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MEDIATING AND MODERATING PROCESSES IN THE RELATIONSHIP BETWEEN SOCIOCULTURAL STRESS AND MENTAL HEALTH FOR LATINA/O STUDENTS AT A PREDOMINATELY WHITE UNIVERSITY

presented by

Duranda Cosette Orellana

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Major Professor's Signature

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MEDIATING AND MODERATING PROCESSES IN THE RELATIONSHIP BETWEEN SOCIOCULTURAL STRESS AND MENTAL HEALTH FOR LATINA/O STUDENTS AT A PREDOMINATELY WHITE UNIVERSITY

By

Duranda Cosette Orellana

A DISSERTATION

Submitted to
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ABSTRACT

MEDIATING AND MODERATING PROCESSES IN THE RELATIONSHIP BETWEEN SOCIOCULTURAL STRESS AND MENTAL HEALTH FOR LATINA/O STUDENTS AT A PREDOMINATELY WHITE UNIVERSITY

By

Duranda Cosette Orellana

This study examined a culture-specific adaptation of Taylor and Aspinwall's (1996) model of Mediating and Moderating Processes in Psychosocial Stress with Latina/o undergraduate students at a predominantly White university. The adapted model included concepts of previous researchers who have tested the relationships between stressors, mediators, moderators, and mental health outcomes. Appraisal of sociocultural stress (i.e., acculturative stress, minority status stress), individual cultural characteristics (i.e., ethnic identity, acculturation level), perceived social support (i.e., perceived informal support, perceived formal support), and coping (i.e., direct and indirect coping) were hypothesized to predict mental health (i.e., wellbeing, distress) among Latina/o undergraduates. In addition several relationships among these constructs were hypothesized.

The sample consisted of 201 Latina/o/Hispanic undergraduate students at Michigan State University. Students completed a questionnaire packet which included self-report measures of the various constructs in the model. Structural equation modeling (SEM) was conducted to test moderators and the hypothesized relationships in the adapted model. Post hoc analyses were conducted to improve the overall fit of the adapted model. The modified adapted model produced a good overall fit [χ^2 (df 167, N=201) = 241.67, $p > 0.001$, GFI = 0.90, AGFI = 0.86, RMSEA = 0.05, CFI = 0.94, NNFI = 0.93,

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PNFI = 0.68, PGFI = 0.65]. Direct significant positive and negative relationships were demonstrated. Statistically significant indirect relationships were also demonstrated.

Result revealed that neither gender nor SES moderated the relationships specified in the model. However, several relationships among the constructs in the model significantly differed for heritage groups (i.e., mono-ethnic, bi-ethnic). For mono-ethnic participants, the relationship between individual cultural characteristics and wellbeing was found to be mediated only by appraisal of sociocultural stress, indirect coping, and distress. Perceived social support was found to promote both high and low levels of wellbeing for bi-ethnic participants but not for mono-ethnic participants. Analyses also revealed that there were group mean differences on several of the latent variables of the final model.

This study focused on dimensions found to be salient for Latina/o ethnicity and culture as it expanded the literature on stress-mental health by being the first to empirically test the mediational processes by which individual cultural characteristics and perceived social support facilitate coping with sociocultural stress and consequently mental health. Findings suggest that university service providers consider and integrate contextual and ethnically relevant constructs into their service delivery. Furthermore, results indicate that for bi-mono-ethnic and bi-ethnic Latina/o individuals attending predominantly White universities identity development is a lifelong process.

ACKNOWLEDGMENTS

I wish to thank Robert Caldwell, Ph.D., Neal Schmitt, Ph.D., Israel Cuellar, Ph.D., and Fransisco Villarruel, Ph.D. for their direction and support which they provided during the process of conducting and completing this doctoral dissertation. I also wish to thank Seka Remsing for her assistance in the data collection stage. Finally, I wish to thank my fiancée, Marcel, and family for their emotional support throughout my graduate years.

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Subjective Happiness Scale	SHS

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INTRODUCTION

According to the U. S. Census, the Hispanic or Latina/o population for 2000 was estimated at approximately 35 million or 12.5% of the total U.S. population, a 57.9% percent increase from 1990 estimates. In the state of Michigan, approximately 324,000 of the total population of 10 million reported being of Hispanic or Latina/o descent, with the majority, 68%, indicating that they were of Mexican heritage (U. S. Bureau of the Census, 2000). According to census reports, Latinos constitute one of the fastest growing minority groups in this country (U.S. Bureau of the Census, 2000). However, the American Council on Education (ACE; 2001) has reported that Latinos continue to be underrepresented in higher education. According to ACE (2001), although the educational gap between Latinos and non-Latina/o Whites has narrowed in recent years, significant discrepancies continue to exist. For example, the college completion rates for Latinos are disproportional when compared to non-Latina/o Whites. In 1998, 28 percent of non-Latina/o Whites ages 25-29 had earned a bachelor's degree while only 10 percent of Latinos had done so. Previous research indicates that the low rate of Latinos graduating from four-year colleges can in part be accounted by cultural incongruencies (Cabrera & Nora, 1994; Gloria & Robinson-Kurpius, 1996), nonsupportive university environments (Cabrera & Nora, 1994; Cervantes, 1988; Ponterotto, 1990), and educational stereotypes (Retish & Kavanaugh, 1992).

For many students the transition into a university environment involves challenge and adjustment to the college atmosphere. However, findings of several studies indicate that Latina/o college students experience higher levels of stress in comparison to non-Latina/o White students (Bourassa, 1991; Cervantes, 1988; McCormack, 1995;

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Ponterotto, 1990; Quintana, Vogel, & Ybrarra, 1991; Smedley, Myers, & Harrell, 1993). In addition to the adjustments that must be made by all college students, Latina/o students face issues that many ethnic minority individuals living in the U.S. must contend with. These issues include: (a) experiencing racism and discrimination owing to their immigrant and/or minority status, (b) relating to the dominant culture, (c) retaining their ethnic or cultural heritage, and (c) experiencing stress as a result of these experiences (Phinney, 1991; Smith 1991; Roysircar-Sodowsky, & Maestas, 2000).

Within the university environment, Latina/o students may experience conflict regarding their cultural orientation (e.g., ethnic loyalty and cultural awareness) as a result of cultural incongruencies (Baron & Constantine, 1997). For example, Latina/o students who grew up in predominantly Latino neighborhoods for the first time must interact with others of mainstream culture on a consistent basis (Shibazaki, 1999). Conversely, Latina/o students who are raised in highly acculturated families and environments for the first time may question their orientation as they encounter Latina/o students who are less acculturated and hold different values and attitudes (Gloria & Rodriguez, 2000). Latina/o students must also negotiate an unwelcoming university environment (Cervantes, 1988; Gloria & Robinson-Kurpius, 1996). In particular, Latina/o students may experience interpersonal tensions between themselves and non-Latina/o White students and faculty (Smedley et al., 1993), negative events related to their minority status (e.g., prejudice, discrimination, multicultural insensitivity; Cabrera & Nora, 1994; McCormack, 1995), and internalization of these events (Retish & Kavanaugh, 1992). Thus, the differences in cultural orientations as well as experiences of negative events because of their minority status may be sources of stress for Latina/o students.

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Despite studies (e.g., Bourassa, 1991; Cabrera & Nora, 1994; Cervantes, 1988; McCormack, 1995; Ponterotto, 1990; Quintana et al., 1991; Smedley et al., 1993) indicating that Latina/o students who attend predominantly White universities report greater discrimination and social and cultural alienation than non-Latina/o White students, experience adjustment difficulties, and have higher dropout rates, few researchers (e.g., Najera, 1990) have attempted to identify the relationship between stressors and mental health outcomes with Latinos attending Midwestern universities where the Latina/o population has low enrollments. Most of the research (e.g., Aspinwall & Taylor, 1992; Morris, 1997; Padilla, Alvarez, & Lindholm, 1986; Quinones, 1996; Rodriguez, Myers, Morris, & Cardoza, 2000; Saldana, 1994; Shibazaki, 1999; Solberg & Villarreal, 1997; Suarez, Fowers, Garwood, & Szapocznik, 1997) that has examined this relationships among Latina/o college students has been conducted in states where there is a significant concentration of the Latina/o population: mainly in the West Coast, Southwest, New York, and Florida. Clearly, there is a need to research and understand the issues experienced by Latina/o college students at predominately White universities in the Midwest and the impact of these experiences on their mental health. Therefore, the present study will focus on Latina/o undergraduate students at Michigan State University where Latina/o/Hispanic enrollment was reported as 2% (N=859) of the total student population (N = 42,407) for the 2001/2002 school year (Office of Planning and Budgets, Michigan State University, 2002).

Research investigating Latina/o students' adjustment to college has not typically been the object of systematic study (Hurtado, Carter, & Spuler, 1996). Furthermore, these studies have not relied on a single definition of college adjustment. For example,

some have defined adjustment as institutional commitment, good academic performance, and the absence of psychological distress (Chartrand, 1992). Others have conceptualized adjustment as students' positive responses to unfamiliar norms, values, and expectations that predominate on campus (Bennet & Okinaka, 1990). Finally, some (Hurtado et al., 1996) have conceptualized adjustment as a multifaceted phenomenon characterized by resolution of psychological distress and transitional trauma. Studies specifically examining psychological functioning as a measure of Latina/o students' adjustment to stressful experiences in college (e.g., Aspinwall & Taylor, 1992; Morris, 1997; Najera, 1990; Padilla et al., 1986; Quinones, 1996; Rodriguez et al., 2000; Saldana, 1994; Shibazaki, 1999; Solberg & Villarreal, 1997; Suarez et al., 1997) have found that various individual characteristics, social resources, cultural characteristics, and/or appraisal and coping processes are related to psychological functioning. For example, individual variables such as: self-efficacy (Solberg & Villarreal, 1997) self-esteem (Aspinwall & Taylor, 1992; Najera, 1990; Padilla et al., 1986), locus of control (Aspinwall & Taylor, 1992; Padilla et al., 1986), introversion/extroversion (Padilla et al., 1986), and optimism (Aspinwall & Taylor, 1992); external variables such as social support (Morris, 1997; Shibazaki, 1999; Solberg & Villarreal, 1997; Riggio, Watring, & Throckmorton, 1993) and community involvement (Riggio et al., 1993); cultural characteristics such as ethnic identity (Quinones, 1996; Shibazaki, 1999), acculturation level (Morris, 1997; Quinones, 1996; Saldana, 1994; Rodriguez et al., 2000), biculturalism (Suarez et al., 1997), generational status (Padilla et al., 1986), and gender role socialization (Quinones, 1996); and process variables such as appraisal and coping strategies (Aspinwall & Taylor , 1992) have all been found to be related to psychological outcomes for Latina/o students.

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Although none of the above studies have tested all these variables simultaneously, the results suggest that for Latina/o college students, individual characteristics, social support, cultural characteristics, appraisal, and coping responses have a complex relationship to each other that in turn affect mental health.

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Chapter 1

LITERATURE REVIEW

The relationship between stress and mental health has been of research interest to scientists for some time. Investigators from a wide range of disciplines have attempted to identify the processes by which stressors produce harmful effects on the mental well-being of individuals (Warheit, 1979). Early research on stress focused on the simple relationship between stressful life events and various physical and psychiatric health outcomes (Martin, 1989). Thus, researchers originally conceptualized the impact of stress on mental health as a simple univariate process (Cervantes & Castro, 1985; Groag, 1996). This research had limited explanatory power, indicating that the relationship between stress and mental health outcomes was relatively weak (Cohen, Hettler, & Park, 1997). These results led researchers to attempt to account for greater proportions of variance in outcomes by examining models that focused increasingly on mediators (variables that influence both the predictor and criterion by accounting for the relations between the two; Lonner & Adamopoulos, 1997) and moderators (variables that control and potentially alter the strength or direction of the relationship between a predictor and criterion variable; Cohen et al., 1997; Groag, 1996; Holahan, Moos, & Bonin, 1997). Stress moderators and mediators examined included qualitative (i.e., gender, race) or quantitative (i.e., social support, personality) variables that are related to the extent to which a person will be affected by stress (Groag, 1996).

Some researchers (e.g., Billings & Moos, 1982a, 1982b; Lazarus & Folkman, 1984) became interested in the process that takes place between the experience and outcome of a stressor. According to these researchers, too many of the stress-outcome

models emphasized stable, structural properties of the person and environment rather than examining the changes that occur as the process of stress unfolded (Martin, 1989). Thus, in an attempt to outline the dynamics of the stress-mental health relationships, they began studying models that included not only stable factors but also changing processes that impacted mental health (Billings & Moos, 1982a, 1982b; Lazarus & Folkman, 1984; Miranda & Castro, 1985). These researchers were known as the transactional model theorists.

Review of Stress-Illness Models

The following section presents models of stress from which the proposed model was developed for this study. The models presented below were developed by theorists interested in refining early stress-illness models which did not provide a theoretical understanding of the dynamic interactions among personal, environmental, and/or process variables. These investigators argued that most stress-illness models conceptualized these variables as "static" and "occurring within a closed system" (Warheit, 1979).

Life Events: Sources, Adaptations, and Outcomes. Warheit's (1979) Life Events, Sources, Adaptations, and Outcomes Model (Figure 1) posits that stressful life events arise from three sources: the individual's psychological and biological constitution, culture, and social environment. Thus, psychosocial stress is conceptualized as being different from the stressful events that precipitate it. The adaptive-nonadaptive screens are the coping resources available to individuals to meet stressful demands. These may include an individual's personality, cultural beliefs, and social support networks. According to Warheit (1979), stress in this model is an altered state that occurs when the

demands on an individual exceed his or her capabilities to respond. The outcomes of stress in Warheit's model are viewed as individual symptoms, cultural syndromes and/or social dysfunction. According to Warheit (1979), his theory reflects the systemic nature of life events, coping resources, stress, and stress outcomes as they occur in a temporal context. Warheit (1979) hypothesized that when individuals face a stressful event, they will first rely on their individual characteristics to handle stress. Individuals will then rely on support from others. If both of these are found to be inadequate, they may then turn to their culturally provided beliefs and values. However, in practice, most individuals will seek to maximize on all available resources in a complementary manner.

The importance of Warheit's (1979) model to the present study lies in its consideration of culture in the stress-mental health process. According to Cuellar (2000), culture has been viewed as having a potential impact on numerous aspects of health, illness, and adaptation. More specifically, culture influences perceptions of illness, manifestations of illness, prevalence rates, susceptibility, acceptance of illness, reactions to illness, adjustment to illness, and its assessment and treatment (Cuellar & Gonzalez, 1999; Cuellar, 2000). Thus, culture is critical to the present study because it allows for the inclusion of culture-specific beliefs and values which are believed to influence the experience of stress. Culture is believed to give "individuals sources of explanation for events that cannot be accounted for by a society's logic or science. Culture also provides symbolic definitions that attach meaning to events." (Parsons, 1951; as cited by Warheit, 1979, p. 503). Also important to the present study is Warheit's acknowledgment of the impact of personal, cultural, and social resources on stress and his conceptualization of

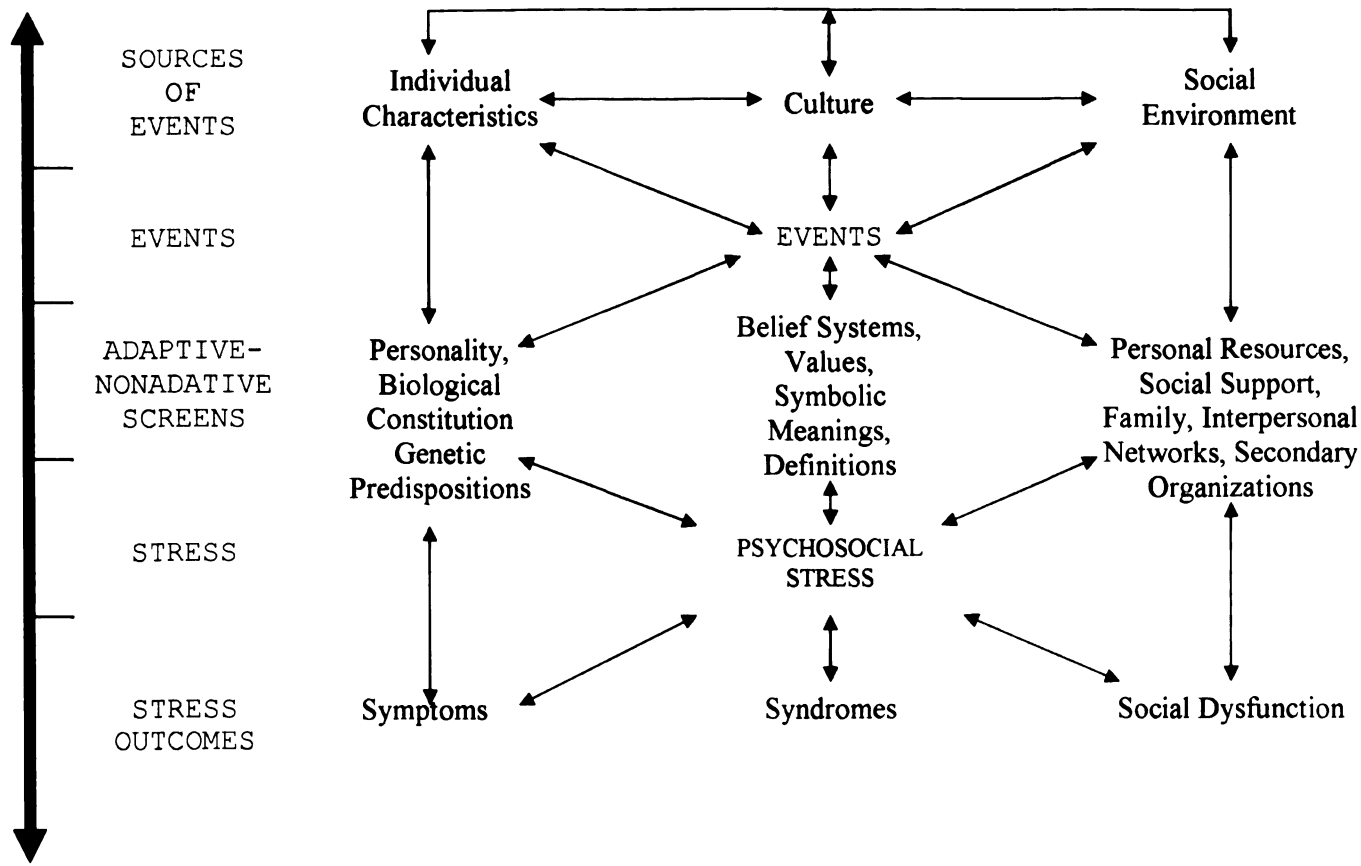

Figure 1. Life Events: Sources, Adaptations, and Outcomes (Warheit, 1979)

stress as an altered state that is distinct from the stressful event (stressor) and stress outcome (distress).

Although Warheit's (1979) model incorporates personal, cultural, and the social environment as important factors in the relationship between stress and stress outcomes, it does not include process variables (i.e., appraisal, coping). Consequently, the model does not account for individual differences in the perception of stress and coping methods. In addition, Warheit conceptualizes culture as existing outside of the individual. Thus, he fails to recognize that culture is also a system of ideals within an individual (Geertz, 1984) that can cause considerable within group differences (Sodowsky, Lai, & Plake, 1991) and provides a better understanding of the person (Cuellar, 2000).

Integrative Stress and Coping Model. Billings and Moos (1982a) proposed the Integrative Stress and Coping Model (Figure 2) which posits that the stress-mental health relationship is not only mediated by personal characteristics (i.e., self-confidence, self-esteem, optimism) and environmental resources (i.e., emotional support; guidance and assistance from one's broader social network) but also by cognitive appraisal, coping responses and the interrelationships among these domains. According to Billings and Moos (1982a), personal characteristics and environmental resources are also directly related to subsequent functioning. Furthermore, the personal system, environmental system, and characteristics of the stressors, directly influence the appraisal of and coping responses to stress which ultimately determine one's health and functioning. In this model there is also a bi-directional relationship between personal and environmental resources.

The importance of the Integrative Stress and Coping Model to this study is that like Warheit (1979), Billings and Moos (1982a) emphasize a relationship between personal resources and social resources. Also like Warheit (1979), Billings and Moos (1982a) examine the impact of personal and social resources on the stressors. However, unlike Warheit (1979), Billings and Moos (1982a) include appraisal and coping processes in their model. Thus, they consider the impact of personal and social resources on appraisal and coping responses.

Although Billings and Moos (1982a) include process variables in their model, they conceptualize appraisal and coping as one component, reflecting an inseparable relationship. The implicit assumption is that a single assessment of coping provides a representative sample of both appraisal and coping and that this is sufficient for evaluating the relationship of these processes to mental health outcomes (Folkman & Lazarus, 1986). Billings and Moos (1982a) also use the term "environmental resources" to refer to "social resources" (i.e., social support). Although the use of one term for the other is subtle, scientists are increasingly recognizing that social support is only one component of environmental resources, a much broader term that also encompasses variables such as income, neighborhood cohesion, job opportunities, etc. Furthermore, it is increasingly recognized that there are individual differences in the appraisal of social support and ability to extract needed support (Taylor & Aspinwall, 1996). These differences in appraisal of social support are likely to be affected by an individual's cultural characteristics such as worldview. However, using Billings and Moos' (1982a) model this relationship would be difficult to assess since they do not include the construct of culture in their model.

