dominant language users comprising the majority of study participants. Further, demographic data show that the study sample was predominantly college-educated, increasing the likelihood that the language-based acculturation items would be endorsed highly. It is possible that lack of sample heterogeneity impacted results as evidenced by: a) reduced power to detect small, but significant associations, b) skewed distribution of the acculturation variable, indicating that acculturation is not as

salient a factor for this sample; thus, other model factors are more salient, and/or c) a high number of educated participants and therefore a highly acculturated sample. Overall, results of measuring acculturation indicate that Latinas who demonstrated bicultural navigation abilities were ultimately engaging in less DE and endorsed less psychological distress, regardless of acculturation to non-Latino culture (an often cited risk factor for Latinas and DE). This reflects the notion that risk and protective factors shift over time (Bronfenbrenner & Morris, 2006) and that factors such as ethnic identity and familismo may become more important considerations than acculturation.

Similar to acculturation to non-Latino/Hispanic culture, generational status did not meet model expectations. Although generational status was positively associated with biculturalism, the predicted relationships with cultural resilience variables and ED symptoms and risk variables were not found. Statistically, this is explained through weak or non-existent bivariate correlations between generational status and criterion variables (see Table 5, Results). Measurement may also have been problematic. In the present study, generational status was originally intended to be one of two indicators for the latent construct acculturation to U.S. mainstream culture because generational status has been shown as a useful factor to incorporate in acculturation research (Dinh & Bond, 2008). As a stand-alone predictor, however, generational status may have lacked more specific and diverse response options that were used by other researchers who found a positive relationship between generational status and disordered eating patterns. For example, in Chamorro & Flores' (2000) cross-sectional study with various generations of Mexican American women and DE, a broader range of generation options were offered (i.e., first through fifth generation) compared with only two options in the current study.

Perhaps more importantly, the effects of a family's migration history on cultural resilience and health behaviors are complex and may be impacted by the families' retention of Latino values and practices. Regardless of length of family history in the U.S., Latino families may choose to, or be encouraged to, retain and promote Latino values within their homes in an effort to promote more positive health and psychological outcomes.

Spirituality was removed from the model because a more parsimonious model fit was evidenced without it. Bivariate correlations indicated that the relationships between spirituality and criterion variables were generally weak (i.e., $\leq .20$), which perhaps explains the model fit improvement when spirituality was removed. Distribution for the Intrinsic Spirituality Scale (ISS; Hodge, 2003) with the present sample was normal (M = 6.16, SD = 2.61) and the reliability coefficient indicated that items were closely related as a group ($\alpha = .97$). Given research suggesting that higher spirituality and religiosity are related to more positive body image (e.g., Boyatzis & McConnell, 2006; Mahoney et al., 2005) the unexpected findings may be explained by two factors: focus of measurement and population demographics. For example, in an experimental study with European American, Christian college students, women who read affirmations with a theistic and Christian-based tone emphasizing God's love and acceptance of their bodies demonstrated increased body image at post-test. This was compared to women who read the same affirmations with no mention of God and only improved marginally and a control group whose body image declined (Boyatzis, Kline & Backof, 2007). Measuring spirituality and ED risk, therefore, might be more effective when using specific theistic language, instead of, or in addition to measuring broad spiritual relevance in participants'

lives as the ISS does in the present study. Second, the ISS was developed primarily with European American adults; therefore, the ISS may not have measured elements of spirituality that are specific to Latinas. For example, Latino theology literature identifies a personal relationship with the divine (e.g. God, Jesus, the Virgin Mary, etc.), the role of existentialism (i.e., suffering, relationships with the deceased), and empowerment/enhancement of life through church and community involvement as core constructs of Latino spirituality (Campesino & Schwartz, 2006). The non-theistic questions on the ISS are designed to be inclusive toward a broad range of spiritual traditions, yet limit the ability to capture specific relational and behavioral elements (e.g. praying to the Virgin Mary) that comprise culturally specific aspects of Latina spirituality.

As with acculturation to non-Latino/Hispanic culture, neighborhood risk-measured with the Self-Reported Neighborhood Risk Characteristics (SNRC; Echeverria et al., 2004) was removed from the model before the SEM analysis because neighborhood risk was not correlated with any of the predictor variables in the obesity-risk model. The SNRC subscales asked participants questions about how accessible healthy foods were in their neighborhoods, how connected their community felt, their access to exercise and culture of exercise present in their community. This measure was originally normed with a group of ethnic minority adults residing in an area of New York city, at which time the 2000 U.S. Census estimated 27% of families living below the federal poverty line, and only 10% of residents 25 years and older having earned a bachelor's degree. In the current study, most participants were currently enrolled in a 4-year college or had earned a Bachelor's degree (61.5%). Although data on their exact

residence (e.g., university housing, urban vs. rural housing, etc.) were not collected, it is likely that many participants lived in or around college settings, which are characterized by very unique and distinct food, exercise, and community environments and lower risk, in general. In addition, items and scales were refined based on environmental experiences of this New York community, which are arguably different for someone living in or around university housing. For example, items such as “There are grocery stores within walking distance of my home” may not be applicable to a student who obtain their food from a pre-paid campus food plan. Future obesity risk studies that explore neighborhood risk would benefit from researchers collecting more detailed data on neighborhoods, or ask participants to indicate categorical neighborhood dimensions (e.g., urban residential, college setting, rural, industrial, etc.).

Body mass index (BMI) was also removed from the obesity-risk model due to poor model fit. Bivariate correlational results show that of all predictor variables in the obesity risk model, BMI was only significantly related to *familismo* and that this relationship was modest (.17). Although higher BMI has been established by the medical community as a risk for obesity (Dietz, 2002), non-significant results in the present study may support recent scholarship critiquing the use of BMI as an accurate measurement of obesity and a predictive tool of health (Cogan, Smith, & Maine, 2008). Due to emerging limitations of this index, such as overestimating risk for athletes with larger muscle mass, the National Institutes of Health has stated that BMI alone does not predict obesity-related disease. NIH guidelines (National Institutes of Health, 2000) recommend an in-depth assessment including waist-circumference measurement and medical and family history of obesity, ED, type 2 diabetes, heart disease and high blood pressure. Results of

the present study support the notion that BMI alone may not be a sufficient predictor of obesity-risk and should be measured along with a comprehensive set of additional data.

Prevalence Findings

An aim of this study was to contribute to ongoing efforts to measure prevalence of ED among young adult Latinas. With the present sample, none of participants met criteria for Anorexia nervosa (AN) and three percent met criteria for sub-threshold AN. This is comparable to lifetime prevalence rates for all ethnic groups (0.5%; American Psychiatric Association, 2000), and also to lifetime prevalence for Latinas in the U.S. (0.12%; Alegria et al., 2007). Approximately fifteen percent of participants met criteria for bulimia nervosa (BN) and five percent for sub-threshold BN, which are significantly higher than estimates for all ethnic groups (3-5%; APA, 2000), and estimates for Latinas (1.91%). None of the participants in the present study met criteria for binge eating disorder (BED) or sub-threshold BED.

Rates of BN and sub-threshold BN are concerning. Though higher than the national lifetime prevalence for Latinas, rates in the present study follow a similar trend to findings in a study among low-income Latina college students on the east coast. In this study by Gentile and colleagues (2007), AN and BED were low (1.1% and 2.4%, respectively) and closer to national averages, in contrast to high rates for full threshold BN (9.2%). This is consistent with previous research among Mexican American college students showing that women endorsing the most disordered eating patterns underscored bulimic symptomology (Chamorro & Flores, 2000). Higher rates for BN among the current study participants and those mentioned here may be indicative of the environment

and age range of the samples. Specifically, researchers have identified that on predominantly European American (EA) campuses, the college environment may be hostile for many students of color (Gloria & Rodriguez, 2000; Nuñez, 2009) which stems from a lack of cultural congruence (Gloria & Robinson Kurpius, 2001). For Latina/o college students, cultural congruence is positively associated with psychological wellbeing (Gloria, Castellános, Scull, & Villegas, 2009) and sense of belonging (Bordes & Arredondo, 2005). A lack of congruence, and/or hostility may add additional strain to the existing academic acculturation process for Latinas in college environments. Latinas may then engage in bulimic behaviors as a method of coping, and in response to heightened social comparison with EA women. In other words, a college environment may be particularly stressful, putting young adults Latina women at risk for BN. Chamorro and Flores (2000) theorize that for Latinas, bulimia parallels the interplay between receiving/accepting vs. rejecting/separating that is inherent in both the binge-purge cycle as well as the acculturation process. Future research would benefit from investigating these relationships further.