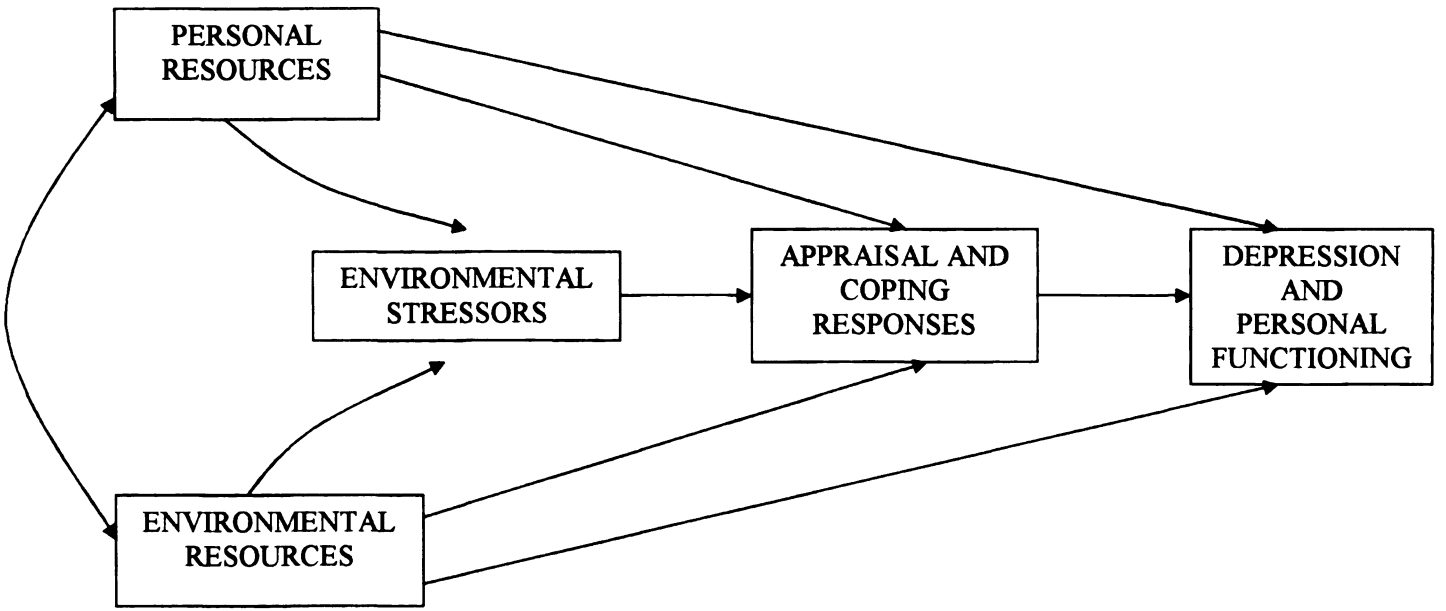

Figure 2. Integrative Stress and Coping Model (Billings & Moos, 1982)

The Stress-Mediation-Outcome Model. The model proposed by Miranda and Castro (1985) consists of seven interactive components: (1) Life change events or stressors; (2) structural factors (i.e., SES, acculturation level, gender) specific to the individual experiencing the life events change; (3) individually perceived stress which influences personal resources, coping responses, and support networks; (4) coping responses which are seen as being precipitated into action by individually perceived stress; (5) personal resources that mediate the effect of coping responses on mental health status; (6) support networks which mediate the impact of individually perceived stress on mental health; and (7) the outcome, mental health. See Figure 3. According to Miranda and Castro (1985) there is a bidirectional relationship between the level of individually perceived stress and mental health status. This relationship can also be mediated by coping responses, personal resources and social support networks. Although coping responses and personal resources are characterized as functioning independent of social support systems, all three have an effect on mental health status. The final component of Miranda and Castro's (1985) model is the relationship between life events change and individual perceived stress. This relationship is believed to be mediated by structural components (e.g., SES, Age).

Miranda and Castro's (1985) model is important to this study because they attempt to define what specific events, under what conditions, are linked with what sorts of mental health outcomes, for what people. The authors' argue that relating undifferentiated life change to an undifferentiated psychological outcome forms an overly simplistic model. Moreover, a simple model suggests a simple intervention.

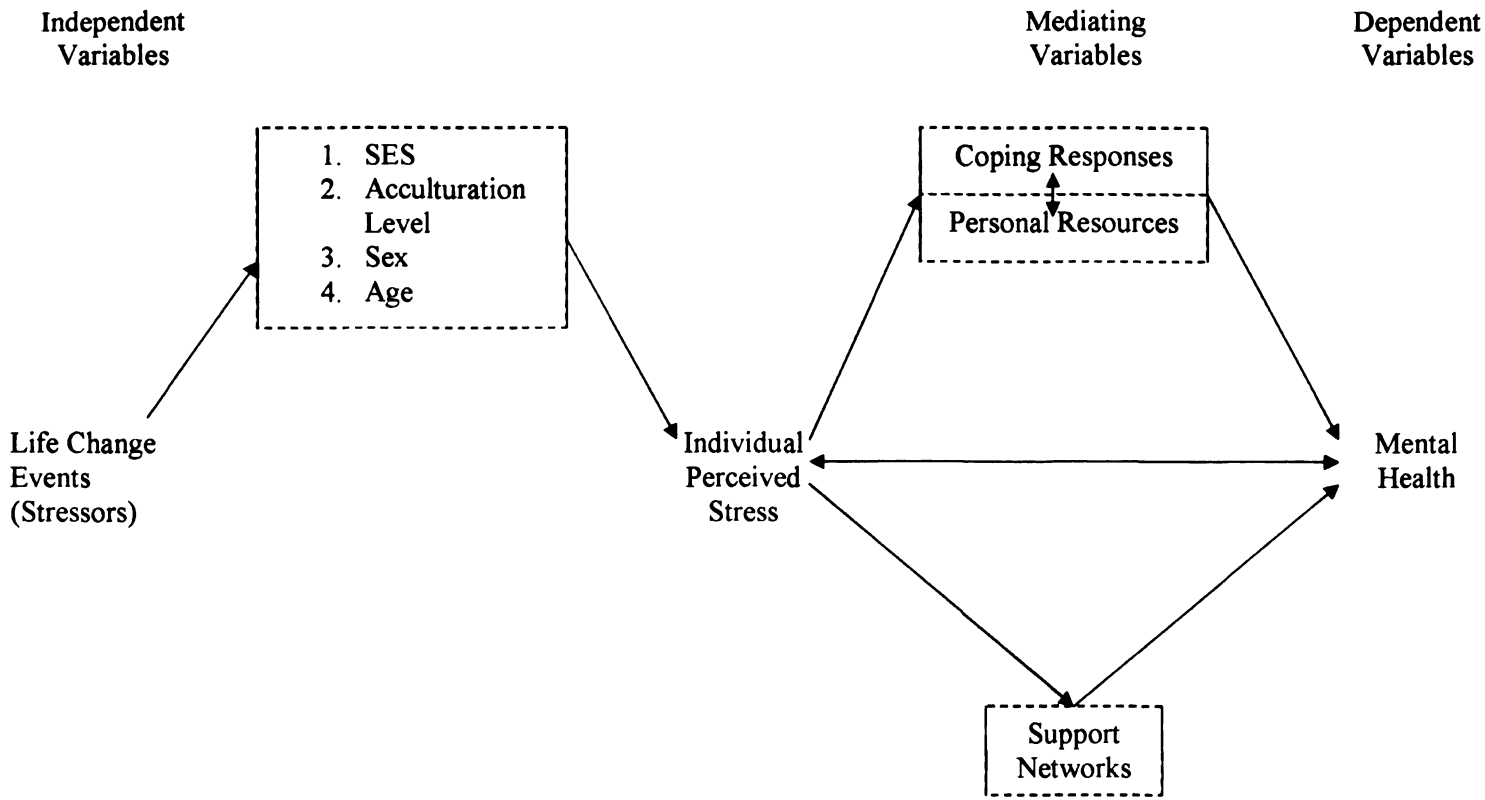

Figure 3. The Stress-Mediation-Outcome Model (Miranda & Castro, 1985)

Like Warheit (1979), Miranda and Castro (1985) consider culture in their model by including structural factors (i.e., acculturation) in their model. Unlike Billings and Moos (1982a), Miranda and Castro (1985) clearly delineate appraisal and coping as separate events because each is believed to serve different functions. For example, the appraisal of an event is believed to involve an evaluation of costs. The appraisal process then determines what type of coping response is necessary.

Unlike Warheit (1979) and Billings and Moos (1982a), Miranda and Castro (1985) do not delineate pathways indicating the direct impact of personal and social resources on either the stressor or the appraisal of the stressor(s). Although, they posit a bi-directional relationship between coping responses and personal resources, they do not consider a direct relationship between support networks and coping responses. Miranda and Castro (1985) like Warheit (1979) acknowledge the role of culture in their model by including structural factors specific to the individual, but they combine demographic (i.e., gender, SES) and cultural variables (i.e., acculturation level) into one component (i.e., structural factors). Thus, they fail to recognize that cultural variables involve a dynamic process, whereas as demographic variables are merely descriptive (Saldana, 1994). Finally, like Warheit (1979) Miranda and Castro (1985) conceptualize culture as existing outside the individual or separate from an individual's characteristics.

Stress-Mediation-Depression Model. Leyva (1990) proposed an adaptation of Billings and Moos' (1982a) model specifically for Mexican/Mexican-American women (Figure 4). Leyva was interested in examining the impact of acute stressors (i.e., death of a loved one, marriage, divorce) and chronic stressors (i.e., cultural conflict, marital conflict, occupational/economic conflict) on mental health. She included acculturation

and socioeconomic status as personal mediators, neighborhood cohesion and perceived social support as environmental mediators, method of coping and focus coping as coping processes, and depressed mood as the outcome variable. Leyva hypothesized a bi-directional relationship between personal and environmental mediators. In addition, she hypothesized that these mediators each directly influenced stressors, appraisal of stressors, coping strategies, and depression. Furthermore, she hypothesized direct relationships from stressors to appraisal of stressors, appraisal of stressors to coping strategies, and coping strategies to depression.

Leyva's (1990) model is important to this study because it considers the impact of personal and social resources on stress (Warheit, 1979; Billings & Moos, 1982a), appraisal of stress, and coping responses (Billings & Moos, 1982a). Furthermore, like Miranda and Castro (1985), Leyva (1990) conceptualizes appraisal of stress and coping strategies as two distinct processes. Like Warheit (1979) and Miranda and Castro (1985), Leyva (1990) includes culture in her model by incorporating cultural conflict as a chronic stressor and acculturation level as a personal resource, both prominent components in the stress-mental health relationship for Mexican American women. However, unlike Warheit (1979) and Miranda and Castro (1985), Leyva (1990) acknowledges that culture cannot be separated from the individual and includes acculturation level as a personal resource.

Leyva (1990) fails to distinguish between social resources and environmental resources when she includes social support and neighborhood cohesion as environmental mediators, Furthermore, by including SES and acculturation level as personal resources,

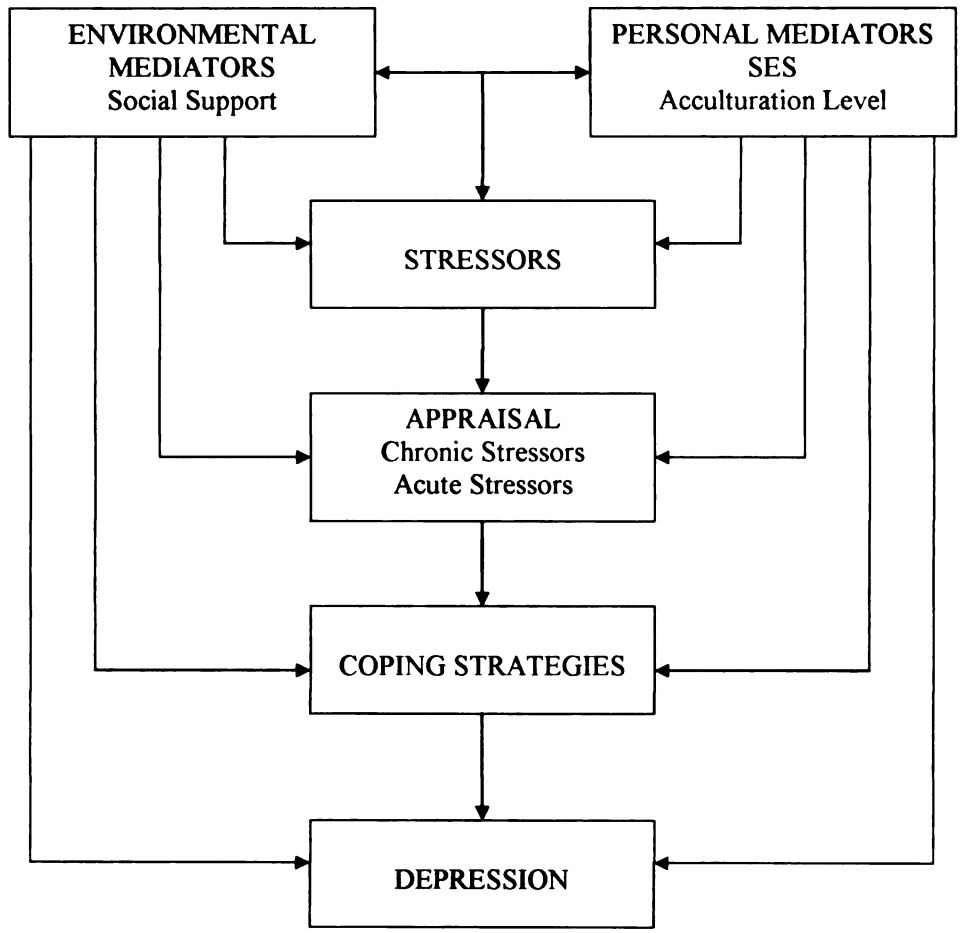

Figure 4. Stress-Mediation-Depression Model (Leyva, 1990)

she also fails to distinguish between demographic and dynamic cultural variables. In addition, similar to Warheit (1979), Leyva (1990) conceptualizes stress as "the appraisal of acute and chronic stressors and the evaluation of whether or not these stressors exceed or tax the individual's ability to cope" (p. 28). Therefore, by including the variable, appraisal of chronic and acute stressors, she introduces a redundant variable in her model. Finally, although this model has been adapted and tested specifically with Mexican American women its generalizability to other Latino groups such as Latina/o students is limited.

Model of Minority Status and Distress. Saldana (1994) presented a model that provides an understanding of the relationship between stressors faced by Latina/o students at predominantly Anglo universities and psychological distress (Figure 5). Saldana (1994) hypothesized that for Latina/o students, the relationship between precursor variables (i.e., social class, gender, ethnicity) and psychological distress was mediated by personal resources (i.e., acculturation level), college-related stress common to all university students (e.g., role strains; stress resulting from tension or conflict between the obligations and expectations associated with one role versus another), and stresses more relevant to Latina/o students (e.g., minority status stresses).

Saldana's (1994) model is important to this study because it is one of a few stress-illness models designed specifically for Latina/o college students. In addition, Saldana (1994) distinguishes between precursor variables and acculturation so that the relationship between ethnicity (i.e., ethnic group membership) and acculturation could be examined. "For Latinos, this implies the relevance of acculturation level as a dynamic

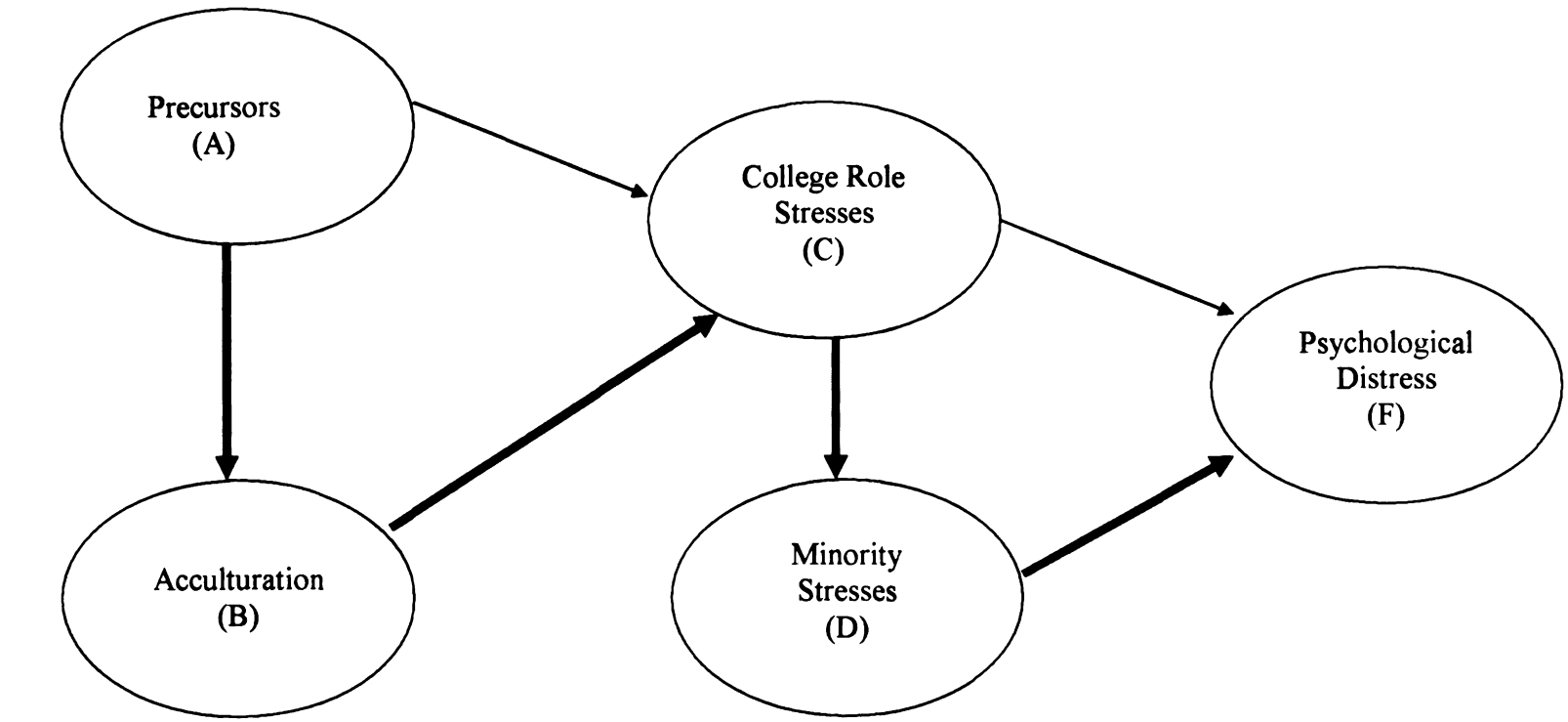

Figure 5. Model of Minority Status and Distress (Saldana, 1994)

variable separate from purely descriptive variables such as ethnicity or social class." (p. 125). Like Warheit (1979), Miranda and Castro (1985), and Leyva (1990), Saldana (1994) considers culture in her model by focusing on acculturation level as a personal resource and minority status stress and acculturative stress as stressors faced by Latina/o students within the university environment. By including acculturation level as a personal resource as does Leyva (1990), she does not separate culture from the individual as do Warheit (1979) and Miranda and Castro (1985). In addition, like Warheit (1979), Billings and Moos (1982a) and Leyva (1990) she considers the impact of personal resources on chronic stressors.

Although Saldana's (1994) model was designed for Latinos at predominantly Anglo universities, it was tested at a university in the West coast. In addition, Saldana (1994) does not directly measure ethnic identity or acculturative stress as does Leyva (1990). Rather, she assesses ethnic identity from a combination of items of an acculturation scale and infers acculturative stress from pathways connecting demographic variables, level of acculturation, college stresses, minority stresses, and psychological distress (Rodriguez et al., 2000). Furthermore, her model does not include variables that the other models reviewed include such as social resources (Warheit, 1979; Billings & Moos, 1982a; Miranda & Castro, 1985; Leyva, 1990) and process variables like appraisal and coping processes (Billings & Moos, 1982a; Miranda & Castro, 1985; Leyva, 1990).

Model of Latino College Student Adjustment. Rodriguez et al. (2000), unlike Saldana (1994), proposed a model that distinguishes the impact of stress as a result of level of acculturation, the process of acculturation, and minority-status stress. The purpose of the model was to explain the impact of generic college stresses, minority-

status stresses and acculturative stresses on psychological well-being and psychological distress, beyond that attributable to gender, socioeconomic status, ethnicity, level of acculturation, and academic self-confidence. See Figure 6. More specifically, Rodriguez et al. (2000) distinguished between the impact of minority-status stress and generic college-student stresses on psychological outcome. They also distinguished among the impact of stresses as a result of acculturation (i.e., stresses that originate in the process of acculturation; perceived cultural incompatibilities, cultural self-consciousness), those attributable to level of acculturation (stresses impacted by and individual's level of acculturation; psychological and somatic stress), and minority-status stress (i.e., experiencing discrimination on the basis of being minority).

The importance of Rodriguez et al.'s (2000) model to this study is that like Warheit (1979), Miranda and Castro (1985), Leyva (1990), and Saldana (1994), the researchers include the concept of culture by considering acculturation level, acculturative stress, and minority status stress. Like Saldana (1994), Rodriguez and colleagues distinguish between demographic or precursor variables and acculturation. However, unlike Saldana (1994), the researches distinguish and separately measure acculturative stress and minority status stress.

Like Saldana (1994), this model does not contain variables included in the above models such as social resources (Warheit, 1979; Billings & Moos, 1982a; Miranda & Castro, 1985; Leyva, 1990) and appraisal and coping processes (Billings & Moos, 1982a; Miranda & Castro, 1985; Leyva, 1990). In addition, unlike Saldana's (1994) model, this model was created to examine the relationship between stress and psychological

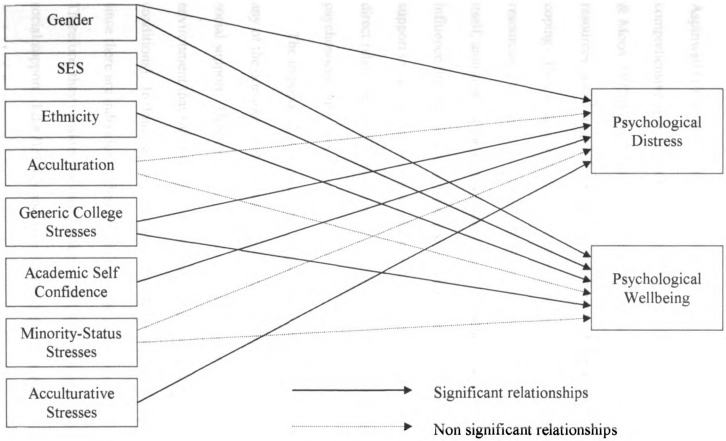

Figure 6. Model of Latino College Student Adjustment (Rodriguez et al., 2000)

adjustment of Latinos attending colleges where the student body is primarily non-White and Latinos constitute the largest group.

Model of Mediating and Moderating Process in Psychosocial Stress. Taylor and Aspinwall (1996) proposed a model described as a set of nested models that draws on comprehensive approaches (e.g., Ensel & Lin, 1991; Lazarus & Folkman, 1984; Billings & Moos, 1982a). See Figure 7. The model depicts personal resources, external resources, social support, appraisals, as mediators of the relationships between stress and coping. They suggest a bi-directional relationship between personal and external resources. Personal and external resources are hypothesized to directly affect the stressor itself, appraisals of the stressor, and coping. Personal resources are believed to directly influence the availability, mobilization, and maintenance of social support. Social support in turn is hypothesized to be directly related to appraisals and coping. Finally, direct relationships from stressors to appraisal, appraisals to coping and coping to psychosocial outcomes as hypothesized.

The importance of Taylor and Aspinwall's (1996) model to this study is that unlike any of the previous models reviewed, they distinguish between external resources and social support. They describe external resources as aspects of the individual's environment that shape the demands and the situation (e.g., time, money, environmental conditions). In doing so, they recognize that social support is in part an internal resource since there are individual differences in how one perceives and extracts social support. Therefore, they consider the direct effect of differences in personal characteristics on social support. Like Billings and Moos (1982a), they consider process variables in their model but distinguish between appraisal and coping as do Miranda and Castro (1985) and

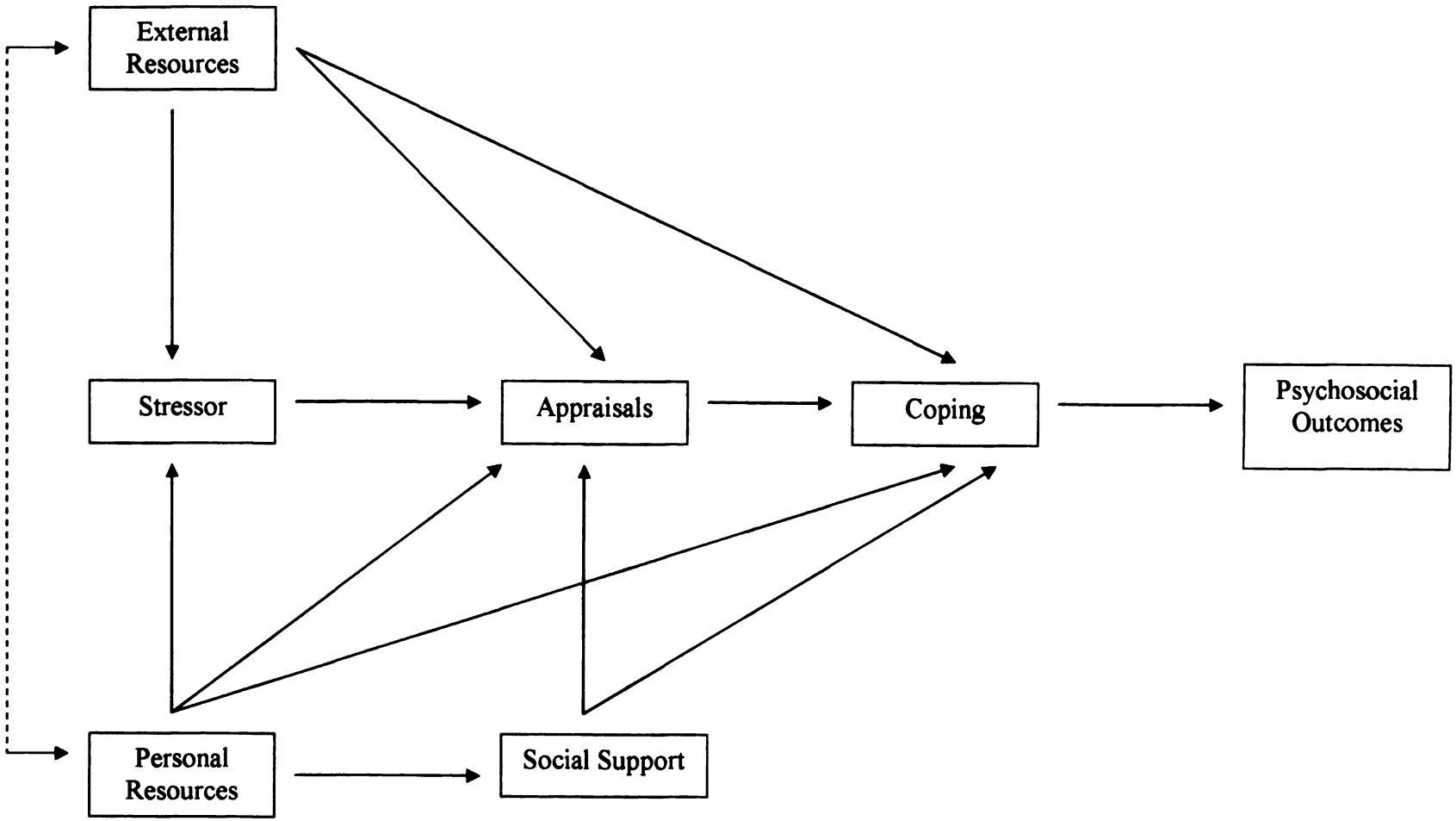

Figure 7. Mediating and Moderating Processes in Psychosocial Stress (Taylor & Aspinwall, 1996)

Leyva (1990). Like Billings and Moos (1982a) and Leyva (1990) they consider the direct effect of social, external, and personal resources on the stressor, appraisal of the stressor, and coping responses. However, unlike Warheit (1979), Miranda and Castro (1985), Leyva (1990), Saldana (1995) and Rodriguez et al (2000), Taylor and Aspinwall (1996) do not consider the concept of culture as part of their model. Furthermore, the model in its present form has not been tested with any population.

The Adapted Model. The model tested in this study was an adaptation of Taylor and Aspinwall's (1996) Model of Mediating and Moderating Processes in Psychosocial Stress (see Figure 8) that incorporated concepts from Warheit's (1979) Life Events, Sources, Adaptations, and Outcomes Model, Billings and Moos' (1982a) Integrative Stress and Coping Model, Miranda and Castro's (1985) Stress-Mediation-Outcome Model, Leyva's (1990) Stress-Mediation-Depression Model, and two models developed specifically for Latina/o college students; Saldana's (1994) Model of Minority Status and Distress, and Rodriguez et al.'s (2000) Model of Latino College Student Adjustment. See Figure 9.

Slavin, Rainer, McCreary, and Gowda (1991) indicated that any theoretical model that adds additional detail to existing models runs the risk of being too complex, too difficult, less feasible, and less understandable. Thus, they suggested creating specific culture-relevant dimensions of each component of an existing model without adding whole new components. In light of this suggestion, the adapted model was an attempt to incorporate aspects of Latino culture into each dimension of Taylor and Aspinwall's (1996) model. However, for practical and conceptual reasons, this study examined only a

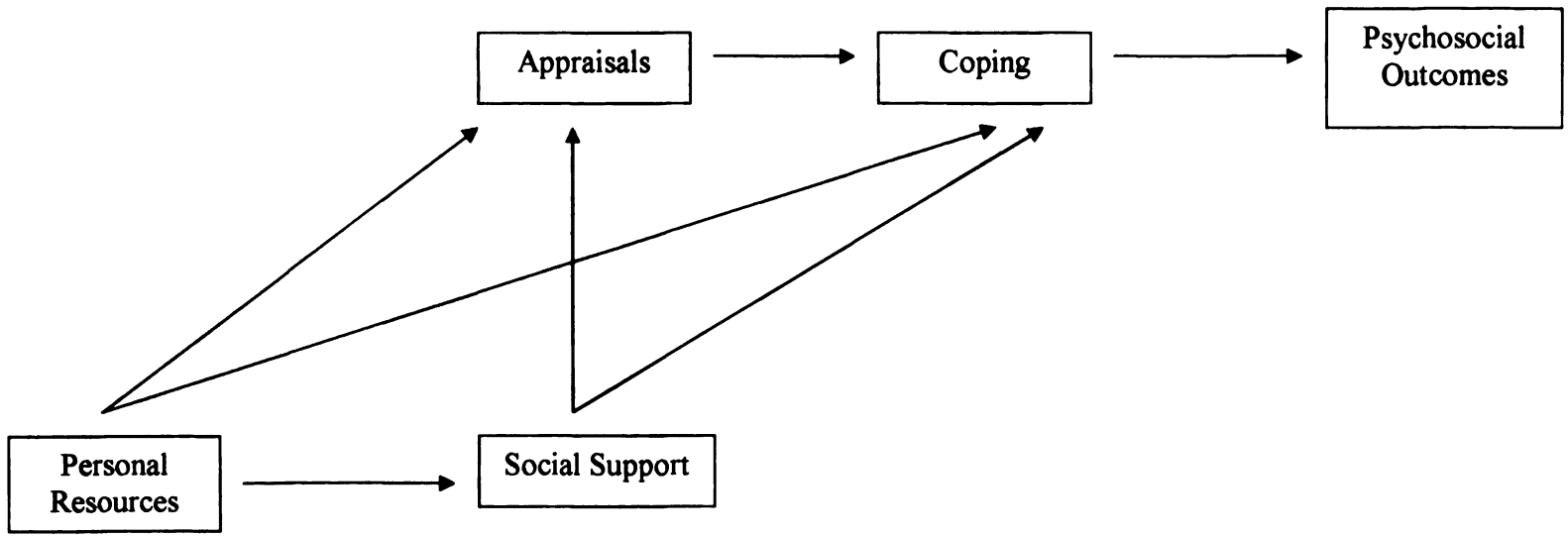

Figure 8. Adaptation of Taylor & Aspinwall's (1996) Model

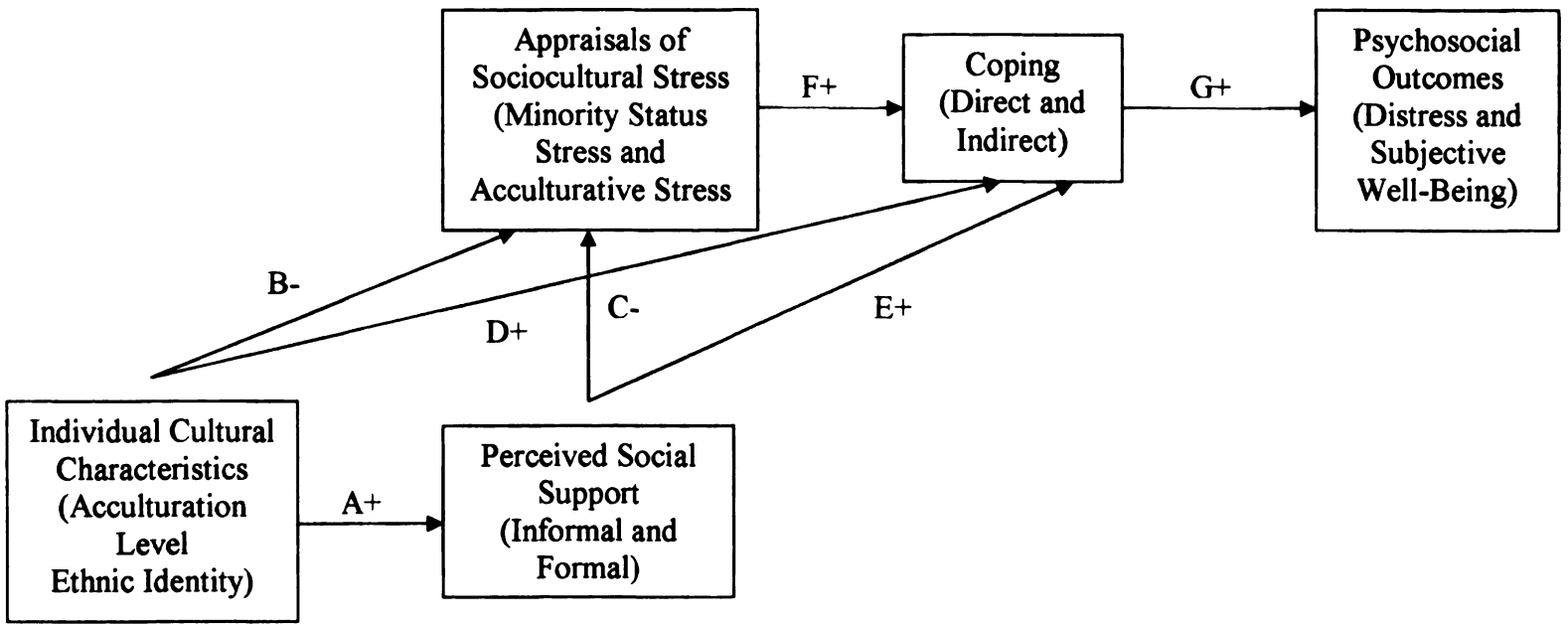

Figure 9. Adapted Model for Latina/o Students

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portion of Taylor and Aspinwall's (1996) model. Slavin et al (1991) also recommended that culturally relevant dimensions focus on measurement issues, particularly questions of content validity. Thus, some of the most salient stressful events for people in a given cultural group should be included in the assessment of stressors. To address this recommendation, this study focused on minority status stress and acculturative stress, two stressors that are prominent in the lives of many members of oppressed groups including Latinos.

As stated above, Taylor and Aspinwall (1996) conceptualized social support as distinct from external resources (i.e., income level, education, opportunities, etc.). More specifically, they viewed social support as an external resource that is in part affected by an individual's personal characteristics. For example, how one perceives and extracts social support may be influenced by factors such as one's self-esteem or locus of control. Because this study is concerned with social support, only the direct effect of personal characteristics on social support was examined. Thus, the bidirectional relationship between other external resources and personal resources was not included. Finally, in this study only the appraisal of the stressors and not the stressors themselves were examined. Similar to Warheit (1979) and Leyva (1990), stress in this model was conceptualized as an altered state that occurs when an individual appraises the stressors as exceeding his or her capabilities to respond. Thus, stress was assumed to be present only if it was appraised as a negative event. For example, although two students may experience the same event (e.g., cultural self-consciousness, discrimination) one may find it very stressful while the other dismisses it. Therefore, in theory, the event is likely to

have a negative impact only on the individual who appraises the event as stressful (Landrine & Klonoff, 1996)

Taylor and Aspinwall's (1996) model was adapted to Latina/o students at a Midwestern university where the student body is predominantly White. Like Billings and Moos' (1982a), Miranda and Castro's (1985), and Leyva's (1990) models, this adaptation of Taylor and Aspinwall's (1996) model is dynamic in nature because it included process variables such as appraisal and coping. Thus, the indirect effects of individual cultural characteristics (e.g., acculturation level, ethnic identity) and perceived social support (e.g., perceived formal and informal support) on mental health (e.g., wellbeing, distress), the direct effect of individual cultural characteristics and perceived social support on the appraisal of cultural stress (e.g., acculturative stress, minority status stress) and coping strategies (e.g., direct and indirect coping), and the direct effect of individual cultural characteristics on perceived social support were examined (Taylor & Aspinwall, 1996). The adapted model also examined two chronic stressors that Saldana (1994) and Rodriguez et al. (2000) reported as salient for many Latina/o college students; acculturative stress and minority status stress. In addition, like Rodriguez et al. (2000) the adapted model distinguished between the impact of stresses that originate in the process of acculturation and stresses that result from a student's minority-status. Like Warheit (1979), Miranda and Castro (1985), Leyva (1990), Saldana (1994), and Rodriguez et al. (2000), this model examined the role of culture in the relationship between stress and mental health by including aspects of Latino ethnicity such as: (a) acculturation level (i.e., cultural values, attitudes, and behaviors); (b) ethnic identity (i.e., the subjective sense of ethnic group membership); (c) acculturative stress (i.e., stresses

that originate in the process of acculturation and include perceived cultural incompatibilities and social self-consciousness); and (d) minority status stress (i.e., the experiences associated with minority status that include powerlessness, discrimination, and prejudice).

Review of the Constructs in the Adapted Model

Appraisal of sociocultural stress. Stress is a concept that has been defined in many ways. Some regard stress as a stimulus or condition that produces a change of some sort. Others define stress as a turbulent reaction or response (Lazarus & Launier, 1978). Finally, there are those who believe that there is limited explanatory power in these two definitions of stress for they do not describe the interaction of the person-environment which can mediate the impact of stressful experiences. Thus, researchers such as Lazarus and Folkman (1984) defined stress as a person-environment encounter that is appraised as relating to one's well-being, and taxes or exceeds the person's resources to cope with the situation. They conceptualized stress as existing not just in the environment but also within the person. Furthermore, the appraisal of stress determined how a person reacts. For example, if environmental demands are appraised as exceeding a person's resources, the result is distress or feeling vulnerable and/or fearing that one's well-being is endangered (Lazarus & Folkman, 1984; Lazarus & Launier, 1978). Folkman and colleagues (Lazarus & Folkman, 1984; Lazarus & Launier, 1978) thus make a distinction between stressful events (stressors) and the appraisal of those stressors.

Stressors have been conceptualized as discreet or acute events resulting in a short-run response that is highly contained and situation bounded or as chronic (i.e., accumulation of negative events) resulting in a response pattern that emerges slowly over time that can develop into a prevailing state (Cohen et al., 1997; Pearlin 1993). Pearlin, Lieberman, Menaghan, and Mullan (1981) and Kessler, Price, and Wortman (1985) defined acute or discrete stressors as acute life events and focused on the role of major life events on mental health outcomes. Major life events (i.e., graduation, marriage, divorce) were considered acute events because they were time-limited and required some type of change on the part of the individual. Conversely, chronic stressors were considered life events which persisted continuously over time (e.g., marital discord, financial difficulties) and were not initiated by a discreet event (Cohen et al., 1982).

Past research indicates that there is empirically weak evidence to support a direct association between discrete stressors and psychological well-being (Pearlin, 1993). Due to this fact, some researchers (e.g., Lazarus and colleagues, Pearlin and colleagues) began to concentrate on chronic stressors. Their work demonstrated that chronic stressors were better predictors of psychological distress (Billings & Moos, 1984; Lazarus, 1984; Pearlin et al., 1981). However, each of the researchers defined chronic stressors differently. For example, Lazarus and colleagues defined chronic stressors as daily hassles or irritating, frustrating, distressing demands (e.g., trouble relaxing, losing things, not enough time for family) that to some degree characterize everyday transactions with the environment (Kanner, Coyne, Schaefer, & Lazarus, 1981). Pearlin and colleagues conceptualized chronic stressors as role strains or chronic strains or stressors that arise

from the social roles (e.g., spouse, parent, and worker) that people adopt (Pearlin & Schooler, 1978).