Another important consideration is how participant recruitment from ethnicity based organizations (EBO), such as Latina sororities or MEChA, may have affected the sample composition. Notably, Latina sorority email networks appeared to contribute strongly to the sample size based on anecdotal evidence that the number of participants increased significantly every time a new Latina sorority network was contacted. Unfortunately, participants were not directly asked about their EBO affiliation(s), therefore this observation is anecdotal. Nonetheless, this data collection trend suggests that a significant portion of the sample was comprised of women who participate in extra-

curricular organizations that emphasize ethnic pride. Further, if the sample was comprised largely of sorority members, cultural norms surrounding Greek life socialization processes are worth considering. For instance, members of college sororities are proposed to be at higher risk for developing eating disorders (Alexander, 1998) due to peer contagion effects related to heightened self-objectification and body image dissatisfaction (Rolnick, Engeln-Maddox, & Miller, 2010). The high rate of BN present could be related to the heightened focus on body image found in sororities, but more research is needed, especially given that no research has been conducted with Latina sororities.

Finally, high rates of BN found with this study also may be related to participant geographic location considering that the highest rates of participation came from states where greater numbers of Latinos reside (i.e. California, Oregon, Florida, and New York). One study with adolescent girls residing in Texas found that a greater density of Mexican American girls in the area was positively related to greater bingeing symptomology (Joiner-Kashubeck, 1996), indicating that unrealistic beauty standards may exist within Latina/o communities regardless of geographic proximity to European American women.

In addition to alarming rates of BN, obesity and overweight prevalence were noteworthy. Approximately 16 percent (*n*=42) met "overweight" criteria, and approximately 12 percent reported BMI indices that qualify as "obese". Obesity and full- and sub-threshold BN rates in the present study may be related. Extant research on obesity indicates that those who meet medical criteria for obesity, or are at risk of becoming obese, are more likely to use unhealthy weight loss practices, such as vomiting,

using diet pills, or laxatives (Neumark-Sztainer, Story, Falkner, Beuhring, & Resnick, 1999). Future research would benefit from exploring the link between disordered eating and obesity among young adult Latinas in order to target prevention of specific weight-loss practices that pose risks among this population.

Strengths and Implications for Practice

There are a number of study strengths worth mentioning. First, a strengths-based paradigm was utilized to explore resilience among Latinas, a growing ethnic minority population. With the expansion of ED research identifying risk among Latinas, it is important to move towards understanding cultural strengths that may be encouraged or supported when working with this population. Second, congruent with recommendations to engage in multifarious acculturation research, a bidimensional model was used, which allowed for the first examination of biculturalism and ED among Latinas. This study is also the first to examine the mediating effect of psychological distress on cultural resilience and ED symptoms and risk with Latina women. Third, original data were collected using community and social media networks to expand recruitment. This recruitment strategy allowed for recruitment of young adult Latinas from across the country for which university association was not necessary to take the questionnaire, expanding the scope of demographics in this study. It is important to note, however, that only 15% of the sample had never attended college, therefore, results primarily describe university affiliated Latinas. Finally, the survey was offered in English and Spanish to ensure that Spanish-dominant speakers were given the opportunity to participate.

Findings from this study provide several implications for practice, including a) clinical intervention, and b) community prevention, education and outreach. First, results

highlight the importance of increasing clinicians' knowledge about cultural issues in conceptualizing, treating, and preventing eating- and body-related concerns. For example, based on familismo findings, therapists can work within a family context (either individually or within family –based interventions) and support connectedness/interdependence among the client's family of origin, which may protect against the harmful effects of media and societal values glorifying a thin, European American beauty ideal. Incorporating family support and connectedness may also be useful for Latinas presenting with depression and anxiety, regardless of ED symptoms and risk behavior. For example, if Latinas are involved in healthy body image psycho-education, or depression management groups, group leaders can incorporate the possibility of family connection as a support-focused coping strategy. It is important, however, to be aware that some Latinas may not embrace this as a treatment goal, especially if the family has been a source of substantial distress. Targeting the family would be helpful in these instances, given their potential need for interventions aimed at connectedness and support. Based on ethnic identity affirmation findings, therapists working with Latina women should consider the potential usefulness of working from a feminist and/or multicultural framework. Attention to context, for example, is a cornerstone of feminist and multicultural therapies, which provides an opportunity to conceptualize Latina's experiences from a social constructivist perspective (American Psychological Association, 2003; Vasquez, 1994) and help the client identify internalized racism that may have contributed to poor body image. In addition, collaborating with clients to understand eating- and body-related concerns in the context of their sociopolitical environments may provide opportunities for empowerment.

Clinical interventionists might also consider how to apply the finding that depression and anxiety partially mediated the relationship between cultural resilience and ED symptoms and risk. For Latinas with lower ethnic identity affirmation and less family connectedness for support (perhaps due to high family conflict), it is possible that ED risk is indirectly amplified through the presence of psychological distress. Interventions that target depression and anxiety symptoms could indirectly reduce the impact of ED symptoms and risk, or prevent escalation. A treatment focus on psychological distress may be particularly helpful with Latinas that are ambivalent about making changes to their disordered eating behaviors, or in a contemplative stage of change (Prochaska, DiClemente, & Norcross, 1992) which is common with ED clinical treatment (Geller, Drab-Hudson, Whisenhunt, & Srikameswaran, 2004; Tantillo, Nappa Bitter, & Adams, 2001). It should be noted that some Latina groups (i.e., Mexican Americans) are less likely to seek treatment than their European American counterparts and, of those that have sought help, are less likely to have been diagnosed or treated (Cachelin, & Streigel-Moore, 2006). Given that evidence for effective ED treatment is growing, research is needed to address potential barriers to Latinas' help-seeking.

Prevention and community education efforts (e.g. campaigns on positive body image campaigns and healthy relationship with food) should include images of women from a range of ethnic backgrounds, particularly images of Latinas that include an indigenous, non-western phenotype. Further, efforts to equip women and girls with tools to understand and resist harmful media messages should underscore the importance of ethnic pride and affirm Latina beauty. To this end, current efforts in high schools and colleges to promote Latino/Chicano advancement (e.g. ethnic studies programs; MEChA

conferences) should include a focus on Latina body image issues and highlight the importance of ethnic identity affirmation as a tool against psychological distress and unhealthy eating behavior.

The present study findings underscore the importance of targeting cultural resilience when conceptualizing treatment, prevention, and education with Latina young adults. Independent of acculturation to U.S. mainstream culture, biculturalism, or successful negotiation of both cultures facilitates engagement with cultural practices and values that protect Latinas from negative outcomes. Accessing and utilizing cultural strengths is often contrary to societal messages toward Latino families, encouraging rapid adaptation to mainstream values and behaviors, and often shunning efforts to encourage Latino pride. In recent years, for example, the state of Arizona passed legislation to end ethnic studies in high schools, which were aimed at raising critical consciousness and ethnic pride among ethnic minority students. Unfortunately, messages like these contradict research findings on the positive role of biculturalism and higher ethnic identity affirmation, and may contribute to internalized racism. When designing interventions, it is important to understand the sociopolitical forces that prevent Latinas from drawing upon helpful cultural traditions that increase their ability to develop psychological wellness and positive eating and health behaviors.