Early stress-outcome researchers were not only interested in assessing the relationship between discreet stressors and mental health but also in examining the effect of the number of stressors on stress outcomes. However, this produced confounds between the predictor, mediator variables, and criterion (Martin, 1989). Thus, researchers began to examine the relationship between specific chronic stressors, personality variables, social support, coping style, and stress outcomes (Martin, 1989). Although the examination of specific chronic stressors and psychological outcomes proved to be more promising (Vega, Warheit, & Meinhardt, 1985) in recent years, this research has been overshadowed by a growing interest in the effect of cumulative discreet stressors on stress outcomes (Pearlin, 1993).

The various conceptualizations of stress and stressors have affected the measurement of these constructs and ultimately research results. For example, certain stress-outcome researchers (e.g., Saldana, 1994; Rodriguez et al., 2000; Warheit, 1979) have tested models that only examine stressors or the number of stressful events which people experience. However, other researchers (e.g., Billings & Moos, 1982a; Miranda & Castro, 1985; Leyva, 1990) have examined models that include individuals' appraisals (evaluations) of events and situations as stressful. Several researchers have found that even when stressors and the appraisal of these stressors have been included in stress-mental health models, the latter has been found to be a better predictor of distress (i.e., depression, physical symptoms) (Cohen, 1986; Cohen, Kamarck, & Mermelstein, 1983).

In light of past research indicating that the appraisal of stress is a better predictor of stress outcomes, in this study stress was conceptualized as an individual's appraisal of a stressor as stressful. Thus, like Lazarus and Folkman (1984), a distinction between the stressor itself and the appraisal of the stressor is implied. Naturally, the implication is that the frequency of the stressor is assessed, however, only the appraisal of the stressor is included in the model as a predictor. Furthermore, because the study of specific chronic stressors is more promising, this study focused on the appraisal of two chronic stressors that have been found to be stressful for many Latinos living in the United States: minority status stress and acculturative stress. Research has shown that Latina/o students differ in their experience of racist events and the acculturative process (Rodriguez et al., 2000; Saldana, 1994). These appraisal differences are expected to have varying impact on stress outcomes.

Acculturative stress and minority status stress are ongoing, culturally, specific stressors or "chronic role strains" in the life of many Latinos (Morris, 1997) that are above and beyond the generic stressors (e.g., financial difficulties, academic problems) experienced by all college students (Smedley et al., 1993). Past research indicates that the process of acculturation can be a source of stress that can lead to negative psychological outcomes or psychological distress (Cuellar, 2000). More recently, researches have begun to demonstrate that the experience of minority status and events that are directly related to the unique customs, values, and beliefs of ones culture are also sources of stress (Slavin et al., 1991; Utsey, 1998). Despite these findings, few studies (e.g., Rodriguez et al., 2000; Saldana, 1994) have attempted to understand the impact of sociocultural stress (stress resulting from the process of acculturation and from minority

status or cultural group affiliation) on the mental health of Latinos. Clearly, there is a need to research and understand this relationship.

Appraisal of Minority Status Stress. All groups are subject to experience negative stereotypes, prejudice, and discrimination. However, ethnic minority groups or groups with less power and/or status are more likely to experience these negative events (Fiske, 1993) on a consistent basis. Landrine and Klonoff (1996) have conceptualized the experience of negative stereotypes, prejudice, and discrimination as minority status stress. According to the authors, minority status stress is culturally specific stress or the experience of negative events that happen to minorities because they are minorities. Thus, they contend that theoretical models and lines of investigation from generic stress research can be applied to the study of minority status stress.

The impact of minority status stress on individuals has been documented in various ways. For example, negative experiences related to one's minority status have been implicated in the development of several psychiatric disorders (i.e., substance abuse and depression [Burke, 1984; Pillay, 1984; as cited in Utsey, 1998]), low self-esteem (Simpson & Yinger, 1985; Smith, 1985; as cited in Utsey, 1998), and lower levels of life satisfaction (Broman, 1997; as cited in Utsey, 1998). However, despite these findings, the research indicates that the relationship between minority status stress and psychological outcomes is not simple, direct, or absolute, but rather, it varies along a number of dimensions (Chavira & Phinney, 1991). Thus, how minority individuals appraise minority status stress varies and its impact on psychological health is moderated by various factors such as social support and individual characteristics, (Landrine & Klonoff, 1996; Phinney, 1996; Sarason & Sarason, 1984). Nevertheless, even when the

impact of these factors is considered, minority status stress has been found to have a greater negative impact than life events or daily hassles do on the physical and mental health of minorities (Landrine & Klonoff, 1996).

Several researchers have found that students of color enrolled at predominantly White universities often experience minority status stress due to stereotyping, prejudice, and discrimination in either blatant or subtle forms (Balenger, Hoffman, & Sedlacek, 1992; McClelland & Auster, 1990; Pascarella, Edison, Nora, Hagedorn, & Terenzini, 1996; Schwitzer, Griffin, Ancis, & Thomas, 1999; Stone & Archer, 1990). On these university campuses, minority status stress has been reported as the result of academic stereotyping, pressure to conform to stereotypes, and/or prejudice in the form of limited respect and unfair treatment by faculty, teaching assistants, and students (Ancis, Sedlacek, & Mohr, 2000). Characteristics which have been found to increase the likelihood that minority students experience actual or perceived prejudice, stereotyping and/or discrimination include: minority group membership, time spent at the university, residence status (McCormack, 1995), psychological sensitivity, vulnerability to the campus social climate, and interpersonal tensions with White students and faculty (Smedley et al., 1993).

Most of the research that has examined students' experiences of prejudice, stereotyping, and discrimination has investigated differences between White students and racially-ethnically heterogeneous groups of students (Ancis et al., 2000). These studies have consistently shown that minority status stress is greater for African American students than it is for Whites and other minorities (Ancis et al., 2000; Cabrera & Nora; 1994; Hurtado, 1992; McCormack, 1995; Smedley et al., 1993). Few researchers (e.g.,

Morris, 1997; Rodriguez et al., 2000; Saldana, 1994) have examined within group differences in the relationship between minority status stress and psychological outcomes with Latina/o students. However, these studies indicate that this relationship varies as a function of Latina/o students' acculturation level, ethnic identity (Morris, 1997; Rodriguez et al., 2000; Saldana, 1994), comfort with their own cultural values, unique historical background, comfort with individuals who are culturally different, adjustment experiences (Ancis, et al., 2000; Hurtado et al., 1996), and coping styles (Phinney & Chavira, 1995; Schmader, Major, & Gramzow, 2001).

Appraisal of Acculturative Stress. In the past, the concept of acculturative stress has been confounded with minority status stress. However, stresses originating from one's minority status (i.e., experiencing discrimination on the basis of being minority) are different from stresses resulting from the process of acculturation (i.e., stresses associated with negotiating between two or more cultural groups) (Rodriquez et al., 2000). Acculturative stress for many Latinos involves language difficulties, perceived cultural incompatibilities, cultural self-consciousness (Gil, Vega, & Dimas, 1994; Padilla, Cervantes, Maldonado, & Garcia, 1988) and commitment or lack of commitment to culturally prescribed values/behaviors (i.e., familism, cultural pride) (Vega, Zimmerman, Gil, Warheit, & Apospori, 1993). Although acculturative stress and minority status stress are significantly correlated (Sanchez & Fernandez, 1993), one is not inherently part of the other. They are theoretically and empirically distinct with acculturative stress making an independent contribution to psychological distress (Rodriguez et al., 2000). However, like minority status stress, acculturative stress can also result in an increased risk for mental health-related problems (Roysircar-Sodowsky & Maestas, 2000). Furthermore, its

impact is mediated by a number of variables such as social support, cognitive attributes such as appraisals and attitudes toward acculturation, and the degree of tolerance for and acceptance of cultural diversity (Berry & Kim, 1988; Williams & Berry, 1991).

Although acculturative stress is a common experience for first-generation immigrants, U.S.-born, second and later generation ethnic minorities can also experience acculturative stress in response to pressure to maintain ethnic ties or conflicts that arise out of bicultural socialization (Roysircar-Sodowsky & Maestas, 2000). For example, within the university environment, peer group influences, along with the constant bombardment of White societal values and standards, are likely to erode retention of ones culture (Sue & Sue, 1990). The problem becomes one of conflict in knowing how to balance participation in two different cultures with different values, beliefs, and expectations for behaviors (Cervantes, 1988; Fiske, 1988). The outcome of one holding values highly divergent from those of the majority culture may result in feelings of malintergration (Loo & Rolinson, 1986) or bicultural conflict experienced in the form of sociocultural alienation (i.e., sense of personal discontinuity that occurs as a result of disruption in cultural patterns), cultural confusion (i.e., inability to identify and associate with a definite norm within a given context when confronted with multiple norms), and cultural conflict (i.e., perceiving one's values and beliefs as incompatible with a given social interaction) (Kiefer, 1974).

The educational system is a vehicle for the acculturation process and serves as a source of acculturative stress (Cuellar, 2000) for many Latina/o college students. Like most students, Latina/o students face challenging academic and social conditions in higher education (Fuertes & Westbrook, 1996; Mena, Padilla, & Maldonado, 1987).

However, for many Latina/o students, college is a time when they must examine and modify some of their long-held beliefs and attitudes, particularly with regard to interacting with culturally different individuals (Constantine & Baron, 1997). Furthermore, they may encounter numerous and simultaneous changes in their relationships, routines, and/or ideas about self, work, family, health, and/or economics (Schlosser, 1990). These environmental and internal demands can tax or exceed Latina/o students' adaptive resources (Monat & Lazarus, 1991). As a result, they may experience acculturative stress or sociocultural alienation and their sense of well-being may be challenged (Albrecth & Adelman, 1987; Loo & Rolison, 1986). Indeed, researchers have found that for many minority students, experiences of sociocultural alienation or acculturative stress may result in temporary academic difficulties, personality disintegration, emotional uncertainty, anxiety, depression, psychosomatic symptoms, suicidal ideation, and dropping out of school (Allen, Amason, & Holmes, 1998; Fuertes & Westbrook, 1996; Hovey & King, 1996; Kim, 1995; Loo & Rolison, 1986; Rodriguez et al., 2000; Williams & Berry, 1991). However, researchers have also found that the relationship between acculturative stress and mental health for Latina/o undergraduates varies as a function of factors such as perceived social support (Hovey & King, 1996) and individual characteristics such as acculturation level (Saldana, 1994; Sanchez & Fernandez, 1993; Szapocznik, Santisteban, Kurtines, Perez-Vidal, & Hervis, 1984; Zane & Mak, 2000).

Mediating and Moderating Variables. Although early stress researchers obtained reliable correlations between stressors and mental health, these associations were disappointingly modest in magnitude, on average accounting for less than 10% of the

variation in distress (Turner & Roszell, 1994). Thus, researchers (e.g., Warheit, 1979) began to search for factors that might better explain this relationship and account for more of the variation in stress. Mediator and moderator variables or variables that affect the experience of stress and what its effects (Taylor & Aspinwall, 1996) were introduced into stress research to account for more of the variance in outcomes. Researchers found that individuals' mental health outcomes typically depended upon two broad classes of variables: environmental resources and personal characteristics (Dean, 1986).

Some researchers (e.g., Billings & Moos, 1982a, 1982b; Lazarus & Folkman, 1984; Pearlin & Schooler, 1978) emphasized "process" and not just "static," unidirectional models of stress. Thus, they included process (e.g., coping) and static (e.g., individual characteristics, environmental resources) variables in their models. They hypothesized that what an individual does (e.g., coping responses) could be important in mediating or moderating the impact of stress. They also believed that a process oriented or transactional approach to the study of stress and outcomes yielded more information regarding useful intervention strategies as it is easier for people to change what they do then to change their personality traits or social environments (Martin, 1989).

The inclusion of process and static variables in the same model has been essential in understanding the relationship between stress and mental health. For example, researchers have found that personal and environmental resources not only have a direct influence on one's mental or physical health (Billings & Moos, 1982a, 1982b), but they also directly influence the stressor itself (Ensel & Lin, 1991), the appraisal of stress, and one's reliance on specific coping strategies (Cohen & Edwards, 1989; Taylor & Aspinwall, 1996). Although no single study can incorporate every potential interaction

between process and static variables or foresee every confounding factor (Vega et al., 1985), the more we know about how these variables and how their interactions affect the stress-mental illness process, the more accurately we will be able to target interventions and the more effectively we will be able to design intervention strategies (Hough, 1985). This study incorporated various static and process variables in order to understand the relationship between sociocultural stress and mental health for Latina/os undergraduate students at a predominantly White university. Below is a review of the various mediating and/or moderating variables that were included in the adapted model.

Individual cultural characteristics. In the past, the literature has been inherently concerned with the effects of individual personality characteristics on the relationship between stress and mental health. Researchers interested in understanding the impact of individual characteristics on mental health have investigated various personality characteristics including: negative affectivity (Watson & Clark, 1984), pessimistic explanatory style (Peterson, Seligman, & Vaillant, 1988), hardiness, (Kobasa, 1979), optimism (Scheier & Carver, 1985), psychological control (Bandura, 1977), self-esteem (Whisman & Kwon, 1993), self-confidence (Holahan & Moos, 1987, 1991), and ego strength (Worden & Sobel, 1978). These personality characteristics have been found not just to contribute to psychological well-being but also to the occurrence of a stressor (Farne, Sebellico, Gnugnoli, & Corallo, 1992; Rhodewalt & Zone, 1989) provision of social support (Cohen, Sherrod, & Clark, 1986; Dunkel-Schetter, Folkman, & Lazarus, 1987) appraisal of stressors (Campbell, Chew, & Scratchley, 1991; Jerusalem, 1993; Rhodewalt & Zone, 1989) and coping responses (Aspinwall & Taylor, 1992; Holahan & Moos, 1987; Jerusalem, 1993)

Despite the fact that individual cultural characteristics (i.e., worldview, values, beliefs) provide an understanding of the person (Cuellar, 2000) and like personality characteristics cause considerable within group differences on mental health outcomes (Sodowsky et al., 1991), few have paid explicit attention to their role in the relationship between stress and mental health status (Miranda & Castro, 1985; Slavin et al.,1991). Thus, most researchers have failed to acknowledge that one's personality and culture are inextricably intertwined (Lonner & Adamopoulos, 1997). That is, they do not recognize that culture does not simply exist at the macro level, but also exists at the micro level or as a conceptual structure or system of ideals within an individual (Geertz, 1984). Thus, the concern in this study was with two individual cultural characteristics that have been found to influence the relationships between stress and mental health; acculturation and ethnic identity (Rodriguez et al., 2000; Saldana, 1994; Sarason, Sarason, & Gurung, 2001; Taylor & Aspinwall, 1996).

Acculturation level. Acculturation is generally viewed as an ecological, transactional process of cognitive, emotional, behavioral, perceptual, and ideological change that occurs as a consequence of a continuous, first-hand contact of two or more distinct cultural groups (Cuellar, 2000; Roysircar-Sodowsky & Maestas, 2000). Acculturation is a multifaceted construct that is composed of multiple factors in which people demonstrate varying degrees of strengths/weaknesses, capacities, and abilities. Acculturation is not only an exogenous process it also involves cultural changes at the individual psychological level (Cuellar, Siles, & Bracamontes, 2002; Marin, 1992).

Acculturation has been considered by theorists as either a unidimensional or multidimensional process (Szapocznik et al., 1984). Unidimensional theorists assume

that change in cultural identity takes place along a single continuum over the course of time. More specifically, acculturating individuals are seen as being in a process of relinquishing the attitudes, values, and behaviors of their culture of origin while simultaneously adopting those of the new society (Marin, 1992; Ryder, Alden, & Paulhus, 2000). Multidimensional theorists assume that acculturation involves assimilation to the majority culture and retention of the minority culture (Marin, 1992; Rogler, Cortes & Malgady, 1991). Theorists who adopt a multidimensional perspective argue that acculturation can be more completely understood when heritage and mainstream cultural identities are seen as being relatively independent of one another. Thus, individuals may adopt many of the values and behaviors of the mainstream culture without giving up their self-identity developed in their culture of origin (Ryder et al., 2000). Furthermore, acculturation may involve a degree of assimilation to a total cultural context comprised of various cultural groups (Szapocznik et al., 1984). Although each of these models has its own assumptions concerning what happens to a person as he or she undergoes the process of acculturation, the models are not mutually exclusive. Each one of them may represent an adequate explanation for a person's experience as he or she acquires competency in a new culture. However, they emphasize different aspects of the process of acculturation (LaFromboise, Coleman, & Gerton, 1993).

Unfortunately, acculturation's multidimensional nature has precluded ever having one measure capable of adequately and sufficiently capturing it (Negy & Woods, 1992). Currently, most measures assess one or two facets of acculturation at a time in either Mexican Americans or Cubans (Marin, 1992). Furthermore, there are acculturation measures that assess superficial changes brought about by contact with different culture

or experience with cultural objects, measures that assess more significant changes in an individual's behavior (e.g., language use), and very few measures that attempt to assess changes in values and norms (Marin, 1992). Acculturation has also been difficult to assess because it occurs at different rates and along different developmental pathways for each individual, due to such factors as age at time of immigration, generational status, geographical location, personal motivations for assimilating into the dominant culture, schooling experience, and degree of contact with members of the majority group, other groups, and/or more acculturated members of their same ethnic group (Baron, 1991; Cuellar, Arnold, & Maldonado, 1995; Cuellar, Nyberg, Maldonado & Roberts,1997; Perez & Padilla, 2000; Szapocznik & Kurtines, 1980). Nevertheless, researchers have consistently found that ethnic behaviors and practices of immigrants tend to decline over time (Perez & Padilla, 2000; Sodowsky et al., 1991).

Because it has been empirically demonstrated that Latina/os born in the United States are more likely to have higher levels of depression symptoms than immigrants (Burnam, Hough, Karno, Escobar, & Telles, 1987; Mosicki, Locke, Rae, & Boyd, 1989), it has been hypothesized that second generation highly acculturated Latinos are presumed to be at risk for mental health problems due to their exposure to more culturally based conflicts and internalization of negative stereotypes (Rogler et al., 1991). However, researchers have also found that acculturation relates linearly both negatively and positively (Cuellar & Roberts, 1997) and also curvilinearly to psychological distress (Cuellar, Roberts, Romero, & Leka, 1999; Rogler, et al., 1991). Thus both high and low scores on acculturation may lead to poor or good mental health. The empirical evidence for any of these relationships is contradictory and inconclusive. Different studies support

different relationships, and some studies even support more than one (Gil et al., 1994; Rogler et al., 1991). These contradictory results point out the need to examine empirically the relationships between cultural change and psychological adjustment by examining for acculturation level and acculturative stress simultaneously (Gil et al., 1994). Indeed, acculturation level has been found to mediate the relationship between stress and mental health, influence the appraisal of potential stressors, and affect the selection of coping strategies (Morris, 1997; Phinney, 1995; Phinney, Chavira, & Williamson, 1992; Phinney, Williamson, & Chavira, 1990; Roysircar-Sodowsky & Maestas, 2000; Ruiz, 1990).

Ethnic identity. Closely related to the construct of acculturation is the notion of ethnic identity. Like acculturation, ethnic identity is a complex multidimensional construct that varies across members of a group (Phinney, 1996). However, acculturation and ethnic identity are relatively independent constructs that are both experienced by ethnic minorities. The construct of ethnic identity differs from the construct of acculturation in that acculturation is a response to the dominant group or is broadly concerned with the degree to which dominant cultural norms are accepted, rejected, or transformed by ethnic minorities, while ethnic identity is a response to one's ethnic group and refers to attitudes, beliefs, and feelings toward one's own ethnic group (Sodowsky & Lai, 1997). Thus, an ethnic minority individual feels both a push to acculturate to the dominant society and a pull toward one's ethnic group (Roysircar-Sodowsky & Maestas, 2000). Although shifts in acculturation level bring about changes in ethnic identity development and vice versa (Baron, 1991), the two constructs are not inversely related (Torres, 1999; Velez, 1995). In fact, the research suggests that high ethnic identity

accompanied by a positive mainstream orientation is related to positive psychological outcomes, whereas high ethnic identity without at least some adaptation to the dominant culture may be problematic (Phinney, 1995).

Ethnic identity is a concept that is only applicable in the context of multicultural societies and is essentially irrelevant in monocultural societies (Roysircar-Sodowsky & Maestas, 2000). In the United States, a multicultural society, ethnic identity is central to the self-concept of individuals from ethnic groups (Phinney, 1991). It is a part of the self-concept that is derived from an individual's knowledge of belonging to a social group (or groups), together with the perceptions, knowledge, values, behaviors, and emotional significance attached to that group membership (Phinney, 1991; Tajfel &Turner, 1979). Ethnic identity comprises a number of different components, including self-labeling, a sense of belonging, positive evaluation, preference for the group, ethnic interest and knowledge, and involvement in activities associated with the group (Phinney, 1991, 1995).

The research of ethnic identity development suggests that ethnic identity can be conceptualized as a process; individuals progress from an early stage in which one's ethnicity is taken for granted, on the basis of attitudes and opinions of other or of society; through a period of exploration into the meaning and implications of one's group membership; to an achieved ethnic identity that reflects a secure, confident sense of oneself as member of a group (Phinney, 1996). Individuals progress along these stages for various reasons. For example, Latina/o students who study the history of their ethnic group can lead to change in ethnic identity level (Constantine & Baron, 1997). Evidence of movement from one ethnic identity stage to another may manifest itself in the ethnic

labels used by students. Thus, in the beginning stages of ethnic identity, students are likely to use terms such as Hispanic or Mexican-American which are considered neutral, widely accepted labels. As students advance to higher stages, labels indicating clear affiliation with group heritage such as Chicano(a), Latino(a), or Hispano(a) may be used (Baron, 1991; Baron & Constantine, 1997). Different stages of ethnic identity have been found to have different mental health correlates (Phinney & Kohatsu, 1997). Although the psychological implications of ethnic identity vary with changes in one's identification (Phinney, 1996), the research suggests that a bicultural identity (an adaptive dual identification with Latino and American cultures) is associated with the best mental health outcomes (Bautista de Domanico, Crawford, & Wolfe, 1994; Szapocznik et al., 1984).

Perceived Social support. Social support is a multidimensional construct (Sarason, Pierce, & Sarason, 1990; Sarason, Sarason, & Pierce, 1990) with dimensions that include social networks, received social support, and perceived social support. Social support networks refer to the system of significant others with whom people have social ties and that may be called upon for help in times of need (Barrera, 1986; Sarason, Sarason et al., 1990; Hobfoll & Vaux, 1993; Vaux, 1988). Social support has also been conceptualized as received support or supportive behaviors that members of the social network perform when they render assistance to an individual in need (Barrera, 1986; Sarason, Pierce et al., 1990). Perceived social support is defined as the degree to which individuals perceive and interpret supportive interactions or psychological and non-psychological resources as being available to them from their social network (Cohen & McKay, 1985: Cohen et al., 1986; Sarason, Pierce, & Sarason, 1994; Vaux, 1988).

Perceived support is assumed to be independent of the support network (i.e., an individual may report a large network but might not perceive supportive behaviors from those individuals), antecedent to both the stressor and psychological distress, and relatively stable over time (Eckenrode & Wethington, 1990; Lepore, Evans, & Schneider, 1991; Sarason et al., 1994).

Although there are different dimensions to the construct of social support, they all tend to identify themes around feeling cared for and supported (Hobfoll & Vaux, 1993). Furthermore, all the dimensions of social support are viewed as stable resources from which an individual draws on in order to handle a stressor (Lazarus & Folkman, 1984; Lepore et al., 1991; Thoits, 1986; Thoits, 1995). Indeed, the literature indicates that when individuals are faced with a stressor(s), social support has been found to buffer the potentially negative impact of stress (Caplan, 1974; Cassel, 1974; as cited in Solberg & Villarreal, 1997). Researchers have found that social support is also associated with good mental health outcomes, by buffering the negative influences of stressful events and depression (Briones et al., 1990) and facilitating psychological and physical well-being (Rodriguez, 1998). However, not all researchers have found a positive effect of social support on mental and/or physical health, in fact, some researchers have found it to be related to poor mental health outcomes; suggesting that the relationship between social support and mental health outcomes is considerably complex (Vega, et al., 1985).

The conflicting results have been found to depend in part on the dimension of social support that is assessed. For example, when social networks are used as predictors of mental health outcome, an effect on well-being but not distress is generally the result. Similarly, support received has been found to be a poor predictor of well-being or

distress. However, perceived social support has been found to most consistently contribute to well-being and distress (Dunkel-Schetter & Bennett, 1990; Procidano, 1992, Procidano & Smith, 1997; Sarason, et al., 1994). In particular, perceived emotional support (i.e., beliefs that love and caring, sympathy and understanding and/or esteem and value are available from significant others) has been found to be associated with better physical and mental health when individuals are faced with negative life events and chronic strains (Thoits, 1995). In general, the literature indicates that individuals who perceive that social support is available will have less difficulty responding to stressful episodes than individuals who do not perceive social support is available (Solberg & Villarreal, 1997).

As the literature in the area of perceived social support has evolved, researchers have begun to suspect that it is important to take the source of support into consideration, and that whether assistance is perceived as supportive depends upon the environment in which social support takes place and who is providing the help (Valle & Bensussen, 1985; Wortman & Dunkel-Schetter, 1987). However, the research focusing on this issue has been concerned solely with differentiating among support or help from family members and close friends (Barling, MacEwen, & Pratt, 1988). This trend deemphasizes and devalues the benefits associated with more impersonal relationships that arise in formal settings (Adelman, Parks, & Albrecth, 1987). In response to these suggestions, this study intends to extend previous research by using a more comprehensive definition of social support. Thus, in the present study, Demaray and Malecki's (2002) definition of perceived social support will be used. The researchers defined perceived social support as an individual's perceptions of general or specific support (i.e., emotional,

informational), available or acted on, from people in their social network (e.g., family, peers, university personnel).

Perceived informal social support. Support provided by primary and extended family has been defined as informal social support (Valle & Bensussen, 1985). Because Latinos adhere to familismo, a strong sense of family centrality and importance, great emphasis is placed on reciprocity and on strong emotional ties between family members (Cervantes & Castro, 1985). Family is thus seen as a primary source of social support manifested by (a) providing material and emotional support, (b) relying primarily on family members for help and support, (c) using family members as referents for attitudes and behavior, and (d) placing the needs of the family or family members before individual needs (Knight, Bernal, Garza, & Cota, 1993; Sabogal, Marin, Otero-Sabogal, VanOss-Marin, & Perez-Stable, 1987).

Several researchers have examined Latino's perception of family support in times of stress (Keefe, 1980; Keefe, Padilla, & Carlos, 1979; Moore, 1970; Murillo, 1976). However, few studies have examined Latina/o students' perception of family support and its relationship to psychological adjustment. These studies indicate that among Latina/o students perceived availability of family support is associated with positive outcomes (i.e., psychological adjustment, academic adjustment) for students while perceived unavailability of family support is associated with negative outcomes (Arellano & Padilla, 1996; Hurtado et al., 1996; Lamborn et al., 1997; Solberg &Villarreal, 1997; Terenzini et al., 1994). Latina/o students have been found to rely more on family support than their Anglo counterparts (Saldana, 1988). Furthermore, perceived family support and family role models have been found to be crucial in promoting college adjustment

and persistence among Latinos (Cardoza, 1991; Cooper, Jackson, Azmitia, & Lopez, 1998; Lango, 1995).

In light of this research, Miranda (1980) has cautioned against assuming that the family is the only support system available for Latinos. Friends and community support systems play significant roles in providing support. Similarly, Valle and Vega (1980) advocate the necessity of looking beyond the extended family as the only source of support available.

Perceived formal social support. Support from professors and other university personnel can be sources of formal support for Latina/o university students (Cooper et al., 1998; Valle & Bensussen, 1985). These individuals can not only serve as primary sources of social support, they provide help and access to information not otherwise attained (Arellano & Padilla, 1996; Quevedo-Garcia, 1987). However, due to the paucity of Latina/o faculty (Aguirre & Martinez, 1993) and administrators (de los Santos & Rigual, 1994) at U.S. universities, there are few individuals that Latina/o students can look to as role models for support (Fiske, 1988; Verdugo, 1995). Faculty to student ratio for Latinos has been reported as 1 to 76 compared with a ratio of 1 to 24 for White students (Hispanic Association of Colleges and Universities, 1995).

Researchers that have examined perceived formal social support among Latinos have focused on primary and secondary school students (Alva, 1991; Demaray & Malecki, 2002; Furlong, Chung, Bates, & Morrison, 1995). These studies indicated that perceived formal support (e.g., peers, teachers) was positively associated with adjustment and school-related outcomes. Studies that have focused on Latina/o college students have found that support from university personnel, (e.g., specific professors, counselors,

financial aid staff, student support services) are salient sources of support for Latina/o students (Gandara & Osugi, 1994; Hurtado et al., 1996; Loo & Rolison, 1986; Lopez, 1995; Young, 1992) that are positively associated to psychological adjustment or well being and adaptation to the college environment (Arellano & Padilla, 1996; Solberg, 1990). Furthermore, perceptions of the university environment and participation in university networks have been found to be significant predictors of adjustment and college persistence (Crouse, 1985; Gloria & Robinson-Kurpius, 1996; Oliver, Rodriguez, & Mickelson, 1985).

Coping. The vast literature on stress and coping indicates that people have many distinct responses to stress (Holahan, Moos, & Schaefer, 1996). Although there have been several efforts to distinguish conceptually and empirically among the many different responses people may have to stress (Zeidner & Endler, 1996), to date, consensus about these response categories has not been achieved (Miller & Kaiser, 2001). Nevertheless, Compas and colleagues (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000) suggest that the most fundamental distinction between different responses to stress is between voluntary coping responses and involuntary responses. According to the authors this distinction emphasizes the fact that not everything an individual does in response to stress constitutes coping. Thus, they reserve the term coping for conscious voluntary efforts in response to stressful events or circumstances.

Previous researchers defined coping as a multidimensional process that involves conscious cognitive, behavioral, and emotional efforts to deal with internal and/or external demands of stressful events (Carver & Scheier, 1994; Carver, Scheier, &

Weintraub, 1989; Cohen et al., 1982; Folkman, 1984; Folkman & Lazarus, 1980, 1986; Lazarus & Folkman, 1984; Parker, Endler, & Bagby, 1993; Pearlin & Schooler, 1978). Conscious behavioral, cognitive, and emotional coping efforts have several different functions, including (1) the modification of the stressor itself, (2) alteration of one's own evaluation or appraisal of the stressor in order to reduce perceptions of threat, and (3) management of one's somatic or emotional reactions to the stressor (Lazarus & Folkman, 1984; Martin, 1989; Moos & Schaefer, 1993; Pearlin et al., 1981; Pearlin & Schooler, 1978). Coping is perceived as being process-oriented because it is said to involve the interaction of person and environmental factors and a reciprocal transaction between conscious emotional reactions, cognitive appraisals, and behavioral responses (Folkman, Schaefer, & Lazarus, 1979).

Most research on stress and coping draws upon Lazarus and Folkman's (1984) model of stress, appraisal, and coping. From this perspective, people appraise both the stressful demand and their available coping resources. On the basis of this appraisal, people tend to employ two broad but distinct coping strategies to reduce the psychological distress associated with the stressful demand: problem-focused coping and emotion-focused coping. Problem-focused coping is aimed at problem solving or doing something to alter the source of the stress (Carver & Scheier, 1994; Lazarus & Folkman, 1984; Moos & Schaefer, 1993). It may consist of altering situational circumstances behaviorally (behavioral problem-focused coping) through direct actions on the environment or on the self to remove or alter circumstances appraised as threatening. Situations may also be altered cognitively (cognitive problem-focused coping) through reinterpretation of existing circumstances or distracting oneself from stressful cues

(Thoits, 1986). An alternative to problem-focused coping is emotion-focused coping which is aimed at reducing or managing the emotional distress that is associated with (or cued by) the situation (Carver & Scheier, 1994; Lazarus & Folkman, 1984; Moos & Schaefer, 1993). Emotion-focused coping may consist of actions (behavioral emotion-focused coping) or thoughts (cognitive emotion-focused coping) to control the undesirable feelings that result from stressful circumstances (Thoits, 1986).

A second major conceptual approach in the coping literature has been to divide coping into approach versus avoidant activities (e.g., Maddi, 1980; Roth & Cohen, 1986; Suls & Fletcher, 1985; as cited in Heppner, Cook, Wright, & Johnson, 1995). Approach activities are oriented toward confronting the problem while avoidant activities are oriented toward reducing emotional tension (Holahan & Moos, 1987). Some have suggested that approach and avoidance activities are simply metaphors for problem-focused coping and emotion-focused coping (Roth & Cohen, 1986). However, there is evidence indicating that affective or emotional responses may play important roles in problem-focused coping (Heppner & Krauskopf, 1987). Similarly, emotion-focused strategies although often oriented toward avoiding dealing with the source of stress can also be oriented toward approaching stressful circumstances (Holahan & Moos, 1987).

In addition to researchers' disagreements regarding the optimal conceptualization of coping (Rohde, Lewinsohn, Tilson, & Seeley, 1990), the study of cultural differences has also led to some questions about the widely used coping nomenclature (e.g., problem-focused vs. emotion-focused, approach vs. avoidant) as evident of a Western European bias for problem-focused and approach coping over emotion-focused and avoidant coping (Cross, 1995; Lee & Liu, 2001; Weisz, Rothbaum, & Blackburn, 1984). Thus, Cross

(1995) advocates for the adoption of a more neutral terminology to study coping strategies among ethnic minority groups, since individuals are thought to have the adaptive capacity not only to utilize several strategies when faced with stressors, but also are capable of varying their coping responses with each situation (Billings, Cronkite, & Moos 1983; Cohen et al., 1982; Folkman & Lazarus, 1980). Cross suggests that the terms direct coping and indirect coping are preferable to either problem or emotion-focused coping or approach vs. avoidant coping.

Direct and Indirect Coping. Cross (1995) defines direct coping as the use of strategies designed to actively mange, resolve, or influence stressful demands through one's own efforts (e.g., problem solving, support seeking). Direct coping is believed to predominate when situational demands seem controllable or people feel that something constructive can be done (Billings et al, 1983; Carver et al., 1989; Folkman, 1984; Folkman & Lazarus, 1980; Thoits, 1995). Indirect coping is defined as the use of strategies designed to adjust to stressful demands by changing the self rather than the situation (e.g., accepting the situation, self-distraction) (Cross, 1995). Indirect coping is more likely when demands seem uncontrollable and people feel that the stressor is something that must be endured (Billings et al, 1983; Carver et al., 1989; Folkman, 1984; Folkman & Lazarus, 1980; Thoits, 1995).

A considerable amount of evidence suggests that the manner in which one copes with stressful events plays an important role in the amount of stress experienced, and ultimately one's psychological health. Most of this research indicates that direct coping is believed to be more beneficial for well-being than indirect coping (Thoits, 1995). Furthermore, there exists some empirical and clinical evidence that suggests that Latinos

employ more indirect coping strategies to manage stressful demands (Diaz-Guerrero, 1967; Weisz et al., 1984). However, there is no clear consensus in the literature regarding which coping strategies are most efficacious in reducing psychological distress (Aldwin & Revenson, 1987; Mattlin et al., 1990; Rodin & Salovey, 1989). Furthermore, some researchers have found that Latinos do use direct coping strategies such as relying on family, seeking support from friends, and spirituality (Abraido-Lanza, Guier, & Revenson, 1996) to cope with stressors such as acculturational stress (Mena, et al., 1987).

Mental Health. Psychologists have traditionally defined mental health as the absence of unhappiness or ill-being (e.g., depression, anxiety). This definition fails to acknowledge that mental health is more than just the absence of illness, disease, or dysfunction-it is the presence of psychological well-being, effective functioning in daily life, and the ability to deal with new situations (Berry, Kim, Minde, & Mok, 1987). Despite the fact that current research has demonstrated that psychological distress and well-being are correlated and are part of a two-dimensional latent construct which reflects a higher-order concept of mental health (Masse et al., 1998), most researchers continue to place little emphasis on the positive aspects of mental health status and continue to focus on the absence or presence of dysfunctional, psychopathological outcomes (Martin, 1989; Najera, 1990; Pavot & Diener, 1993).

Distress. Studies concerned with Latinos' mental health have most frequently used depressive symptomatology as an indicator of psychological distress (e.g., Cho et al.,1993; Golding & Burnam, 1990; Golding & Lipton, 1990; Roberts, 1992; Roberts, Roberts, & Chen, 1995; Roberts & Sobhan, 1992; Vega, Kolody, Valle, & Hough, 1986; Vernon, Roberts, & Lee, 1982). Most of these studies have addressed the extent to which

ethnicity increases or reduces the risk for depression. Thus, depressive symptoms for Latinos have been compared to those of Whites. The general findings indicate that both adolescents and adults tend to report a higher number of depressive symptoms than non Latina/o Whites (Golding & Burnam, 1990; Moscicki et al., 1989; Roberts, 1994; Roberts et al., 1995; Roberts & Sobhan, 1992; Vernon & Roberts, 1982). However, some studies show little or no differences in rates of depression between Latinos and Whites (Anthony & Petronis, 1991; Weissman, Bruce, Leaf, et al., 1991).

Although the mental health of college students from various ethnic and racial groups has been identified as a priority concern by the US Public Health Service (Healthy People, 2000), relatively few researchers have examined minority college students' mental health. Several researchers have found that exposure to a climate of prejudice on campus, racist experiences in college, and the lack of congruence between minority students (e.g., Latina/os) and the university are the most important factors impinging on the affective development or mental health of minority students attending predominantly White institutions (Fleming, 1984; Loo & Rolison, 1986; Suen, 1983; Tracey & Sedlacek, 1984, 1985, 1987; as cited in Cabrera & Nora, 1994). Studies that have examined levels or reports of depressive symptoms among Latino students (e.g., Constantine, Chen, Ceesay, 1997; Cuellar & Roberts, 1997; Rosenthal & Schreiner, 2000) indicate that (1) reported symptoms and prevalence rates of clinical depression are similar to reported symptoms and prevalence rates (2%-4%) found in community studies (Cuellar & Roberts, 1997; Rosenthal & Schreiner, 2000), (2) levels of depressive symptoms are higher for female and younger students than for males and older students (Rosenthal & Schreiner, 2000), (3) acculturation level is less influential than SES on

depression scores, (4) low SES increases the risk for depression (Cuellar & Roberts, 1997), and (5) depression is among one of the primary presenting concerns of Latina/os at a university counseling center (Constantine et al., 1997).

Subjective Well-Being. The last decade has seen a dramatic increase in research on the construct of subjective well-being (Diener, 1984; Diener & Larsen, 1993; Lyubomirsky & Lepper, 1999). Research has identified two broad aspects of subjective well-being: an affective component, often referred to as happiness (Diener & Emmons, 1984; Lyubomirsky & Lepper, 1999), and a cognitive component, which is referred to as life satisfaction (Andrews & Withey, 1976). Although the two components of subjective well-being are somewhat distinctive and can provide complementary information when assessed separately, they are not completely independent and have been found to be at least moderately correlated (Pavot & Diener, 1993).

Subjective Happiness. Subjective happiness is the affective component of subjective well-being (Andrews & Withey, 1976). According to Lyubomirsky and Lepper (1999), subjective happiness is a global, subjective assessment of whether one is a happy or an unhappy person. The authors assert that this judgment is distinct from a simple sum of an individual's recent levels of affect and/or satisfaction with life. For instance, one may appraise oneself as a very happy person, despite having only a somewhat happy life or vise versa (Lyubomirsky & Lepper, 1999). Previous research has found that several objective variables (e.g., demographic variables, life events) are correlated with happiness. However, some researchers (Diener, 1984; Lyubomirsky & Ross, 1997) have noted these correlations are lower than they ought to be. Researchers (e.g., Brickman, Coates, & Janoff-Bulman, 1978) have found that even extreme events (e.g., winning a

million dollars or becoming paralyzed) exert surprisingly weak effects on subjective well-being. Lyubomirsky and Lepper (1999) interpret these finding as evidence of that there is wide variation in individuals' sources of their personal happiness. However, there is considerable agreement as to what happiness means and whether it has been achieved.

Life satisfaction. Life satisfaction, the cognitive component of subjective well being (Andrews & Withey, 1976) has received little attention in the literature (Diener, Emmons, Larsen, &, Griffin, 1985). It is a subjective term that involves an evaluation or assessment of the quality of ones life on the basis of a personal, unique set of criteria (Shin & Johnson, 1978). More specifically, a comparison of one's perceived life circumstances with a self-imposed standard or set of standards is presumably made, and to the degree that conditions match these standards, an individual reports high life satisfaction (Pavot & Diener, 1993). Life satisfaction is believed to be affected by time such that it is most influenced by events in the immediate past (Benjamin, 1994) but can also reflect a long-term perspective. In addition, it may be indirectly influenced by affect although it is not a direct measure of emotion (Diener, 1984). Nevertheless, a relationship between life satisfaction and emotional-well being exists since people may deny psychological distress but still be dissatisfied with life (Pavot & Diener, 1993).

For the most part, psychological distress, rather than life satisfaction has been used as an outcome measure to assess college students' mental health. The few studies that examined life satisfaction with Latina/o students found that their low levels of life satisfaction and happiness were significantly and consistently related to negative

perceptions about contemporary race relations (Brown, Wallace, & Williams, 2001) and acculturative stress (Rodriguez et al., 2000). .