Limitations of the Study

The most significant limitations to this study are with regards to measurement, sampling, and design. Although most of the psychological distress and ED symptoms and obesity risk measures in this study have been used with Latino populations, the majority of items were developed with predominantly European American samples. In addition,

the acculturation measure only measured language use; therefore, generalizability of biculturalism findings is limited to the adoption and navigation of Spanish & English language use as opposed to consideration of other biculturalism skills such as integrating two or more sets of cultural values. Obesity was measured using body mass index, a neighborhood risk scale, and loss of control, however, due to non-significant relationships with other variables in the model, BMI and neighborhood risk were removed. This left loss of control as the sole indicator, which fails to assess the breadth and depth of obesity risk. Next, sampling was network-driven, self-selected, and internet-based. The high representation of college students and professionals, as well as members of cultural organizations, may limit generalizability of findings to the broad Latina population. The self-selected nature of the sample may also reduce the generalizability. Further, all study variables were based on self-report. It is recommended that future studies improve measurement by including information provided by alternate informants, such as by trained research interviewers and clinicians, and use multi-method forms of data collection. Although responses between handwritten and online surveys are shown to have no substantial differences (Ilieva, Baron, & Healey, 2002), anecdotal evidence suggests that technical barriers such as lacking access to online technology as well as not responding truthfully or posing as a different person may contribute to random responding. Finally, this study employed cross-sectional design, which does not allow for causal inferences. This study also explored hypothesized relationships through latent construct design with SEM. Though powerful in offering a method to test hypotheses at a higher level of abstraction (Kline, 2005), nuanced information about individual indicators

is somewhat lost. Questions regarding the direct relationship between familismo and dieting, for example, cannot be answered using this model format.

Recommendations for Future Research

Results from this study have several implications for future research. First, the present study failed to examine within group differences. It is recommended that future studies focus on understanding ED risk and cultural strengths for different groups of Latinas (e.g. Puerto Rican, Guatemalan, etc.) given the vast heterogeneity of values, practices, and migration patterns among these groups.

Findings of this study indicate that measurement is an important avenue for future research. Development of measures of eating and body image experiences relevant to Latina cultures are needed to improve assessment with this population and target treatment. Body image measures, for example, might include a scale on body comparison to dominant culture ethnic groups. Chamorro and Flores (2000) note that future research would benefit from incorporating interviews to assess the complexity of Latinas' relationships with food including familial and intergenerational components of eating patterns and weight ideals. Also, as done with a Chinese sample (Lee, Lee, & Leung, 1998) using native food idioms in assessment might prove revealing. Given high rates of BN in this sample and others noted earlier, Latina-normed measurement of the binge-purge cycle would be especially useful.

Next, although the current study was strengthened by using a bidimensional framework for acculturation, it lacked a more in-depth understanding of the dynamic, multifaceted and complex acculturation experience. Contextual factors that impact acculturation beyond length of time in the U.S. are integral to this understanding.

Ecological conditions, such as Latinas' place of residence, the size and form of their family of origin unit, access to resourceful networks, population density, or the cultural features of an ethnic enclave are important contextual indicators of acculturative processes (Salant & Lauderdale, 2003). In addition to the language acquisition and proficiency used in the present study, future research with young adult Latinas and DE would benefit from acculturation measurement that considers the acquisition of a) dominant cultural-related behaviors (e.g. dietary habits); b) relational behaviors, such as interracial partnering; and c) membership in various sociocultural groups from the dominant culture (Lopez-Class, Castro, & Ramirez, 2011).

Finally, future research would benefit from statistical modeling that captures different and more individualized relationships than the ones examined in the present study. The present model looked at cultural resilience as a mediator between acculturation to U.S. mainstream culture and ED symptoms and risk, which was not found. Future research would benefit from understanding the potential mediating role of cultural resilience factors between psychological distress and ED symptoms and risk. Theoretically, components of familismo and ethnic identity affirmation may act as buffers from the effect of existing depression or anxiety on the development of DE. The present study did not investigate this relationship. In addition, the use of structural equation modeling (SEM; Kline, 2005) has important strengths as well as limitations. Modeling in this study used grouped indicators that were theoretically interrelated, yet also unique in their own ways. Specific characteristics of grouped indicators (e.g. DE behavior vs. body image vs. dieting) and their relationships to other indicators (e.g. *familismo*) are lost. Future research is needed to examine how an increase or decrease in

specific resilience factors may impact the development of specific symptomology of eating disorders.

Conclusion

In the present study, cultural resilience factors were associated with less psychological distress and less ED symptoms and risk. Psychological distress also partially mediated the relationship between cultural resilience and ED symptoms and risk, indicating the possibility of added risk for DE when cultural resilience is low and psychological distress is high. Acculturation to U.S. mainstream culture was not associated with cultural strengths or negative outcomes; rather, biculturalism, or successful negotiation of both cultures appeared to facilitate use of cultural practices and values that protect Latinas from negative eating behaviors and psychological outcomes.

Resisting the pressures to adopt unrealistic beauty ideals may require Latinas to draw from values and beliefs that make most sense to them, including family support and positive feelings about being Latina. Thus, when engaged in counseling and psychotherapy with young adult Latinas at risk for, or presenting with ED symptoms, clinicians should assess for ways that family support and positive ethnic identity can be incorporated to strengthen treatment. Further, given the well-established link between psychological distress and DE, it is important to continue investigating the role that cultural resilience variables play in Latinas' ability to navigate these health risks.

APPENDIX A

INSTRUMENTS

Demographic Questionnaire

Instructions: Please complete the following questions by providing an answer in the text box or clicking on the response option that most accurately captures your experience.

Age: _________

Education:
(please check highest level of education received)

______ 8th grade
______ some high school
______ graduated high school
______ received GED; high school equivalency
______ some vocational training
______ currently enrolled in vocational training program
______ certificate/degree from vocational college
______ some college/university
______ currently enrolled in community college
______ Associate's degree
______ currently enrolled in university
______ Bachelor's degree
______ some graduate school
______ Master's degree
______ working on doctorate degree

Country of origin (where you were born): ___________________________________

How old were you when you began living in the U.S.

- **I was born in the U.S.**
- **Six years of age or younger**
- **Between age 7 and 17**
- **After the age of 18**

Were either of your parents born outside the U.S.?

- **Yes, both were born outside the U.S.**
- **Yes, one parent was born outside the U.S.**
- **No, both were born inside the U.S.**

Current State of Residence: ____

Spirituality
How would you describe your religious or spiritual orientation?

____ I don't have a religious or spiritual orientation
____ Protestant
____ Jehovah's Witness

____ Catholic
____ Christian
____ Muslim
____ Jewish
____ Mormon
____ Eastern (Buddhist or Hindu)
____ Other organized religion
____ Personal spiritual (unorganized)
____ Atheist
____ Agnostic
____ Other

My Sexual Orientation is:
______Heterosexual (Straight)
______Bisexual
______Gay
______Lesbian
______Queer
______Other (please describe): ____

Please estimate the range of your approximate YEARLY income:

- $ 0-$11,000
- $ 12,001- $22, 000
- $ 23, 001- 33,000
- $ 34, 000 – 44,000
- $ 45, 000-$55,000
- $ 56,000 - $66,000
- $ 66,000 and above

Brief Symptom Inventory (BSI)- Depression & Anxiety Subscales
Derogatis & Melisaratos (1983)

Below is a list of problems and complaints that people sometimes have. Please read each one carefully. After you have done so, please fill in the circle that best describes how much discomfort that problem has caused you during the past two weeks, including today

(1)	(2)	(3)	(4)	(5)
Not at all	A little bit	Moderately	Quite a bit	Very much

1. Feeling lonely
2. Feeling blue
3. Feeling no interest in things
4. Your feelings being easily hurt
5. Feelings of worthlessness
6. Feeling hopeless about the future

1. Nervousness or shakinesss inside
2. Suddenly scared for no reason
3. Feeling fearful
4. Feeling tense or keyed up
5. Spells of terror or panic
6. Feeling so restless you couldn't sit still

Brief Acculturation Scale (BAS)- Non-Hispanic Linguistic Proficiency & Media Subscales
Marin & Gamba (1997)

—

Please respond to the following questions by marking the description that best fits.