Integration of the Literature

Review of the various constructs in the adapted stress-mental health model has revealed that Latina/o students appraise minority status and acculturative stress differently. Thus, not all Latina/o students are expected to experience psychological distress as a result of minority status stress and/or acculturative stress. The sparse literature with Latina/o college students has revealed that individual cultural characteristics, perceptions of social support, and coping strategies mediate stress outcomes. In particular, it has been shown that acculturation level and ethnic identity are related to stress and mental health. The literature has also shown that perceived formal and informal social support can buffer the effects of stress outcomes. In addition, direct and/or indirect coping strategies have been found to have varying effects on mental health outcomes. Finally, although most of the researchers that have assessed mental health status have concentrated on psychological distress, there is evidence that stress also has an effect on Latina/o students' wellbeing.

Review of the Literature Supporting the Hypothesized Paths in the Proposed Model

Although the literature has consistently indicated that individual cultural characteristics, perceived formal and informal support, and direct and indirect coping strategies affect mental health, the research has not clearly delineated the relationship amongst these constructs for Latina/o students attending a predominantly White university. Thus, the following section will review the literature that provides support for the hypothesized relationships among individual cultural characteristics (i.e., ethnic

identity, acculturation level), perceived social support, appraisal of sociocultural stress (i.e., acculturative stress, minority status stress), coping methods (i.e., direct and indirect) and mental health (i.e., distress, wellbeing).

Path A: The influence of cultural characteristics on perceived social support. Although social support has been frequently conceptualized as an environmental variable, an important consideration in understanding and appreciating its impact on mental health is the notion of individual differences, among support recipients. Researchers have suggested that some individual characteristics (i.e., agreeableness, extraversion, self-esteem, locus of control, generalized negative outlook, help-seeking tendencies, attitudes toward seeking and accepting help) may contribute to one's perception of support (Lakey & Dickinson, 1994; Procidano, 1992; Procidano & Smith, 1997) and/or ability to extract needed social support (Cohen et al., 1986; Dunkel-Schetter & Bennett, 1990; Dunkel-Schetter et al., 1987; Taylor & Aspinwall, 1996).

Although, few studies have examined the relationship between individual cultural characteristics and perceived social support, some findings suggest that there is a relationship between social support and acculturation among Latinos (Griffith & Villavicencio, 1985; Sabogal et al., 1987). Griffith and Villavicencio (1985) found that compared to less acculturated Latinos, more acculturated Latinos reported more reciprocal helping, contact with network members, larger support networks that extend beyond primary family to include friends and neighbors, and fewer symptoms of psychological distress. However, Sabogal et al. (1987) found that although referring or consulting with family was affected by the acculturation level of three Latino groups (e.g., Mexican, Cuban, and Central American), perceived family support remained high

despite acculturation level. In a longitudinal study of Latina/o students at predominantly White universities, Ethier and Deaux (1994) found that compared to students with low ethnic identity levels, students with high ethnic identity levels reported higher levels of social support from other Latina/o students, personnel (e.g., ethnic counselors) and the various supportive services made available by the universities for minority students.

Path B: The influence of cultural characteristics on appraisal of sociocultural stress. The literature indicates that several individual characteristics (e.g., self-esteem, locus of control) differentially predict appraisal of stress (Farne et al., 1992), discrimination or minority status stress (Rodriguez et al., 2000; Shorey, Cowan, & Sullivan, 2002) and acculturative stress (Najera, 1990; Rodriguez et al., 2000). The appraisal of stress occurs in the context of an individual's cultural values, beliefs, and experiences. Thus, individual cultural characteristics are believed to provide a context from which one appraises the threat of a given stressor (Cohen, 1992). Without this appreciation of the role of culture in the appraisal of stressors, we run the risk of misunderstanding the relationship between stress and mental health outcomes for Latinos (Miranda & Castro, 1985).

The research has produced various conclusions regarding the relationship between individual cultural characteristics and appraisal of sociocultural stress. For example, some have reported that Latina/o college students at both lower levels of acculturation and ethnic identity are capable of experiencing sociocultural stress (Sanchez & Fernandez, 1993; Szapocznik et al., 1984; Roysircar-Sodowsky & Maestas, 2000). Others have found reports of greater stress among the more acculturated rather than among the less acculturated (Gilbert & Cervantes, 1986; Holck, Warren, Smith, &

Rochat, 1984; as cited by Neff & Hoppe, 1993). Some have even found that acculturation level was not associated with acculturative stress levels (Vazquez & Garcia-Vazquez, 1995). However, most have shown that Latina/o students with collectivistic orientations, lower levels of acculturation and/or lower stages of ethnic identity tend to report more sociocultural stress than students at higher levels of acculturation and/or higher stages of ethnic identity stage (Ethier & Deaux, 1994; Fernandez-Barillas & Morrison, 1984; Montgomery, 1992; Negy & Woods, 1993; Quintana et al., 1991; Rodriguez, et al., 2000; Saldana, 1988; Saldana, 1990; Saldana, 1994; Sanchez & Fernandez, 1993; Shorey et al., 2002). Thus, the majority of these studies seem to support the acculturative stress model of Buriel, Calzada, and Vasquez (1982, as cited in Neff & Hoppe, 1993) which proposes that less-acculturated individuals, because of their values and behaviors are not adequately equipped to deal appropriately with the dominant culture. The result is sociocultural stress and hence, distress.

Path C: The influence of perceived social support on appraisal of sociocultural stress. It has been suggested by some that the perception of social support is one element in an individual's appraisal of stress. That is, whether or not an individual perceives support from his or her social network depends upon the appraisal of threat that the person must respond to (Lazarus, 1966, 1981; Lazarus, Averill, & Opton, 1974). However, social support is also believed to influence a person's appraisal of the stressfulness of a situation (Cervantes & Castro, 1985; Cohen & McKay, 1985) and mediate the impact of stress on mental health (Lepore et al., 1991; Thoits, 1986). Researchers have found that Latina/o students who perceive support to be available are found to report less stress than students who perceive little social support to be available

(Solberg & Villarreal, 1997). More specifically, studies have shown that perceived family support is significantly related to Latina/o student's experience of acculturative stress (Hovey & King, 1996). In addition, Latina/o students' perceptions of formal support are related to feelings of sociocultural alienation (the outcome of holding values highly divergent from the majority) and reports of racial/ethnic tensions (Crouse, 1985; Hurtado, 1994; Loo & Rolison, 1986; Oliver et al., 1985; Ponterotto, 1990). Formal support factors that have been found to counter Latina/o students' appraisal of sociocultural stressors include: (1) the presence of a residential, sociopolitical, academic community on campus that provides cultural support; (2) student support services that effectively serve minority students; (3) increased numbers of ethnic minority faculty to whom minority students can comfortable relate and (4) supportive and accessible faculty who impart a sense of academic and personal worth to students (Crouse, 1985; Loo & Rolison, 1986; Oliver et al., 1985).

Path D: The influence of individual cultural characteristics on coping. Coping strategies have long been believed to be influenced by individual characteristics, cultural values, and norms (Lazarus & Folkman, 1984). Furthermore, individual characteristics are believed to exert their stress buffering effect on mental health via an effect on coping (Cohen & Edwards, 1989). Thus, coping strategies may be influenced by individual characteristics (e.g., self-esteem, optimism, internal locus of control) and reinforcement for particular ways of coping (Holahan & Moos, 1987; Aspinwall & Taylor, 1992; Taylor & Aspinwall, 1996). According to Slavin et al. (1991), individual cultural characteristics can be expected to have wide-ranging effects on coping strategies because ideas about the proper way to handle threatening or challenging events vary greatly from culture to

culture. For example cultures differ greatly in their beliefs about fate and the need to accept what fate decrees. Similarly, individuals within an ethnic group differ in feelings about their ethnic group. These feelings and beliefs strongly affect ethnic minority individuals' appraisals of the usefulness of direct vs. indirect coping efforts. Furthermore, cultures both prescribe some coping behaviors and proscribe others (Slavin et al., 1991). Although few researchers have examined the impact of individual cultural characteristics on coping strategies, some have found that coping strategies vary as a function of acculturation status (Cervantes & Castro, 1985; Mena et al., 1987; Montgomery, 1992; Vazquez & Garcia-Vazquez, 1995). More specifically, bicultural and highly acculturated Mexican American university students have been found to use mostly direct coping approaches (Mena eat al., 1987; Vazquez & Garcia-Vazquez, 1995). However, Mexican-American students have also been found to utilize indirect methods of coping (Montgomery, 1992). Gomez and Fassinger (1994) found that bicultural Latina college students had a wider repertoire of coping behaviors than did Latinas primarily acculturated to either Latino or Anglo-American culture.

Path E: The influence of perceived social support on coping. Lazarus and colleagues (1966; Lazarus et al., 1974) suggested that the perception of social support is one element in an individual's subsequent coping with stress. Furthermore, coping strategies are dependent upon a person's perception that support is available. Thus, perceived social support is seen as a dynamic resource that precedes, influences, and assists coping efforts (Cohen, 1992; Holahan et al., 1997; Lazarus & Folkman, 1984; Lepore et al., 1991; Thoits, 1986; 1995). Evidence for the link between perceived social support and both direct and indirect coping strategies comes from a series of studies by

Holahan and Moos and their colleagues (Billings & Moos, 1981; Cronkite & Moos, 1984; Holahan & Moos, 1986, 1987). In general, these studies indicate that individuals who perceive little social support are likely to engage in indirect coping strategies. In contrast, individuals who perceive that social support is available are more likely to engage in direct coping strategies.

Just as perceived available social support has been linked to either direct or indirect coping strategies, in the context of stressful life situations, likewise, it has been hypothesized that the perceived availability of social support engenders either direct or indirect coping strategies for disadvantaged group members experiencing sociocultural stress (i.e., discrimination, Ruggiero, Taylor, & Lydon, 1997). However, few empirical studies (e.g., Ruggiero & Talyor, 1995, 1997, as cited in Ruggiero et al., 1997) have examined the relationship of perceived availability of social support to coping strategies with members of disadvantaged groups. These studies have found that women and ethnic minorities that reported experiencing discrimination tended to utilize indirect coping strategies when they perceived little to no available social support. However, those that reported experiencing discrimination but perceived that support was available were more likely to utilize direct coping strategies (Ruggiero et al., 1997). Although no studies have looked at the relationship between perceived social support and coping strategies for Latina/o students experiencing sociocultural stress, empirical findings indicate that when Latina/o students perceive support from family and school personnel (e.g., academic outreach programs, staff, and peers) it is helpful in their coping efforts and adjustment to college (Cooper, Jackson, & Azmitia, 1993; Cooper et al., 1998; Gloria & Rodriguez, 2000; Lopez, 1995; Rodriguez, 1994). A lack of such support has been identified as a

primary reason for Latina/o students' inability to cope with stress (Fiske, 1988), poor adjustment, and high attrition rates (Alva, 1991; Lango, 1995).

Path F: The influence of appraisal of sociocultural stress on coping. According to Lazarus and Folkman (1984), stress occurs only when demands placed upon an individual exceed or tax the individual's coping resources. Thus, stress always involves cognitive appraisals about the seriousness of the demand and the resources the individual has available to cope with that demand (Lazarus & Folkman, 1984). Thus, sociocultural stressors may not be perceived as stressful if an individual has the adaptive resources to cope with them and if they do not exceed the person's ability to cope (Miller & Kaiser, 2001). Likewise, individuals' appraisal of sociocultural stressors may affect coping strategies and ability to adapt (Berry & Kim, 1988; Williams & Berry, 1991). The appraisal process cues particular coping strategies that are then linked with an eventual adjustment outcome (Moos 1979, 1984, 1986). For example, indirect coping may occur when a stressor is perceived as stressful and individual and environmental resources are perceived as insufficient. Although few studies have found that members of diverse disadvantaged groups (e.g., women, ethnic minorities) utilize indirect coping strategies to cope with sociocultural stress (i.e., discrimination; Ruggiero & Taylor, 1995, 1997; as cited in Ruggiero et al., 1997), in general the perception of stressors in minority populations has been found to strongly predict both direct and indirect coping responses, supporting the supposition that both strategies are not mutually exclusive (Stein & Nyamathi, 1999). Thus, there is likely to be wide variability in how and with what effect people cope with sociocultural stressors. Moreover, sociocultural stress will be

detrimental to an individual's mental health only if he or she is unable to cope with it successfully (Miller & Kaiser, 2001).

Although coping reactions to sociocultural stress have been studied primarily at a sociological level (Ogbu, 1985), there is evidence in the psychological literature indicating that the appraisal of sociocultural stress appears to influence an individual's ability to cope with it. For example, one's appraisal of discrimination and injustice is believed to be an important determinant of coping strategies that are adopted by members of stigmatized groups (Schmader et al., 2001). Some individuals may indirectly cope with discrimination by internalizing negative stereotypes (Phenice & Griffore, 1994), attributing negative experiences to discrimination (Crocker & Major, 1989), and discounting feedback (Schmader et al., 2001). However, minorities can also engage in direct coping strategies toward perceptions of prejudice and discrimination by discussing it with the perpetrator, disproving stereotypes, using self affirmation (Phinney & Chavira, 1995), taking action to reduce the stress, and/or talking with others about the problem (Mena et al., 1987). Some have found that Latina/o college students who report experiencing acculturative stress use direct coping strategies to decrease the impact on college adjustment (Garcia-Vazquez, Vazquez, & Huang, 1998). In addition, some research indicates that Latinos and Caucasians do not differ in the types of coping styles used when faced with stressors. In fact both tend to use more direct than indirect coping (Mendoza, 1981). The variation in results is consistent with the growing body of research that suggests that the utilization of a given coping strategy, whether direct or indirect, is mediated by complex individual, environmental, and situational factors (Roth & Cohen, 1986; Folkman, 1984).

Path G: The influence of coping on mental health. To date, the relationship of coping styles to mental health is not clear. In the past, researchers have reported that is not stress per se but rather how people cope with it that affects one's mental health. Although the directions of this relationship have been inconsistent, these studies have shown a strong association between coping and mental health (Billings & Moos, 1981; Folkman & Lazarus, 1986; Pearlin & Schooler, 1978). In some studies, indirect coping or high emotion-focused coping was found to be a psychological risk factor for adverse responses to stressful life circumstances (Cronkite & Moos, 1984; Holahan & Moos, 1986, 1987; Terry, 1994) and associated with a high number of psychological symptoms (Endler, Parker, and Butcher, 1993; Billing & Moos, 1981; Menaghan, 1982). Direct coping or high problem-focused coping on the other hand have been found to be associated with a low number of psychological symptoms or good adjustment to stressful events (Cronkite & Moos, 1984; Deisinger, Cassisi, & Whitaker, 1996; Holahan & Moos, 1986, 1987; Mena et al., 1987; Mitchell, Cronkite, & Moos, 1983; Stein & Nyamathi, 1999; Terry, 1994). However, some studies have revealed that people that used indirect coping strategies reported less psychological symptoms than people that used direct coping strategies (Asendorpf & Scherer, 1983; Linden, Paulhus, & Dobson, 1986; Mattlin et al., 1990). Finally, culturally specific coping patterns (e.g., culturally sanctioned beliefs, behaviors, practices, fatalism, religiosity) have been found to either buffer or place people at risk for specific negative outcomes (i.e., depression) (Neff & Hoppe, 1993; Vega et al., 1985). According to Miller and Kaiser (2001) the use of emotional regulation and expression and problem solving efforts are required before individuals dealing with sociocultural stress hit upon coping strategies that will promote

successful adaptation or good mental health outcomes. Thus, failure to express or regulate emotions resulting from sociocultural stress or utilize multiple problem-solving efforts could result in detrimental mental health outcomes.

Current research examining the relationship between various coping styles and the mental health of college students has revealed a similar trend in results. For example, the use of direct coping styles has been found to be associated with higher levels of personal and emotional adjustment and fewer symptoms of depression and suicide risk (D'Zurilla, Chan, Nottingham, & Faccini, 1998; Essau &Trommsdorff, 1996; Leong, Bonz, & Zachar, 1997; Nezu, Nezu, Sarayderian, Kalmar, & Ronan, 1986). Deficits and lack of confidence in use of direct coping strategies or problem solving has been found to be related to higher levels of depression and hopelessness (Clum, & Febbraro, 1994; Nezu & Ronan, 1988; Priester & Clum, 1993). Similarly, the use indirect coping has been found to be associated with increased depressive symptoms (D' Zurilla et al., 1998; Essau & Trommsdorff, 1996) and lower levels of personal and emotional adjustment (Leong et al., 1997). These inconsistent findings may be due in part to different measures of psychological symptoms and coping. Furthermore, according to Carver and Scheier (1994), the literature on coping seems as a whole to be more informative about coping that interferes with good outcomes than about coping that facilitates good outcomes. According to the authors, this may be the result of posing research questions that focus on negative mental health outcomes (i.e., anxiety, depression) more frequently than posing questions that focus on positive outcomes (e.g., adaptation, psychosocial competence).

Chapter 2

RATIONALE

Although a vast number of investigators from a wide range of disciplines have studied the relationship between stress and mental health, few have examined Latina/o undergraduate students' psychological functioning when minority-status and/or acculturative stress are experienced. Nevertheless, several investigators have found that within the university environment, ethnic minority students, including Latinos, report experiencing cultural incompatibilities, discrimination, and prejudice (McCormack, 1995; Smedley et al., 1993). Furthermore, these stressful experiences have been found to ultimately impact their psychological well-being resulting in psychological distress and unsuccessful adaptation to the university (Morris, 1997; Najera, 1990; Quintana et al., 1991; Saldana, 1994; Shibazaki, 1999).

The literature on stress and potential mediators has revealed that numerous individual, environmental, and process variables (e.g., self-esteem, goal directedness, locus of control, optimism, ethnic identity, acculturation, family support, social support, community involvement, and appraisal and coping processes; Aspinwall & Taylor, 1992; Constantine & Baron, 1997; Riggio et al., 1993; Shibazaki, 1999) mediate or moderate the relationship between stress and mental health in Latina/o undergraduate students. Furthermore, investigators have found that these variables have a complex relationship to each other and to mental health. However, the majority of these studies have isolated two or three of these variables at a time. Thus, they have limited explanatory power, indicating that the relationship between stress and mental health outcomes is relatively weak (Cohen et al., 1997).

Several researchers have developed complex models that emphasize the analysis of multiple levels in order to account for greater proportions of variance in outcomes and outline the dynamics of the stress-mental health relationship (Billings & Moos, 1982; Holahan et al., 1997; Miranda & Castro, 1985; Talyor & Aspinwall, 1996; Warheit, 1979). These researchers postulate that numerous internal and external factors, psychological processes, and the many interactions between them mediate the relationship between stressors and mental health. However, researchers have not attempted to test these or adaptations of these models with Latina/o undergraduate students. Instead, a few researchers have merely attempted to identify the relationship between one or two variables and mental health outcomes for Latina/o students. Furthermore, most of this research has taken place at universities where there is a significant concentration of Latinos (Aspinwall & Taylor, 1992; Morris, 1997; Padilla et al., 1986; Quinones, 1996; Rodriguez, et al., 2000; Saldana, 1994; Shibazaki, 1999; Solberg & Villarreal, 1997; Suarez et al., 1997). Clearly, there is a need to test dynamic stress-mental health models in order to understand the relationship between minority status, acculturative stress, and mental health in Latina/o students at predominately White, Midwestern, universities.

To address this need, this study examined an adaptation of Taylor and Aspinwall's (1996) model (see Figure 10) with Latina/o students at Michigan State University where Latina/o enrollment is low. The adapted model draws from comprehensive approaches concerning the relations of personal, social, and external, resources to mental health (i.e., Billings & Moos, 1982a; Miranda & Castro, 1985; Leyva, 1990; Rodriguez et al., 2000; Saldana, 1994; Warheit, 1979). Thus, to address

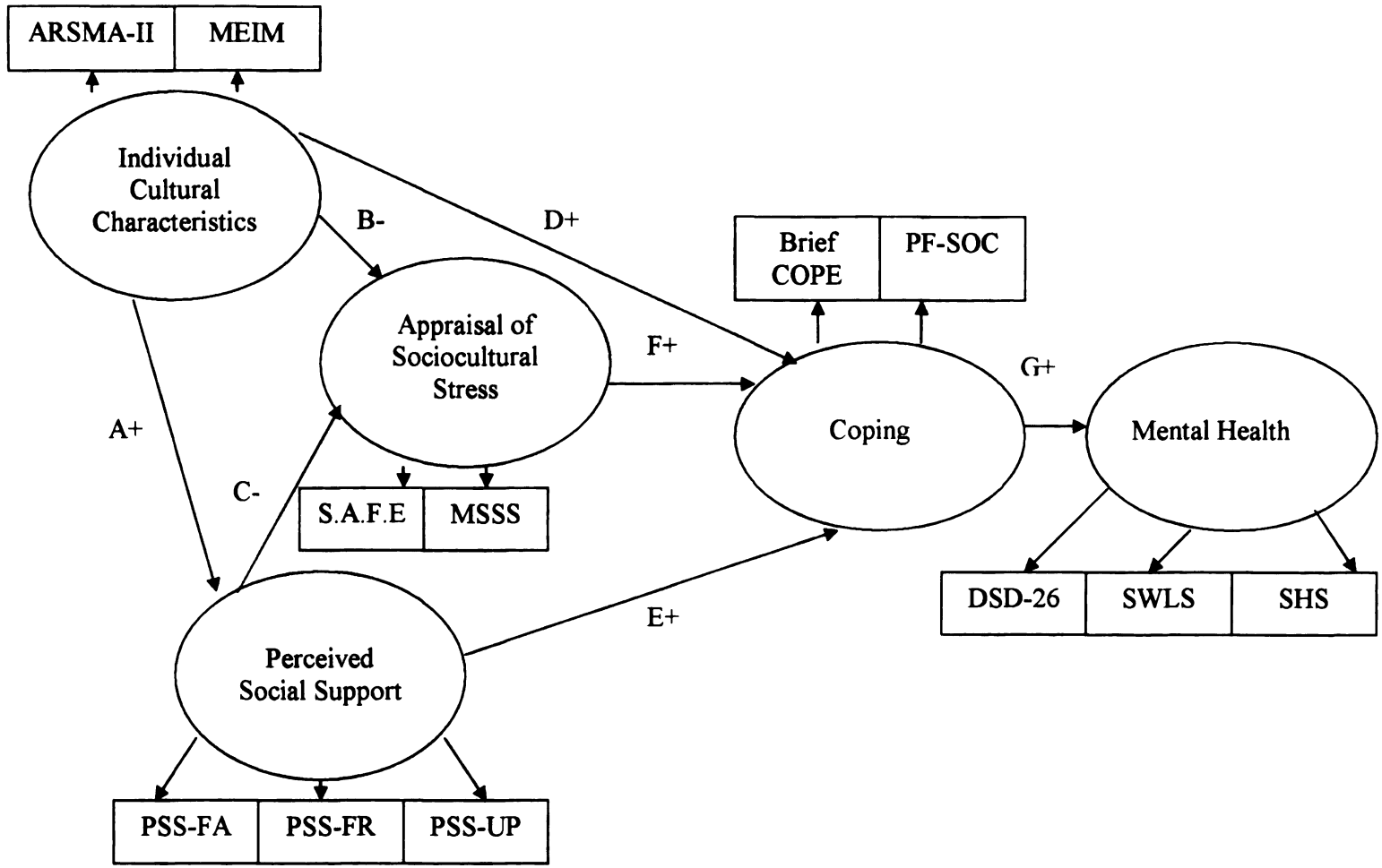

Figure 10. Measurement and Structural Model

Warheit's (1979), Miranda and Castro's (1985), Leyva's (1990), Saldana's (1994), and Rodriguez et al.'s (2000) concern with the role of culture in the relationship between stress and mental health, Taylor and Aspinwall's (1996) model was adapted to Latina/o students at Michigan State University. In addition, several aspects of Latino ethnicity were included in the model. Therefore, this study also focused on the appraisal of two culturally, specific, chronic stressors (e.g., minority status stress, acculturative stress) that have been found to impact the mental health of Latina/o students above and beyond the generic stressors experienced by all college students (Smedley et al., 1993). However, in light of past research indicating that the appraisal of stress is a better predictor of stress outcomes than assessing the frequency of each stressor, in this study only the appraisal of the stressor was included in the adapted model. Furthermore, in recognizing that personality and culture are inextricably intertwined (Lonner & Adamopoulos, 1997), the adapted model included acculturation and ethnic identity, two individual cultural characteristics that can provide an understanding of the person, cause considerable within group differences on mental health outcomes (Sodowsky et al., 1991), and influence the relationships between stress and mental health (Rodriguez et al., 2000; Saldana, 1994; Sarason et al, 2001; Taylor & Aspinwall, 1996). The adapted model also included the concept of perceived social support in light of the research indicating that it is more consistent in accounting for psychological well-being and distress than are received social support or social networks (Procidano, 1992, Procidano & Smith, 1997; Sarason et al., 1994). In addition, because research suggests that individual characteristics can lead to individual differences in the ability to extract social support (Cohen et al., 1986;

Dunkel-Schetter et al., 1987; Taylor & Aspinwall, 1996), social support was conceptualized as a resource that is affected by acculturation level and ethnic identity. Furthermore, in an attempt to outline the dynamics of the relationship between the appraisal of minority status and acculturative stress, the adapted model not only included stable factors but also appraisal and coping processes (Billings & Moos, 1982a; Lazarus & Folkman, 1984; Miranda & Castro, 1985).

The adapted model also draws on the work of several researchers (e.g., Edwards, Baglioni, & Cooper, 1990; Ensel & Lin, 1991; Fry, 1989; Lazarus & Folkman, 1984; Moos, 1988; Norris & Murrell, 1984; Pearlin, 1989; Tuner et al., 1991; as cited in Taylor & Aspinwall, 1996), who have suggested that coping strategies, are essential to understanding the link between individual characteristics, perceived social support, appraisal of stress, and mental health. Although no research exists to support the adapted model or the mediational processes by which individual cultural characteristics (i.e., acculturation level, ethnic identity) facilitate coping with sociocultural stress (i.e., minority status and acculturative stress) and consequently mental health, several studies have found that social support, appraisal of stressors, and coping strategies mediate the effects of individual cultural characteristics on mental health (Morris, 1997; Phinney, 1995; Phinney et al., 1992; Phinney et al., 1990; Roysircar-Sodowsky & Maestas, 2000; Ruiz, 1990). More specifically, Latinos high on acculturation and ethnic identity have been found to report higher levels of social support (Ethier & Deaux, 1994; Griffith & Villavicencio, 1985), lower levels of sociocultural stress (Ethier & Deaux, 1994; Fernandez-Barillas & Morrison, 1984; Montgomery, 1992; Negy & Woods, 1993; Quintana et al., 1991; Rodriguez, et al., 2000; Saldana, 1988; Saldana, 1990; Saldana,

1994; Sanchez & Fernandez, 1993; Shorey et al., 2002), and utilize more effective coping strategies when dealing with stress (Cervantes & Castro, 1985; Gomez & Fassinger, 1994; Mena et al., 1987; Montgomery, 1992; Vazquez & Garcia-Vazquez, 1995).

The literature strongly suggests that social support is a mediator of the beneficial effects of individual cultural characteristics on mental health. However, there is also evidence indicating that like individual cultural characteristics, perceived social support is not just directly related to the mental health (e.g., psychological adjustment, academic adjustment) of Latina/o students (Arellano & Padilla, 1996; Hurtado et al., 1996; Lamborn et al., 1997; Solberg, 1990; Solberg &Villarreal, 1997; Terenzini et al., 1994) rather, appraisals of sociocultural stress and coping strategies may mediate this relationship. Indeed studies indicate that the perceived social support has been found to effect the appraisals and reports of stress, (Solberg & Villarreal, 1997), acculturative stress (Hovey & King, 1996), sociocultural alienation, and racial/ethnic tensions (Crouse, 1985; Hurtado, 1994; Loo & Rolison, 1986; Oliver et al., 1985; Ponterotto, 1990), and the utilization of effective coping strategies (Cooper et al., 1993; Cooper et al., 1998; Gloria & Rodriguez, 2000; Lopez, 1995; Rodriguez, 1994; Ruggiero et al., 1997).

Just as individual cultural characteristics and perceived social support have been found to be directly related to the mental health of Latina/o students, several studies support the direct relationship between sociocultural stress (i.e., minority status stress and/or acculturative stress) and mental health for minority students (Allen et al., 1998; Fuertes & Westbrook, 1996; Hovey & King, 1996; Kim, 1995; Loo & Rolison, 1986; Rodriguez et al., 2000; Williams & Berry, 1991). However, some studies provide support that this relationship is dependent on students' coping strategies (Crocker &

Major, 1989; Mena et al., 1987; Phenice & Griffore, 1994; Phinney & Chavira, 1995; Schmader et al., 2001). Similarly, a considerable amount of evidence supports a direct relationship between coping strategies and minority students' mental health (Aldwin & Revenson, 1987; Clum, & Febbraro, 1994; D'Zurilla et al., 1998; Essau &Trommsdorff, 1996; Leong et al., 1997; Mattlin et al., 1990; Nezu et al., 1986; Nezu & Ronan, 1988; Priester & Clum, 1993; Rodin & Salovey, 1989). Although the research is inconclusive regarding which coping strategies are effective when sociocultural stress is experienced, the variation in results is consistent with the growing body of research that suggests that coping strategies are dependent on complex factors including students' appraisal of sociocultural stress (Garcia-Vazquez et al., 1998; Mendoza, 1981) and various coping resources such as individual cultural characteristics (Cervantes & Castro, 1985; Gomez & Fassinger, 1994; Mena et al., 1987; Montgomery, 1992; Vazquez & Garcia-Vazquez, 1995) and perceived social support (Alva, 1991; Cooper et al., 1993; Cooper et al., 1998; Fiske, 1988; Gloria & Rodriguez, 2000; Lango, 1995; Lopez, 1995; Rodriguez, 1994; Ruggiero et al., 1997).

To empirically test the adaptation of Taylor and Aspinwall's (1996) model to Latina/o college students, a longitudinal design is necessary in order to demonstrate the continuous interplay between the various constructs of the model. Although there are inherent limitations to a cross-sectional design, investment in a longitudinal design was not practical since the adapted model has never been tested in its present form. Thus, the adapted model was examined at one point in time in order to provide initial support for this stress-mental health model. Although the findings were expected to have limited generalizability, choosing MSU as the single source of data, as opposed to selecting

multiple institutions, served to control for several threats to the internal validity of the study's findings. For example, MSU Latina/o students are more likely to have been exposed to similar conditions (e.g., university personnel, other institutional elements) than students at other institutions. Furthermore, Latina/o students at MSU are more prone to experience minority status and/or acculturative stress than students attending universities where Latinos constitute the largest ethnic group on campus (Cabrera & Nora, 1994).

Hypotheses.

Based on the presented literature review the following paths were hypothesized (see Figure 10).

Hypothesis 1: A direct, significant positive relationship between individual cultural characteristics and perceived social support (Path A).

Hypothesis 2: A direct, significant negative relationship between individual cultural characteristics and appraisal of sociocultural stress (Path B).

Hypothesis 3: A direct, significant negative relationship between perceived social support and appraisal of sociocultural stress (Path C).

Hypothesis 4: A direct, significant positive relationship between individual cultural characteristics and coping (Path D).

Hypothesis 5: A direct, significant positive relationship between perceived social support and coping (Path E).

Hypothesis 6: A direct, significant positive relationship between appraisal of sociocultural stress and coping (Path F).

Hypothesis 7: A direct, significant positive relationship between coping and mental health (Path G).

Hypothesis 8: As Taylor and Aspinwall (1996) suggest, individual cultural characteristics are hypothesized to affect Latina/o students' mental health indirectly either through perceived social support, the appraisals of sociocultural stress, or coping strategies. Second, perceived social support is hypothesized to affect Latina/o students' mental health indirectly through the appraisal of sociocultural stress or coping strategies.

Chapter 3

METHODS

Participants

A college population was ideal for a test of the adapted model because of the potential that a large university experience provides for multicultural interactions and experiences relevant to sociocultural stress and mental health. Thus, 598 Latina/o students at MSU were invited to participate in this study. However, international Latin American students (non-US citizens or residents) at MSU were excluded because acculturative stress, minority status stress, acculturation level, and ethnic identity are believed to be a function of both Latino and ethnic minority status within the United States.

Participants were 201 Latina/o undergraduate students, 72 men (35.8%) and 129 women (64.2%). The mean age of participants was 20.29 years (SD = 2.50). Approximately 26.4% were first years, 19.4% were second y ears, 22.4% were third years, 19.9% were fourth years, and 11.4% were in their 5th or greater year of college. The average GPA was 3.00 (SD = 0.52) (see Table 1). Participants reported that they identified with the following Spanish/Hispanic/Latino ethnic groups: Mexican American (37.3%), Mexican (11.4%), Chicano/a (6%), Puerto Rican (9.5%), Cuban (5.6%), and other Spanish/Hispanic/Latino subgroup (29.3%). See Table 2 for a complete description of the sample's cultural heritage. All participants were U.S. citizens, approximately 87% were born in the United States, and 84% reported being Michigan residents (see Table 3). Participants were asked to compare their families' financial status to other students' families at MSU. Approximately 9% indicated that their family was financially much

worse off, 26% reported that they were worse off, 44% stated that they were about the same, 18% indicated that they were better off, and 3% indicated that they were much better off (see Table 4).

Demographic information concerning the parents of the participants was also obtained. Approximately 58% of the participants identified one parent as Anglo/White, 42% as Mexican American, 16% as Mexican, 46% as other Latino/Hispanic, and 3.0% as other non-Latino/Hispanic. Approximately 65% of mothers and 60% of fathers were born in the U.S. Approximately 89% of mothers and 87% of fathers graduated from high school. See Tables 5-8 for complete description of parent demographic information.

Procedure

The MSU Registrars Office was solicited to mail questionnaire packets to 598 undergraduate students identified in their database as Latino or Hispanic, US citizens or residents, age 18 or older. The packets contained self-report measures of the various constructs in the model, a return envelope, a cover letter inviting students to participate in the study, instructions for participation, an informed consent statement, and a consent/mailing address form. Participants who returned a completed questionnaire packet and signed consent/mailing address form by the designated return date received a check for $10.00 which was mailed to the local address each student provided. The Registrar's Office mailed follow-up invitation letters to all 598 students two weeks prior to the designated return date.

Table 1. Demographic Information: Age, Year in College, and GPA of Participants

	Mean	SD	Minimum	Maximum
Age:	20.29	2.50	18	39
Year in college:	2.71	1.36	1	5
GPA:	3.0	0.52	1.5	4.0

Table 2. Demographic Information: Self Identification of Participants

Argentinean	2.0%	Bolivian	0.5%
Brazilian	1.0%	Chicana/o	6.0%
Colombian	5.0%	Cuban	5.5%
Dominican	1.0%	Ecuadorian	2.0%
Guatemalan	0.5%	Honduran	0.5%
Mexican	11.4%	Mexican American	37.7%
Paraguayan	0.5%	Peruvian	3.0%
Portuguese	0.5%	Puerto Rican	9.5%
Salvadoran	2.5%	Spanish	5.0%
Venezuelan	0.5%	Two Spanish/Latino groups	4.5%

Table 3. Demographic Information: Place of Birth, Citizenship, and Residency of Participants

Place of Birth		Citizenship		Residency	
USA	89.6%	USA	100.0%	Michigan	84.1%

Table 4. Demographic Information: Participants families' financial status compared to other students' families at MSU

Status	Percent
Much worse off	9%
Somewhat worse off	25.9%
About the same	44.3%
Better off	17.9.%
Much better off	2.5%

Table 5. Demographic Information: Ethnic/Racial Group Identified for Fathers and Mothers

	Fathers	Mothers
White Anglo	25.4%	34.8%
Mexican American	25.9%	25.4%
Mexican	12.4%	9.0%
Other Latino/Hispanic Group	34.8%	29.4%
Other	1.5%	1.5%

Table 6. Demographic Information: Specific Ethnic/Racial Group Identified for Fathers and Mothers

	Fathers	Mothers
African American	0.5%	0%
Anglo/White	25.4%	34.%
Argentinean	1.0%	2.0%
Asian	0.5%	0.0%
Bolivian	0.5%	0.0%
Brazilian	0.5%	1.0%
Chilean	1.0%	0.0%
Columbian	2.5%	3.0%
Cuban	4.5%	4.0%
Dominican	2.5%	1.5%
Ecuadoran	1.0%	1.0%
Guatemalan	0.5%	0.0%
Honduran	0.0%	0.5%
Iranian	0.0%	0.5%
Japanese	0.5%	0.0%
Kuwaití	0.5%	0.0%
Mexican American	25.9%	25.4%
Mexican National	12.4%	0.9%
Panamanian	0.0%	0.5%
Paraguayan	0.5%	0.0%
Peruvian	2.5%	1.0%
Portuguese	1.0%	0.0%
Puerto Rican	8.5%	8.0%
Salvadoran	1.5%	2.0%
Spanish	4.0%	1.5%
Syrian	0.0%	0.5%
Venezuelan	0.0%	0.5%
Two Latino/Hispanic groups	2.0%	2.5%
Not Specified	1.0%	1.0%

Table 7. Demographic Information: Place of Birth of Mothers and Fathers

	Mothers	Fathers
USA	65.2%	59.7%

Table 8. Demographic Information: Level of Education of Mothers and Fathers

	Mother	Father
Graduated from junior high	6.0%	6.0%
Attended high school	4.5%	6.0%
Graduated from high school	40.3%	19.4%
Completed a technical training program	11.9%	14.9%
Graduated from college	19.9%	24.4%
Attended graduate school	4.5%	3.0%
Got a professional or graduate degree	10.4%	19.4%
Do not know	2.0%	5.5%

Instruments

In this section, the psychometric properties of the measures are described. The self-rating instruments included in the questionnaire packet are: Demographic Information Form, Minority Student Stresses Scale (MSSS), Social, Attitudinal, Familial and Environmental (S.A.F.E.) Acculturation Stress Scale, Acculturation Rating Scale for Mexican Americans-Revised (ARSMA-II; Scale 1), Multigroup Ethnic Identity Measure (MEIM), Perceived Social Support From Family and Friends (PSS-FA; PSS-FR), Perceived Social Support From University Personnel (PSS-UP), Brief COPE Inventory, Problem-Focused Style of Coping (PF-SOC), the DSM Scale for Depression-26 (DSD-26), the Satisfaction with Life Scale (SWLS), and the Subjective Happiness Scale (SHS).

Demographic Information Form

The demographic information form (Appendix A) asks specific questions regarding:

A) Sociodemographics: age, gender, level of education, and parents' level of education and occupation.

B) Sociocultural variables: place of birth, generation level, citizenship, ethnic background, and parents' ethnic identification.

C) Other relevant background information: housing status, affiliation with MSU organizations related to their ethnic group, and GPA.

Appraisal of Sociocultural Stress

Minority Student Stresses Scale (MSSS). The MSSS (Saldana, 1994) was developed to assess minority–specific stressors and perceptions of Latina/o students' experiences within a predominantly White university environment. The MSSS is based on issues identified in previous student stress scales (Edmonds, 1984; Zitzow, 1982; as

cited in Saldana, 1994). Respondents are asked to rate the stressfulness of twenty-five items, since they have been in college, using a 6-point scale ranging from 0 (does not apply) to 5 (extremely stressful). The MSSS is made up of three scales with the following reliabilities: Academic concerns (alpha = 0.93), Ethnic-nonethnic group concerns (alpha = 0.84), and Discrimination concerns (alpha = 0.86). Intercorrelations among the scales were not reported. Total and subscale scores are obtained by summing responses within each domain, with higher scores indicative of more experiences of minority status stress. See Appendix B.

Social, Attitudinal, Familial and Environmental (S.A.F.E.) Acculturation Stress Scale. The S.A.F.E. scale (Mena et al., 1987) is a short version of Padilla, Wagatsuma, and Lindholm's (1985) 60-item measure developed to assess stress arising from the process of acculturation in four broad areas: (1) the quality of immigrants' social life in the new culture; (2) immigrants' attitudes toward their former culture and country of origin; (3) immigrants' relations with family in the new culture, particularly with parents; and (4) the quality of the environment in the new culture. Thus, Mena et al. (1987) developed the 24 item S.A.F.E. scale to assess acculturative stress in these four areas. Although Mena et al (1987) concluded that the S.A.F.E. was reliable (alpha = 0.89) for use with Asian American and international students, they neither elaborated on the psychometric properties nor identified the items belonging to each of the subscales.

In response to this lack of information, Fuertes and Westbrook (1996) examined the validity and reliability of the S.A.F.E. scale with a heterogeneous group of Latina/o college students at a predominantly White, northeastern university. Respondents were asked to rate the stressfulness of each item using a 6-point scale, ranging from 0 (does not

apply) to 5 (extremely stressful). Factor analyses yielded a four-factor solution consisting of 21 items. These factors or subscales were named Environmental (reflecting pressure to assimilate and feeling impeded by cultural barriers; alpha=0.88), Attitudinal (reflecting stress that arises from separation from family, friends, and culture; alpha=0.73), Social (reflecting the quality of immediate interpersonal relationships, being sociable, and making friends; alpha=0.71), and Familial (reflecting conflicts between personal and family values, expectations, and aspirations; alpha = 0.70), respectively. Reliability analysis of the overall scale (21 items) was 0.89. Total and subscale scores were obtained by summing responses within each subscale, with higher scores indicative of more experiences of acculturative stress (Appendix C). The intercorrelations among the four subscales ranged from 0.34 to 0.52.