(1) Very poorly	(2) Poorly	(3) Well	(4) Very well

1. How well do you speak English?
2. How well do you read in English?
3. How well do you understand television programs in English?
4. How well do you write in English?
5. How well do you understand music in English?

(1) Almost Never	(2) Sometimes	(3) Often	(4) Almost Always

7. How often do you watch television programs in English?
8. How often do you listen to radio programs in English?
9. How often do you listen to music in English?

ETHNIC IDENTITY SCALE (EIS)- Affirmation (A) and Resolution (R) subscales
(Umana-Taylor, Yazedjuan, Bamaca-Gomez, 2004)

(1) Does not describe me at all	(2) Describes me a little	(3) Describes me well	(4) Describes me very well

1. My feelings about my ethnicity are mostly negative (A)
2. I am clear about what my ethnicity means to me (R)
3. I feel negatively about my ethnicity (A)
4. I wish I were of a different ethnicity (A)
5. I am not happy with my ethnicity (A)

6. I understand how I feel about my ethnicity (R)
7. If I could choose, I would prefer to be of a different ethnicity (A)
8. I know what my ethnicity means to me (R)
9. I dislike my ethnicity (A)
10. I have a clear sense of what my ethnicity means to me (R)

THE MEXICAN AMERICAN CULTURAL VALUES SCALE- Familism Subscales (Knight et al. 2009)

The next statements are about what people may think or believe. Remember, there are no right or wrong answers. Tell me how much you believe that....

(1) Not at all	(2) A little	(3) Somewhat	(4) Very much	(5) Completely

1. Parents should teach their children that the family always comes first. S
2. Children should be taught that it is their duty to care for their parents when their parents get old. O
3. Children should always do things to make their parents happy. R
4. Family provides a sense of security because they will always be there for you. S
5. If a relative is having a hard time financially, one should help them out if possible. O
6. When it comes to important decisions, the family should ask for advice from close relatives. R
7. It is always important to be united as a family. S
8. A person should share their home with relatives if they need a place to stay. O
9. It is important to have close relationships with aunts/uncles, grandparents, and cousins. S
10. Older kids should take care of and be role models for their younger brothers and sisters. O
11. Children should be taught to always be good because they represent the family. R
12. Holidays and celebrations are important because the whole family comes together. S

13. Parents should be willing to make great sacrifices to make sure their children have a better life. O
14. A person should always think about their family when making important decisions. R
15. It is important for family members to show their love and affection to one another. S
16. It is important to work hard and do one's best because this work reflects on the family. R

Intrinsic Spirituality Scale (ISS)
Hodge (2003)

—

Please circle the number along the scale that best reflects your initial feeling.

1. In terms of the questions I have about life, my spirituality answers:

No questions 0	1	2	3	4	5	6	7	8	9	Absolutely all my questions 10

2. Growing spirituality is:

More important than anything else in my life 10	9	8	7	6	5	4	3	2	1	Of no importance to me 0

3. When I am faced with an important decision, my spirituality:

Plays absolutely no role 0	1	2	3	4	5	6	7	8	9	Is always the strongest

										t cons ider atio n 10

In
4. Spirituality is:

The master motivator of my life, directing every other aspect of my life 10	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**Not part of my life 0**

5. When I think of the things that help me to grow and mature as a person, my spirituality:

Has no effect on my personal growth 0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Is the most important factor in my personal growth 10**

6. My spiritual beliefs affect:

Absolutely every aspect of my life 10	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**No aspect of my life 0**

EATING DISORDER DIAGNOSTIC SCALE (EDDS)
(Stice & Telch, 2000)

Please carefully complete all questions.

Over the past 3 months... Not at all Slightly Moderately Extremely

1. Have you felt fat?	**0**	**1**	**2**	**3**	**4**	**5**	**6**

2. Have you had a definite fear that you might gain weight or become fat?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
3. Has your weight influenced how you think about (judge) yourself as a person?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
4. Has your shape influenced how you think about (judge) yourself as a person?	**0**	**1**	**2**	**3**	**4**	**5**	**6**

5. During the past 6 months have there been times when you felt you have eaten what other people would regard as an unusually large amount of food (e.g., a quart of ice cream) given the circumstances? **YES** **NO**

6. During the times when you ate an unusually large amount of food, did you experience a loss of control (feel you couldn't stop eating or control what or how much you were eating)? **YES** **NO**

7. How many DAYS per week on average over the past 6 MONTHS have you eaten an unusually large amount of food and experienced a loss of control?
0 1 2 3 4 5 6 7

8. How many TIMES per week on average over the past 3 MONTHS have you eaten an unusually large amount of food and experienced a loss of control?
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

During these episodes of overeating and loss of control did you...
9. Eat much more rapidly than normal? YES NO
10. Eat until you felt uncomfortably full? YES NO
11. Eat large amounts of food when you didn't feel physically hungry? YES NO
12. Eat alone because you were embarrassed by how much you were eating? YES NO
13. Feel disgusted with yourself, depressed, or very guilty after overeating? YES NO
14. Feel very upset about your uncontrollable overeating or resulting weight gain? YES NO

15. How many times per week on average over the past 3 months have you made yourself vomit to prevent weight gain or counteract the effect of eating?
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

16. How many times per week on average over the past 3 months have you used laxatives or diuretics to prevent weight gain or counteract the effects of eating**?**
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

17. How many times per week on average over the past 3 months have you fasted (skipped at least 2 meals in a row) to prevent weight gain or counteract the effects of eating?

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

18. How many times per week on average over the past 3 months have you engaged in excessive exercise specifically to counteract the effects of overeating episodes**?**

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

19. How much do you weigh? If uncertain, please give your best estimate. ____________ lbs

20. How tall are you? _____ft. ____ in.

21. Over the past 3 months, how many menstrual periods have you missed? **1 2**

22. Have you been taking birth control pills during the past 3 months? **YES NO**

Cognitive Behavioral Dieting Scale (CBDS)
Martz, Strugis, & Gustafson (1996)

Directions: Please select the appropriate answer to how you have felt, thought, and behaved during the PAST WEEK

(1)	**(2)**	**(3)**	**(4)**	**(5)**
Never	Hardly Ever	Sometimes	Often	Always

1. I have felt fat.
2. I have used the nutritional labels on foods to determine if I eat a certain food or not.
3. I have planned out what I am allowed to eat for the day.
4. I have restricted my calorie intake to help me lose weight.
5. I am skipping meals to help me lose weight.
6. I have tried to reduce my caloric consumption for weight control.
7. I have eaten foods that I don’t prefer just because they are low in calories.
8. I have felt guilty about something I ate.

(1)	**(2)**	**(3)**	**(4)**	**(5)**
Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

9. I have been dieting to help control my weight.
10. The main reason I have exercised is to burn off calories.

11. I would have eaten much differently if I had not been concerned about my weight.
12. I have made food choices based on how I feel about my weight.
13. I have believed that dieting is good for my health.
14. I have increased my exercise in order to lose weight.

Body Shape Questionnaire (BSQ)-Shortened 8b
Evans & Dolan (1993)

We would like to know how you have been feeling about your appearance over the **PAST FOUR WEEKS**. Please read each question and circle the appropriate number to the right. Please answer all the questions.

OVER THE PAST FOUR WEEKS:

	Never	Rarely	Sometimes	Often	Very often	Always
1. Have you worried about your flesh being not firm enough?..................	1	2	3	4	5	6
2. Has eating even a small amount of food made you feel fat?..................	1	2	3	4	5	6
3. Have you avoided wearing clothes which make you particularly aware of the shape of your body?..	1	2	3	4	5	6
4. Have you felt ashamed of your body?...	1	2	3	4	5	6
5. Has worry about your shape made you diet?..	1	2	3	4	5	6
6. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)?..	1	2	3	4	5	6
7. Have you felt that it is not fair that other women are thinner than you?.	1	2	3	4	5	6
8. Have you worried about your flesh being dimply?................................	1	2	3	4	5	6

Self-Reported Neighborhood Characteristics Survey
(SRNC; Echeverria et al. 2004)

For each of the statements, please tell me whether you agree by choosing the best option. In answering these questions, please think of your neighborhood as the area within about a 20-minute walk from your home.

(1) Strongly Agree	(2) Agree	(3) Neutral	(4) Disagree	(5) Strongly Disagree

1. My neighborhood offers many opportunities to be physically active
2. Local sports clubs and other providers in my neighborhood offer many opportunities to get exercise.
3. It is pleasant to walk in my neighborhood.
4. My neighborhood has heavy traffic
5. There are stores within walking distance of my home
6. I often see other people exercise (for example, jog, bicycle, play sports) in my neighborhood.
7. It is easy to purchase fresh fruits and vegetables in my neighborhood.
8. The fresh produce in my neighborhood is of high quality.
9. There is a large selection of fresh fruits and vegetables available in my neighborhood.
10. It is easy to purchase low-fat products (such as low-fat milk or lean meats) in my neighborhood.
11. The low-fat products in my neighborhood are of high quality.
12. There is a large selection of low-fat products available in my neighborhood.
13. This is a close-knit or unified neighborhood.
14. People around here are willing to help their neighbors.
15. People in this neighborhood generally don't get along with each other.
16. People in this neighborhood can be trusted.
17. People in this neighborhood do not share the same values.

Cuestionario demográfico

Instrucciones: Por favor llene las siguientes preguntas haciendo "clic" junto a la respuesta que más corresponde cercas de tu experiencia.

Edad:________________

Mi Etnicidad: (por favor marque todos los que aplican.)

________Hispana
________Latina
________Chicana
________Mexicana Americana
________ Puertorriqueña
________Cubana/ Cubana Americana
________ Española/ Española Americana

________ Centroamericana (por favor especifique el país/los países)
____
________ Suramericana (por favor especifique el país/los países)
____
________ Otra (por favor
especifique)____

Educación:
(por favor marque el nivel más alto que has recibido)
__________ Octavo grado
__________ Algunos años de preparatoria (high school)
__________ Me gradué de la preparatoria (high school)
__________ Recibí mi GED; equivalencia de high school
__________ Algunos años de capacitación vocacional
__________ Certificado de capacitación vocacional
___________ Algunos años de colegio/universidad
__________ Estoy matriculada en un colegio comunitario
__________ Titulo asociado de colegio comunitario
__________ Estoy matriculada en la universidad
__________ Bachillerato/Licenciatura
__________ Estoy matriculada en un programa de Maestría
__________ Maestría
__________ Estoy matriculada en un programa Doctorado

País de nacimiento (donde naciste): ______________________

Cuantos años tenías cuando empezaste a vivir en los Estados Unidos?

- Nací en los Estados Unidos
- Menos de 7 años de edad
- Entro los 7 y 17 años de edad
- Después de los 17 años

Nacieron tus padres afuera de los Estados Unidos?

- Si, los dos nacieron en otro país.
- Si, uno de mis padres nació en otro país.
- No, los dos nacieron en los Estados Unidos.

Estado de residencia actual:_________________________________

Espiritualidad/Religión:
Cómo describirías tu espiritualidad o religión?

- No tengo religión o espiritualidad
- Protestante
- Católica

- ☐ Cristiana
- ☐ Musulmana
- ☐ Judía
- ☐ Mormona
- ☐ Budista/Hindú
- ☐ Testigo de Jehová
- ☐ Otra religión organizada
- ☐ Espiritualidad sin organización
- ☐ Ateística
- ☐ Agnóstica
- ☐ Otra

Mi Orientación Sexual es:
- ☐ Heterosexual
- ☐ Bisexual
- ☐ Gay
- ☐ Lesbiana
- ☐ Queer
- ☐ Asexual
- ☐ Otra (por favor describe):___________________________________

Por favor da un cálculo estimado de tu ingreso anual:

- ☐ $ 0-$11,000
- ☐ $ 12,001- $22, 000
- ☐ $ 23, 001- 33,000
- ☐ $ 34, 000 – 44,000
- ☐ $ 45, 000-$55,000
- ☐ $ 56,000 - $66,000
- ☐ $ 66,000 o más

ETHNIC IDENTITY SCALE (EIS)- Affirmation (A) and Resolution (R) subscales (Umana-Taylor, Yazedjuan, Bamaca-Gomez, 2004)

Cuando respondas a las siguientes preguntas, nos gustaría que pensaras en lo que TÚ consideras ser tu identidad étnica
Por favor escribe lo que consideras ser tu identidad étnica aquí
___________________________________ y refiérete a élla al responder a las preguntas a continuación.

	No me describe en absoluto	Me describe un poco	Me describe bien	Me describe muy bien

1. Mis sentimientos sobre mi identidad étnica son mayormente negativos.	1	2	3	4
2. Tengo claro lo que significa para mi, mi identidad étnica.	1	2	3	4
3. Me siento negativo/a acerca de mi identidad étnica.	1	2	3	4
4. Quisiera ser de otra identidad étnica.	1	2	3	4
5. No estoy contento/a con mi identidad étnica.	1	2	3	4
6. Entiendo cómo me siento acerca de mi identidad étnica.	1	2	3	4
7. Si pudiera escoger, preferiría tener otra identidad étnica.	1	2	3	4
8. Sé lo que mi identidad étnica significa para mí.	1	2	3	4
9. No me gusta mi identidad étnica.	1	2	3	4
10. Tengo un sentido claro de lo que mi identidad étnica significa para mí.	1	2	3	4

BSI (Ruiperez et al. 2001)
Direcciones: Por favor escoge la respuesta apropiada de cómo te has sentido, pensado, y hecho durante la última semana.

(1)	**(2)**	**(3)**	**(4)**	**(5)**
Nunca	Casi nunca	A veces	Muchas veces	Siempre

1. Sentimientos de soledad
2. Sentimientos de tristeza
3. Sensación de desinterés por las cosas.
4. Sus sentimientos se pueden herir fácilmente
5. Sentimientos de devaluación
6. Sentimientos de desesperación sobre el futuro

1. Nerviosismo o temblor interno
2. Susto rápido sin razón
3. Sentimientos de miedo
4. Sentimientos de tensión o agarrotamiento
5. Crisis de temor o pánico
6. Dificultad para estar quieto

THE MEXICAN AMERICAN CULTURAL VALUES SCALE- Familism Subscales (Knight et al. 2009)

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1. Los padres deberían enseñarle a sus hijos que la familia siempre es primero.

2. Se les debería enseñar a los niños que es su obligación cuidar a sus padres cuando ellos envejezcan
3. Los niños siempre deberían hacer las cosas que hagan a sus padres felices.
4. La familia provee un sentido de seguridad, porque ellos siempre estarán allí para usted.
5. Si un pariente está teniendo dificultades económicas, uno debería ayudarlo si puede
6. La familia debería pedir consejos a sus parientes más cercanos cuando se trata de decisiones importantes.
7. Siempre es importante estar unidos como familia.
8. Uno debería compartir su casa con parientes si ellos necesitan donde quedarse.
9. Es importante mantener relaciones cercanas con tíos, abuelos y primos.
10. Los hermanos grandes deberían cuidar y darles el buen ejemplo a los hermanos y hermanas menores.
11. Se le debería enseñar a los niños a que siempre sean buenos porque ellos representan a la familia
12. Los días festivos y las celebraciones son importantes porque se reúne toda la familia.
13. Los padres deberían estar dispuestos a hacer grandes sacrificios para asegurarse que sus hijos tengan una vida mejor.
14. Uno siempre debería considerar a su familia cuando toma decisiones importantes.
15. Es importante que los miembros de la familia muestren su amor y afecto unos a los otros.
16. Es importante trabajar duro y hacer lo mejor que uno pueda porque el trabajo de uno se refleja en la familia.

Intrinsic Spirituality Scale (ISS)
Hodge (2003)

1. Cuando se trata de las preguntas que tengo sobre la vida, mi espiritualidad contesta:

Ninguna 0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Todas**

2. El crecer espiritualmente:

Es más importante que cualquier otra cosa en mi vida 10	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**No tiene nada de importancia 0**

3. Cuando tengo que hacer una decisión importante, mi espiritualidad:

No influye mi	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Siemp**

decisión para nada 0										re es la consideración más fuerte. 10

4. La espiritualidad:

Es la motivación más grande de la vida, que dirige cada aspecto de mi vida 10	9	8	7	6	5	4	3	2	1	No es parte de mi vida 0

5. Cuando pienso en lo que me ayuda a crecer y a madurar como persona, mi espiritualidad:

No tiene efecto en mi madurez personal 0	1	2	3	4	5	6	7	8	9	Es el factor más importante en mi madurez personal 10

6. Mis creencias espirituales afectan:

Absolutamente cada aspecto de mi vida 10	9	8	7	6	5	4	3	2	1	Ningún aspecto de mi vida 0

EATING DISORDER DIAGNOSTIC SCALE (EDDS)
(Stice & Telch, 2000)

Por favor conteste todas las preguntas que siguen:

En los últimos 3 meses: No, para nada Un poco Moderadamente Mucho

1. ¿Te has sentido gorda?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
2. ¿Haz tenido un temor definitivo que vas a subir de peso o ponerte gorda?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
3. ¿Te ha influenciado tu *peso* en cómo piensas de ti misma o en cómo te juzgas?	**0**	**1**	**2**	**3**	**4**	**5**	**6**
4. ¿Te ha influenciado tu *figura* en cómo piensas de ti misma o en cómo te juzgas?	**0**	**1**	**2**	**3**	**4**	**5**	**6**

5. Durante los últimos 6 meses, ¿han habido momentos en los que has sentido que has comido lo que otros considerarían es una porción de comida demasiadamente grande (por ejemplo, un cuarto de galón de nieve)?
SÍ NO

6. En los momentos que has comido una porción de comida demasiado grande, ¿has sentido como perdiste el control (sentiste que no podías parar o controlar qué o cuanto comías)?
SÍ NO

7. ¿Cuantos días a la semana (aproximadamente) durante los últimos 6 meses has comido una porción de comida demasiado grande y has sentido que perdiste el control?
0 1 2 3 4 5 6 7

8. ¿Cuántas veces por semana (aproximadamente) durante los últimos 6 meses has comido una porción de comida demasiado grande y has sentido que perdiste el control?

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

Durante estos episodios de haber comido sobremas y perder control has…
9. ¿Comido más rápidamente que lo normal? SÍ NO
10. ¿Comido hasta que te sentiste incómoda de lo llena que estabas? SI NO
11. ¿Comido mucha comida cuando no tenías hambre? SI NO
12. ¿Comido sola por que estabas avergonzada del tamaño de comida que estabas comiendo? SÍ NO
13. ¿Sentido asco, depresión, o mucha culpa después de comer demasiado? SÍ NO
14. ¿Sentido muy derribada sobre lo que has comido o el aumento de peso que ha resultado? SÍ NO

15. ¿Cuantas veces por semana (aproximadamente) en los últimos 3 meses, te has hecho vomitar para prevenir el aumento de peso, o neutralizar el efecto de haber comido de mas? **0 1 2 3 4 5 6 7 8 9 10 11 12 13 14**

16. ¿Cuantas veces por semana (aproximadamente) en los últimos 3 meses, has usado laxantes o diuréticos para prevenir el aumento de peso, o neutralizar el efecto de haber comido de mas?
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

17. ¿Cuantas veces por semana (aproximadamente) en los últimos 3 meses, has ayunado (omitido por lo menos 2 comidas seguidas) para prevenir el aumento de peso, o neutralizar el efecto de haber comido de mas?
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

18. ¿Cuantas veces por semana (aproximadamente) en los últimos 3 meses, has hecho ejercicio en exceso para neutralizar el efecto de haber comido de mas? **0 1 2 3 4 5 6 7 8 9 10 11 12 13 14**

19. ¿Cuanto pesas? Si no estás segura, da tu mejor estimación. ____________ libras
20. ¿Cuanto mides? _____piez. ____ pulgadas
21. Durante los últimos 3 meses, ¿cuantos periodos menstruales has perdido? 0 **1** **2**
22. Durante los últimos 3 meses, ¿has tomado pastillas anticonceptivas? **SÍ** **NO**

Cognitive Behavioral Dieting Scale (CBDS)
Martz, Strugis, & Gustafson (1996)

Direcciones: Por favor escoge la respuesta apropiada de cómo te has sentido, pensado, y hecho durante la última semana.

(1)	(2)	(3)	(4)	(5)
Nunca	Casi nunca	A veces	Muchas veces	Siempre

1. Me he sentido gorda.
2. He usado las etiquetas de nutrición en las comidas para decidir si como ciertas comidas.
3. He planeado lo que me he permitido comer para el día.
4. He restringido las calorías que consumo para bajar de peso.
5. Estoy saltando comidas para poder bajar de peso.
6. He tratado de reducir las calorías que consumo para controlar mi peso.
7. He comido alimentos que no quiero simplemente porque estaban bajo en calorías.
8. Me he sentido culpable después de comer algo.

9. Me he puesto en dieta para tratar de controlar mi peso corporal.
10. La razón principal por haber hecho ejercicio ha sido para quemar calorías.
11. Comería muy diferente si no estuviera preocupada por mi peso.
12. He hecho decisiones sobre la comida basadas en cómo me siento sobre mi peso.
13. He creído(o creo) que ponerme en dieta es bueno para mi salud.
14. He aumentado mi ejercicio para poder bajar de peso.

Body Shape Questionnaire (BSQ)-Shortened 8b
Evans & Dolan (1993)

Me gustaría saber cómo te has sentido acerca de tu apariencia en las últimas 4 semanas. Por favor lee cada pregunta y elige el número que corresponde.

EN LAS ÚLTIMAS 4 SEMANAS:

(1)	**(2)**	**(3)**	**(4)**	**(5)**
Nunca	Casi Nunca	A veces	Muchas veces	Siempre

1. ¿Te has preocupado que tu cuerpo no está suficientemente firme?
2. ¿Te has sentido gorda, aun cuando no has comido mucho?
3. ¿Has evitado usar ropa que te hacen consciente de tu figura?
4. ¿Te has sentido avergonzada de tu cuerpo?
5. ¿Te has puesto en dieta como resultado de preocuparte por tu figura?
6. ¿Te has sentido más contenta con tu figura cuando tu estomago está vacío (por ejemplo, en la mañana)?
7. ¿Has sentido que no es justo que otras mujeres son más delgadas que tú?
8. ¿Te has preocupado por la celulitis?

Self-Reported Neighborhood Characteristics Survey
(SRNC; Echeverria et al. 2004)

Por cada declaración, por favor dime SÍ estás de acuerdo y elige la mejor opción. Al dar tus respuestas, por favor piensa en tu vecindad como el área que cubre un paseo de 20 minutos de tu hogar.

(1) Fuertemente De Acuerdo	**(2) De Acuerdo**	**(3) Neutral**	**(4) En Desacuerdo**	**(5) Fuertemente en Desacuerdo**

18. Mi vecindad ofrece muchas oportunidades para estar físicamente activa.
19. Los clubs deportivos en my vecindad me ofrecen muchas oportunidades para hacer ejercicio.

20. El caminar en mi vecindad es agradable.
21. Mi ciudad tiene mucho tráfico.
22. Hay tiendas a las que puedo ir a pie desde mi hogar.
23. Frecuentemente veo a gente hacer ejercicio afuera en mi vecindad (por ejemplo, correr, andar en bicicleta, jugar deportes).
24. El comprar fruta fresca y vegetales frescos es muy fácil en mi vecindad.
25. Las frutas y vegetales en mi vecindad son de alta calidad.
26. La selección de fruta fresca y vegetales frescos es muy grande en mi vecindad.
27. Es fácil comprar productos bajos en grasas (como leche desnatada, o carne bajo en grasas) en mi vecindad.
28. Los productos desnatados en mi comunidad son de alta calidad.
29. Hay una selección grande de productos desnatados en mi vecindad.
30. Esta vecindad es muy unida.
31. La gente en mi vecindad está dispuesta a ayudar sus vecinos.
32. La gente en esta vecindad no se lleva bien.
33. La gente en esta vecindad se confían el uno al otro.
34. La gente en esta vecindad no comparten los mismos valores.

APPENDIX B

CONSENT FORMS & RECRUITMENT MATERIALS

Online consent form

You are invited to participate in a research study conducted by me, Diana Peña, a doctoral student in Counseling Psychology at the University of Oregon. This is my dissertation study. You were selected to participate because you identify as a Latina/Hispanic woman between 18-25 years who can read and write in English or Spanish. Your participation will help me learn about how young Latina/Hispanic women think and feel about their culture, identities and eating and health related behavior. Very little research has been done that examines healthy and disordered health patterns among Latina women your age, so your participation is invaluable.

If you decide to participate, you will complete an online survey, which should take about 15-20 minutes.

1. Your participation is voluntary. You can choose to participate in this study or not. You are also free to stop your participation in the survey at any time. However, discontinuing participation will exclude you from participating in the drawings for a $40 gift card for completion of the survey.
2. Some of the questions I will ask are of a personal nature. You do not have to answer any questions that make you uncomfortable.
3. The survey should take approximately 20 minutes.
4. After completing the survey you will have the option of entering a drawing for one of eight$40 gift cards to a store of your choice (iTunes, Borders, Forever 21, DSW Shoes, Macy's, or Starbucks). To enter the drawing, you will provide your contact information so that you can be mailed the gift card (if you win the drawing).
5. There are no specific direct benefits to you as a participant, other than the opportunity to win a $40 gift card). However, you may enjoy knowing that you will be contributing to knowledge that can help improve programs that help protect Latina women from unhealthy eating and health related behavior.
6. The answers you provide on the survey are confidential. Your survey will be given a code number and will be kept on a secure, password protected computer server.
7. If you choose to enter the drawing to win a gift card, your name and address will be provided on a separate page and will not be connected to your survey. One person will be drawn for every 37 that participate; therefore, out of 300 participants, your odds of winning a $40 gift card are 1 in 37.

If you have any questions, please feel free to contact me *, Diana Peña, dpena@uoregon.edu, Deanna Linville, Ph.D. at linville@uoregon.edu, or Krista Chronister, Ph.D. at kmg@uoregon.edu.* If you have questions regarding your rights as a research subject, contact the Office for Protection of Human Subjects, University of Oregon, Eugene, OR 97403, (541) 346-2510. This Office oversees the review of the research to protect your rights and is not involved with this study.

You may print this page to retain for your records.

Please note that you must identify as a Latina or Hispanic female, between the ages of

18-25, who can read and write in English **or** Spanish. You **DO NOT** have to be fluent in both languages.

If you agree to participate in the research survey, please click the button that says "I agree." If you do not want to participate in the study, you may exit from the survey at this time.

Clicking "I agree" indicates that you have read and understand the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation without penalty, that you were informed that you could print a copy of this form, and that you are not waiving any legal claims, rights or remedies.

[Spanish Version]

Forma de Consentimiento

Estas invitada a participar en un estudio de investigación, conducida por Diana Peña, un estudiante doctoral en Counseling Psychology en la Universidad de Oregón. Este es mi estudio disertación. Fuiste seleccionada porque te identificas como mujer Latina/Hispana entre 18-25 años que puede leer y escribir en Inglés o Español. Tu participación me ayudara aprender más sobre la forma que mujeres Latinas/Hispana se sienten y piensan sobre su cultura, sus identidades, y su conducta alimentaria. Hay muy poca investigación sobre estas temas con la mujer Latina, por lo tanto, tu participación es inestimable.

Si decides participar, vas a llenar una encuesta en el internet que toma aproximadamente 25 minutos.

- Tu participación es voluntaria. Tú escoges si quieres participar en el estudio, o no. También puedes parar tu participación en cualquier momento. Sin embargo, si no llegas al final de la encuesta, no podrás participar en el sorteo para la tarjeta de regalo de $40.
- Algunas de las preguntas son personales. No tienes que responder a las preguntas que te hagan sentir incomoda.
- Después de completar la encuesta, tendrás la opción de entrar a un sorteo para ganar una de las ocho tarjetas de regalo a la tienda que escojas (entre las opciones: iTunes, Borders, Forever 21, DSW Shoes, Macy's, o Starbucks). Para entrar en el sorteo, tienes que dar tu información de contacto para recibir la tarjeta por correo (si ganas el sorteo).
- Como participante, no hay beneficios directos específicos, a parte de la oportunidad de ganar la tarjeta de regalo de $40. Sin embargo, es posible que disfrutes saber que estas contribuyendo a la ciencia que puede mejorar programas que protejan la salud de mujeres Latinas.
- Tus respuestas en la encuesta son confidenciales. Tu encuesta recibirá un código de números y se mantendrá en una computadora segura y protegida.

- Si eliges entrar en el sorteo, tu nombre y domicilio se colectaran en una página separada y no estará conectada a tu encuesta. Por cada 37 mujeres que participen, una de ellas será elegida en el sorteo. Por lo tanto, entre 300 participantes, tus posibilidades de ganar una tarjeta de regalo so 1 en 37.

Si tienes cualquier pregunta sobre este estudio de investigación, por favor póngase en contacto con migo *Diana Peña, (dpena@uoregon.edu), Deanna Linville, Ph.D.(linville@uoregon.edu), o Krista Chronister, Ph.D. (kmg@uoregon.edu).* Este estudio se examino y fue aprobado por la Universidad de Oregón Office for Protection of Human Subjects (oficina para la protección de sujetos humanos). Para más información sobre tus derechos como participante de investigación, haga contacto con la oficina al:
human_subjects@orc.uoregon.edu.

Puedes imprimir esta página para tener en tus archivos.

Favor de notar que tienes que identificar como mujer Latina o Hispana, entre las edades 18-25, que puede leer y escribir en Español **o** Inglés. **No es necesario saber los dos idiomas.**

Si estás de acuerdo y eliges participar en este estudio, por favor haz “clic” en el botón que dice: “Estoy de acuerdo”. Si no quieres participar, puedes salir de esta encuesta ahorra.

Oprimiendo el botón que dice “Estoy de acuerdo” indica que has leído y entiendes la información provista arriba, que participas dispuestamente, que puedes retirar consentimiento y descontinuar sin penal, que estuviste informada que pudiste imprimir una copia de esta forma, y que no estás renunciando ningún derecho legal.

End of the survey message to participant:

Thank you very much for your participation!!
As a thank you, I would like to invite you to submit your name to a drawing for a $40 gift card to a store of your choice (among the list of stores available). Participation in the drawing is optional.

Before signing up for the drawing, I would like to kindly request that you forward the link to this survey to other Latina/Hispanic women between the ages of 18-25 years old who you know and believe would be interested in the study.

Here is the link to the survey: https://oregon.qualtrics.com/[survey title]

Please copy this link and forward it via email to your friends, family members, co-workers, and other individuals you know who fit the description and would be interested in participating.
Thank You!!

Please click on the NEXT button to submit your name and information for the drawing.
***PLEASE NOTE: your name and information will not be linked to your responses on the survey. Your responses on the survey are assigned a random ID number and once you click on NEXT you will have officially exited the study.
***Your responses will in NO WAY be connected to the information you provide me for the drawing.

[Spanish Version]

Gracias por participar!!

Como agradecimiento, quiero invitarte a participar en el sorteo para una tarjeta de regalo de $40 a la tienda que escoges (entre la lista disponible). El sorteo es completamente opcional.

Antes de dar tu información para el sorteo, quisiera respetuosamente pedir que mandes el link de esta encuesta a otras mujeres Latinas/Hispanas entre las edades 18-25 que conoces.

Aquí está el link de la encuesta: https://oregon.qualtrics.com/[survey title]

Por favor copea este link y mándalo a tus amigas, familiares, compañeras de trabajo, y otras mujeres que conoces que caben la descripción. Muchísimas gracias!!!

***Haz clic en el botón SEGUIR ADELANTE para someter tu nombre e información para el sorteo. Tus respuestas no estarán unidas a tu información personal de ninguna forma.

Thank You note to drawing gift card winners

Dear [ ],

Thank you for your recent participation in my dissertation study. Enclosed is a $40 gift card to the store of your choice. Your participation in my study was appreciated.

If you have any questions, please feel free to contact me , *Diana Peña, dpena@uoregon.edu, or one of my faculty co-investigators: Deanna Linville, Ph.D. at linville@uoregon.edu and Krista Chronister, Ph.D. at kmg@uoregon.edu*. If you have questions regarding your rights as a research subject, contact the Office for Protection of Human Subjects, University of Oregon, Eugene, OR 97403, (541) 346-2510. This office

oversees the review of the research to protect your rights and is not involved with this study.

Thank you

Diana Peña

[Spanish Version]

Gracias por participar.

Estimada [ ],

Gracias por tu participación en mi estudio. En este sobre, te mando la tarjeta de regalo a la tienda que escogiste. Sinceramente aprecio el que hayas participado en mi estudio.

Si tienes cualquier pregunta sobre este estudio de investigación, por favor póngase en contacto con migo *Diana Peña, (dpena@uoregon.edu), Deanna Linville, Ph.D.(linville@uoregon.edu), o Krista Chronister, Ph.D. (kmg@uoregon.edu)*. Este estudio se examino y fue aprobado por la Universidad de Oregón Office for Protection of Human Subjects (oficina para la protección de sujetos humanos). Para más información sobre tus derechos como participante de investigación, haga contacto con la oficina al: human_subjects@orc.uoregon.edu.

Muchísimas gracias,

Diana Peña

Email to Potential Participants (to be used for listserves and social networking websites)

Hello,

My name is Diana Peña. I am a graduate student in Counseling Psychology at the University of Oregon. I am writing to invite you to participate in my study that will help me learn about the way young Latina/Hispanic women feel and think about their culture, identities, and eating and health behaviors. To qualify, you have to:

- Be Latina/Hispanic woman
- Be 18-25 years old
- Be able to read and write in English **or** Spanish. You **DO NOT** have to speak

both languages.

If you decide to participate in this study, you will complete a brief online survey in English or Spanish (your choice). This survey takes approximately 15-20 minutes to complete. The survey is through a website called qualtrics.com and your answers will be anonymous and kept confidential. At the end of the survey, you have the option to enter a drawing to win 1 of eight $40 gift cards to the store of your choice (from the list of stores provided). In order to enter the drawing, you will have to provide your contact information at the end of the survey, but it will be kept separate from your survey and will only be used to mail a gift card to you if you win the drawing. Your contact information will then be erased after the drawing.

Participation in the study is completely voluntary. If you are interested in participating in the study or obtaining more information, please go to the following web address:

https://oregon.qualtrics.com/[survey title]

You may also forward this email (and/or flier) to other Latina/Hispanic women you know between the ages of 18-25.

If you have any questions concerning this research study, please do not hesitate to contact either me, *Diana Peña, at dpena@uoregon.edu, Deanna Linville, Ph.D. at linville@uoregon.edu, or Krista Chronister, Ph.D. at kmg@uoregon.edu*. This study has been reviewed and approved by the University of Oregon Office for Protection of Human Subjects. For more information about your rights as a research participant, you may email the office at human_subjects@orc.uoregon.edu.

Thank you very much.

Sincerely,

Diana Peña, M.S., Doctoral Candidate Counseling Psychology Program University of Oregon

Spanish version

Hola,

Mi nombre es Diana Peña. Soy estudiante en el programa de Counseling Psychology en la Universidad de Oregón. La quiero invitar a participar en mi estudio que me ayudara entender más sobre la forma que mujeres Latinas/Hispanas se sienten y piensan sobre su cultura, sus identidades, y su conducta alimentaria. Para calificar, tienes que:

- Ser una mujer Latina o Hispana
- Tener 18-25 anos de edad
- Poder leer y escribir en Español o Inglés. **No tienes que hablar los dos idiomas**.

Si decides participar, completarías una breve encuesta en el internet en Español o Inglés

(tu escoges). Esta encuesta toma aproximadamente 15-20 minutos para completar. La encuesta es por medio de un sitio llamado "qualtrics.com" y tus respuestas son anónimas y confidenciales. Al final de la encuesta, tendrás la opción de entrar a un sorteo para ganar una tarjeta de regalo de cualquiera de estas tiendas: Macy's, Forever 21, DSW Shoes, Starbucks, Borders. Para entrar en el sorteo, tendrás que dar tu información de contacto al final de la encuesta, pero esta información se mantendrá separada de tu encuesta para hacer imposible que alguien sepa tus respuestas. No más seria usado para mandarte la tarjeta de regalo si ganas el sorteo.

Participación en este estudio es completamente voluntaria. Si quieres participar, o para más información, por favor visite este sitio en el internet:

https://oregon.qualtrics.com/[survey title]

También puedes mandar este email o el volante a otras mujeres Latinas/Hispanas que conoces dentro las edades 18 a 25.

Si tienes cualquier pregunta sobre este estudio de investigación, por favor póngase en contacto con migo, *Diana Peña, (dpena@uoregon.edu), Deanna Linville, Ph.D.(linville@uoregon.edu), o Krista Chronister, Ph.D. (kmg@uoregon.edu)*. Este estudio se examino y fue aprobado por la Universidad de Oregón Office for Protection of Human Subjects (oficina para la protección de sujetos humanos). Para más información sobre tus derechos como participante de investigación, haga contacto con la oficina al: human_subjects@orc.uoregon.edu.

Muchísimas gracias.

Sinceramente,

Diana Peña, M.S., Candidata de Doctorado del programa Counseling Psychology en la University of Oregon

Latina/Hispanic Women:

If you are 18-25 years old, consider participating in this research study.

****

Win a $40 gift card!!!

****

Forever 21 iTunes

Starbucks DSW

Macy's Barnes&Noble

This study is approved by the University of Oregon CPHS Institutional Review Board.

Diana Peña, M.S.
University of Oregon
doctoral candidate
dpena@uoregon.edu

hhttps://oregon.qualtrics.com/SE/?SID=SV_558hqShLoUMOseg]

This study is approved by the University of Oregon OPHS Institutional Review Board.

- ***This study will help promote understanding of:***
  - ***Eating & health practices for young adult Latina/Hispanic women.***
  - ***How Latina/Hispanic women feel and think about their culture, identities, and health behavior.***
- ***At the end of the survey, you can enter a drawing for a chance to win one of eight $40 gift cards to a store of your choice.***
- ***Your responses will be anonymous.***

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