Individual Cultural Characteristics

Acculturation Rating Scale for Mexican Americans-Revised (ARSMA-II; Scale 1). The ARSMA-II, Scale 1 (Cuellar et al., 1995) is a revised version of the ARSMA (Cuellar, Harris, & Jasso, 1980). The original ARSMA (Cuellar et al., 1980) incorporated a unidimensional approach to assess degree of acculturation. Scale 1 of ARSMA-II (Appendix D) uses an approach that assesses attitudes and behaviors toward the culture-of-origin (Hispanic culture) and the host culture (American culture). Thus, with Scale 1 an individual can be classified unidimensionally by the degree or level of acculturation to both American and Mexican cultures which are identified by one of five levels: "Very Mexican Oriented," "Mexican Oriented to approximately Balanced Bicultural," "Slightly Anglo Oriented Bicultural," "Strongly Anglo Oriented," or "Very Assimilated/Anglicized." With Scale 1, an individual can also be classified using a

multidimensional approach, in which he or she is described by the typological pattern of acculturation: traditional, integrated (including both high and low bicultural) or assimilated. With the use of the 18 items of Scale 2 (Marginality Scale) separation and marginalization types can also be assessed.

Scale 1 consists of 30 items that measure the respondent's extent of involvement in the Mexican culture (17 items) and in the Anglo culture (13 items) by assessing a person's cultural practices, language proficiency and preferences, social affiliation, and ethnic identification. Respondents indicate the relative frequency with which they engage in certain behaviors using a 5-point Likert scale, ranging from 1 (not at all) to 5 (extremely often or almost always). Items related to involvement in the Mexican culture are summed to form the Mexican Orientation Subscale (MOS) and items related to involvement with the Anglo culture are summed to form the Anglo Orientation Subscale (AOS). An individual can be classified by level of acculturation to both cultures by taking the difference between the mean MOS score and mean AOS score and using designated cut off scores. The scores lead to one of the five classifications stated above (Cuellar et al., 1995, p. 284).

The ARSMA-II was normed on 379 university students from South Texas. The normative sample represented five generational levels, as well as the Mexican, Mexican American, and Anglo ethnic groups. The Mexican Orientation Subscale (MOS) was found to have an internal consistency score (coefficient alpha) of 0.88 and the Anglo Orientation Subscale (AOS) an alpha of 0.83. MOS scores were found to decrease while AOS scores increase with each generation. The acculturation score yielded by Scale One of the ARSMA-II is highly correlated with the original ARSMA scale ($r = 0.89$; $n = 171$;

Cuellar et al., 1980). Furthermore changes in scores of several cognitive referents of acculturation (Familism, Machismo, Folk Beliefs, & Fatalism) have been found to occur concomitantly with ARSM-II scores (Cuellar, Arnold, & Gonzalez, 1995).

The ARSMA-II (Scale 1) is one of a few scales that assess social affiliation and daily living habits in addition to language use. Furthermore, the ARSMA-II is an independent measure of culture and not a measure that is bipolar in nature. Rather, the ARSMA-II allows for the possibility that an individual may retain various elements of their culture of origin while simultaneously embracing another culture (Zane & Mak, 2000). However, since the ARSMA-II was developed specifically for use with Mexican Americans, in this study, references to Mexican or Mexican culture were modified to include Latinos in general. Examples of adapted items include "My father identifies or identified himself as 'Latino.'" and "I like to identify myself as a 'Latina/o.'"

Multigroup Ethnic Identity Measure (MEIM). Although the MEIM (Appendix E) was created to assess ethnic identity among members of diverse ethnic groups (Phinney, 1992), research indicates that its internal consistency and factor structure is supported with Latinos (e.g., Cuellar et al., 1997; Phinney, Chavira, & Tate, 1993). The MEIM is a 14 item measure with three subscales (a) Affirmation and Belonging (5 items; alpha = 0.86), (b) Ethnic Identity Achievement (7 items; alpha = 0.80), and (c) Ethnic Behavior (2 items). Reliability was not estimated for the Ethnic Behavior scale. Items are rated on a 4-point scale from 4 (strongly agree) to 1 (strongly disagree). High scores are indicative of high ethnic identity. Results from a factor analysis of the MEIM conducted by Phinney (1992) showed that the items representing the three aspects of ethnic identity

also loaded on a single (Ethnic Identity) factor. Furthermore, overall reliability of the 14 item factor was found to be 0.90 for a college sample.

Perceived Social Support

Perceived Social Support From Family and Friends (PSS-FA;PSS-FR). The PSS-FA and PSS-FR (Procidano & Heller, 1983) were developed in order to measure the extent to which an individual perceives his or her needs for support, information, and feedback is met by family and friends, respectively. Each measure consists of 20 declarative statements to which the subject responds by circling "yes," "no," or "don't know." Each item answered in the direction of support is scored as 1, resulting in total scores that range from 0 (no perceived support) to 20 (maximum perceived support). "Don't know" responses are not scored. The PSS-FA (Appendix F) and PSS-FR (Appendix G) have been found to be reliable measures yielding Cronbach alphas of 0.90 and 0.88, respectively. Factor analyses with a sample of college students revealed that each of the scales is composed of a single factor. Procidano and Heller (1983) have found that the PSS-FA and the PSS-FR are separate and valid constructs.

According to Procidano and Heller (1983), one's perception of support from family and friends are assessed separately because various populations rely differently on each in different situations. In order to increase the discriminability of response options (Comrey, 1988), in this study, a 5-point Likert scale response format was used with options; 1 (strongly disagree) to 5 (strongly agree). This response format was expected to yield more information with regard to the degree of felt support rather than merely the existence of support. Finally, respondents were instructed to rate the items with respect to current perceptions of support (since starting college) from family and school peers.

Perceived Social Support From University Personnel (PSS-UP). Perceptions of support available from university personnel (e.g., faculty, graduate assistants, support staff, advisors) were assessed using a modified version of Procidano and Heller's (1983) PSS-FA and PSS-FR. The 20 items that appear on PSS-UP are identical to those on the PSS-FA and PSS-FR, apart from changes in the referent of the statement (e.g., "My family gives me all the support I need" or "My friends give me all the support I need" vs. "university personnel give me all the support I need"). A modified version of PSS-FA used to assess adolescents' perceived social support from school personnel has been found to have high internal reliability (coefficient alpha = .90) (DuBois, Felner, Meares, & Krier, 1994).

In using the PSS-UP (Appendix H), this study addresses the lack of research in the area of formal support. One reason for limited research in the area is due to the fact that the vast majority of social support measures are restricted to assess perception of support from informal networks. Failure to consider perceived formal support in conjunction with perceived informal support has important data analytic implications; analyses may lead to an inappropriate rejection of the stress-buffering hypothesis (Krause, 1990). Furthermore, it is overly simplistic to base measures of support solely on informal sources when it is clear that individuals can obtain support from formal sources as well (Jung, 1984).

Coping

The Brief COPE Inventory. The Brief COPE (Carver, 1997) is a short version of the COPE (Carver, Scheier, & Weintraub, 1989) which was developed to assess the different ways in which people respond to stress. The original-item COPE consists of 14

scales, each addressing a unique coping strategy. Thirteen of the 14 scales are measured by 4 items and the remaining scale (Alcohol and Drug Disengagement) consists of a single item. Five of the scales measure conceptually distinct aspects of problem-focused coping (active coping, planning, suppression of competing activities, restraint coping, seeking of instrumental social support) and five scales measure aspects of what might be viewed as emotion-focused coping (seeking of emotional social support, positive reinterpretation, acceptance, denial, turning to religion). The Brief COPE consists of 28 items with only 2 items for each of the 14 subscales (e.g., self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame). See Appendix I.

The Brief COPE can be used to examine both coping dispositions and situation-specific coping tendencies (depending on the researcher's needs and desires). Furthermore, respondents may be instructed to indicate how they generally feel and what they generally do when experiencing a stressful event or they may be instructed to respond to the items with respect to a particular stressor. For the purposes of this study, respondents were instructed to indicate how they dealt with minority status stress and/or acculturative stress. Items are endorsed on a 4-point scale, ranging from 1 (I haven't been doing this at all) to 4 (I've been doing this a lot). The items/responses are then summed up separately for each scale to yield 14 separate coping scores. Psychometric properties of the Brief COPE were assessed using a sample of 168 adults (aged 18-76 yrs) participating in a study of the process of recovery after Hurricane Andrew.

Although the Brief COPE and COPE have been used to assess problem-focused coping and emotion-based coping, a 24-item version of the Brief COPE has been successfully used to distinguish between direct and indirect coping in a sample of Asian-American, Latino, and European-American college students (Lee & Liu, 2001). Principal component analysis produced two subscales; COPE-Direct with items reflecting emotional support, active coping, positive reframing, planning acceptance, and religion; and the COPE-Indirect with items reflecting self-distraction, denial, alcohol, and substance use, behavioral disengagement, and venting of emotions. The COPE-Direct and COPE-Indirect had alpha coefficients of 0.79 and 0.74, respectively. The intercorrelation between the two scales was 0.14 (Lee & Liu, 2001).

Although a number of instruments have been developed to assess different aspects of coping, Heppner et al (1995) indicate the items of many of these coping inventories are ambiguous having multiple meanings and implications. This ambiguity makes it difficult to specify whether items assess basic cognitive, behavioral, or affective responses. Perhaps most importantly, most items on coping inventories have assessed whether a person engaged in a particular activity which makes it difficult to ascertain whether the consequences of the coping activity were positive or negative. The literature has shown that individuals have effectively used approach and avoidance coping strategies as well as cognitive, affective, and behavioral responses to successfully cope with internal and external stressors (Heppner et al., 1995). In light of these findings Heppner and colleagues have suggested that coping measures should begin to assess more stable dispositional coping styles that tap general coping strategies and not just situation-specific coping strategies. Furthermore, they proposed that problem- and emotion-

focused coping as well as approach-avoidance coping be re-conceptualized. Thus, similar to Cross (1995), they suggested that coping should be viewed as strategies that involve cognitive, behavioral, and affective activities aimed at altering a stressful situation. Furthermore, they operationalized the approach-avoidance distinction in terms of whether the coping activities moved the person (from his or her perspective) toward (i.e., Direct Coping; Cross, 1995) or away (i.e., Indirect coping; Cross, 1995) from resolving problems. In response to Heppner et al.'s (1995) suggestions, their measure of dispositional coping styles was included in this study in order to assess dispositional, direct and indirect coping strategies.

Problem-Focused Style of Coping (PF-SOC). The PF-SOC (Heppner et al., 1995) was developed to assess stable dispositional coping styles that tap general coping strategies. Although Heppner and colleagues limited the scope of their inventory to problem-focused coping, they did not exclude coping activities that included affective or emotional components. The PF-SOC contains 18 items that not only include coping activities but also short-term consequences of those activities that either facilitate or inhibit progress toward resolving the person's problems. The items are rated on a 5-point scale ranging from almost 1 (almost never) to 5 (a great deal). The PF-SOC contains three subscales one of which is representative of an approach or direct dimension in coping; Reflective Style (engaging in systematic and active ways of dealing with the problem) and two which are representative of avoidant or indirect dimensions in coping; Suppressive Style (avoiding dealing with the problem), and Reactive Style (engaging in strong cognitive and emotional reaction which do not allow them to deal with the

problem). The scores are derived by adding all of the ratings of the items in each subscale (Appendix J).

Psychometric properties of the PF-SOC were assessed using 320 undergraduate students taking an introductory psychology course. Internal consistency coefficients of 0.80 for Reflective Style, 0.77 for Suppressive Style, and 0.67 for Reactive Style were reported. The three subscales were found to be correlated moderately: Reflective Style/Reactive Style ($r = 0.08$), Reflective Style/Suppressive Style ($r = 0.25$), and Reactive Style/Suppressive Style ($r = 0.49$). The PF-SOC demonstrated construct, concurrent, and discriminative validity with several measures (Heppner et al., 1995). Test-retest reliability coefficients assessed over a 3-week time interval, ranged from 0.65 (Suppressive Style) to 0.67 (Reflective Style) to 0.71 (Reactive Style). Finally, regression analyses suggested that when compared with other coping instruments the Suppressive and Reactive subscales added a considerable amount of variance to each equation in predicting depression, anxiety, and psychological adjustment (Heppner et al., 1995).

Mental Health

The DSM Scale for Depression-26 (DSD-26). The DSD-26 (Roberts et al., 1995) was developed to ascertain prevalence rates, odds ratios, and risk factors of depressive illness (Cuellar & Roberts, 1997; Roberts, Roberts, & Chen 1997). The DSD-26 (Appendix K) contains 26 items that reflect nine diagnostic criteria (Mood, Anhedonia, Appetite, Motor, Energy, Guilt, Sleep, Thinking, and Suicide) in the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV, APA, 1994) needed to make a diagnosis of major depressive episode. The DSD-26 response asks respondents to

indicate how often in the last two weeks they have experienced particular symptoms. Respondents are given a choice of four responses: 1 (hardly ever or never); 2 (sometimes); 3 (often); and 4 (almost every day). Two scores are obtained with the DSD-26: (1) a continuous measure DSD Score that is the arithmetic sum of the 26 items, and (2) a threshold measure that utilizes an algorithm based on DSM-IV symptom criteria for major depressive episode. The algorithm used in arriving at a threshold measure requires a minimum of five responses indicating that the respondent has been experiencing the symptom "almost daily" for the past two weeks.

Although the DSD-26 was developed primarily with large, adolescent population samples, primarily in Texas, it has been applied across numerous ethnocultural and cross-national groups (i.e., Japan, China, Mexico, Hispanic elders). In all instances, it has been found to have excellent internal consistency (Coefficient alphas reported have consistently been in the low 0.90s; Cuellar & Roberts, 1997; Roberts et al., 1997; Wolaski, 1997; as cited in Cuellar, Roberts, & Bastida, 2002). The DSD-26 has been found to be significantly and positively correlated with measures of health, suicide and insomnia. The DSD-26 is one of the few depression scales which have been used with Spanish and English-speaking adult and adolescent Hispanic populations (Cuellar, Roberts et al., 2002).

Satisfaction with Life Scale (SWLS). The SWLS (Diener et al., 1985) was designed to assess a person's global judgment of life satisfaction, which is theoretically predicted to depend on a respondent's comparison of his or her life circumstances to his or her's standards, specific to a particular domain of life (e.g., work, family) or globally. The original scale consisted of 48 items with three subscales: Life Satisfaction, Positive

Affect, and Negative Affect. Ten items loaded unto the Life Satisfaction subscale. However, to eliminate redundancies of wording at minimal costs to reliability, this subscale was further reduced to 5 items and named the SWLS (Diener et al., 1985). Items are endorsed on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Scores on the SWLS can be interpreted in terms of absolute as well as relative life satisfaction. Total scores are interpreted as follow: 20 (neutral point on the scale), 21-25 (slightly satisfied), 15-19 (slightly dissatisfied), 26-30 (satisfied), and 5-9 (extremely dissatisfied).

The SWLS demonstrated excellent internal consistency (alpha = 0.87) and good test–retest stability over a 2-month period (alpha = 0.82). Principal-axis factor analysis resulted in single factor, accounting for 66% of the variance of the scale (Diener et al., 1985). This single-factor solution has since been replicated (Arrindell, Meeuwesen, & Huyse 1991; Lewis, Shevlin, Bunting, & Joseph, 1995; Pavot, Diener, Colvin, & Sandvik, 1991; Shevlin & Bunting, 1994). The SWLS also has demonstrated convergence with numerous measures of subjective well-being and life satisfaction (Diener et al., 1985; Pavot et al., 1991).

Normative data for the SWLS are available for diverse populations, including older adults, prisoners, individuals under inpatient care for alcohol abuse, abused women, psychotherapy clients, elderly caregivers of demented spouses, and persons with physical disabilities, as well as college student samples (Pavot & Diener, 1993). In addition, some cross-cultural data are available (e.g., Arrindell, et al., 1991; Shao & Diener, 1991; Shevlin & Bunting, 1994). See Appendix L.

Subjective Happiness Scale (SHS). The SHS (Lyubomirsky & Lepper, 1999) was developed to measure global subjective happiness. The SHS (Appendix M) contain 4 items that are rated on a 7-point Likert scale from 1 (not at all) to 7 (a great deal). A single composite score for global subjective happiness is computed by averaging responses to the four items (the fourth reverse-coded). Thus, the possible range of scores on the SHS is from 1.0 to 7.0 with higher scores reflecting greater happiness.

The psychometric properties of the SHS were assessed with 2, 732 college and high school students and community adults in California and Moscow, Russia. Reliability coefficients for the SHS ranged from 0.79 to 0.94 (M = 0.86) for all samples, demonstrating comparability across samples of varying ages, occupations, languages, and cultures. Principle component analyses performed separately for each sample showed that the four items of the SHS load onto a single factor. The SHS demonstrated stability over time, ranging from 3 weeks to 1 year. Test-retest reliability ranged from 0.55 to 0.90 (M = 0.72). The SHS also demonstrated convergence with a number of measures of happiness and well-being. Evidence of discriminant validity was further obtained from very low correlations with theoretically unrelated constructs, such as academic success and stressful events.

Chapter 4

RESULTS

Phase One. Data obtained from the instruments was analyzed in four phases. Phase 1, included a descriptive analysis of the study's observed variables. Decisions regarding missing values, outliers, and nonnormality of the data were made using the recommendation of West, Finch, and Curran (1995), as these attributes can dramatically affect the results of structural equation modeling. Less than 1% of the data was missing for the entire model (0.06%). Mean substitution was used to replace missing data values. As recommended by Cohen (1990), stem and leaf plots depicting the distributions of each measured variable were examined to detect and exclude outliers (cases more than three standard deviations from the mean) from the analyses. A total of 17 participants exhibited extreme values and were excluded from the analyses. Extremely high scores were exhibited on the MSSS (3 participants), the S.A.F.E. (6 participants), the Brief COPE (1 participant), and the DSD-26(1 participant). Extremely low scores were exhibited on the ARSMA-II (3 participants), the Brief COPE (2 participants), the PSSFA (2 participants), the PSSFR (1 participant) and the SHS (1 participant). The data were examined for excessive kurtosis and skewness. The absolute value of the skew and kurtosis indices were >3 and >10, respectively, indicating that excessive kurtosis and skewness were not present in the data set (Kline, 1998). The data also reflected a relatively normal distribution.

Phase Two. In Phase 2, the psychometric properties of the measures were examined. Thus, the items of each measure were grouped according to each instrument's hypothesized subscales. Observed correlations among the subscales of each measure

were examined. The internal consistency of each subscale was assessed by calculating coefficient alpha values. Alpha coefficients ranged from 0.51 on the Social Scale of the S.A.F.E. to 0.92 on the DSD26 (see Table 9). Because several of the scales had low internal consistency coefficients and were found to be highly correlated, confirmatory factor analyses (CFAs) using LISREL 8.3 (Joreskog & Sorbom, 1992) were conducted to determine if the collected data fit the reported factor structure for each measure. For measures that were reported to have more than one scale (e.g., ARSMA-II, MEIM, MSSS, S.A.F.E., Brief COPE, and PF-SOC), CFAs were also conducted to determine if a significant amount of the covariance among the subscales might not better be explained by one factor or a unidimensional factor solution. Floyd and Widaman (1995) indicate that unidimensional factor solutions may be appropriate for many psychological instruments because most psychological constructs are composed of multiple, correlated facets.

To determine the degree of fit, absolute, relative and parsimonious fit indices were examined. To determine absolute fit or the overall fit of the model the chi-square (χ^2) goodness of fit index was examined. This index evaluates covariance among measured variables that are not accounted for by the models. If the chi-square statistic is significant, there is statistical basis for rejecting the hypothesized factor structure of the instrument(s). The chi-square statistic is, however, dependent on sample size. Therefore, three additional indices were examined as recommended by Floyd and Widaman (1995) and Reise, Widaman, and Pugh (1993). These indices were the Goodness of Fit (GFI), the Adjusted Goodness of Fit (AGFI) (Joreskog & Sorbom, 1989) and the Root Mean Square Error Approximation (RMSEA; Steiger & Lind, 1980). The GFI and AGFI

indices range between zero and one and 0.90 is a suggested acceptable value. According to Browne and Cudeck (1993) a RMSEA value of 0.05 or less indicates a close fit to the data; 0.05-0.10 a moderate fit; and above 0.10 is a bad fit.

The relative fit was assessed using the Comparative Fit Index (CFI; Bentler, 1990) and the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) or Non-Normed Fit Index (NNFI; Bentler & Bonett, 1980). The CFI and NNFI are indices relatively independent of sample size. CFI and NNFI values of 0.90 are considered as acceptable indicators of fit (Reise et al, 1993).

Relative parsimony of the null model (model with no common factors) and competing model (hypothesized factor structure of measure(s)) was determined by the Parsimonious Goodness of Fit Indices (PGFI and PNFI; Mulaik et al., 1989). These indices are relatively unbiased measures of fit that adjust for the degree of parsimony in each particular model. Higher values, ranging from zero to one, indicate better fit.

Taken together, the indices of absolute, comparative, and parsimonious fit did not provide strong support for all measures except the SWLF and the SHS. CFAs of unidimensional models of all measures excluding the SWLF and SHS did not provide strong indices of fit. Table 10 depicts these indices.

Phase Three. The third wave of analyses explored the factor structure of measures that did not have acceptable fit. The items of each measure were submitted to Principal Axis Factor (PAF) analyses using SPSS 11.0 in order to determine the best factor structure of each measure for this sample. Because debate exists about the appropriate

Table 9. Intercorrelations and Reliability Coefficients for Reported Subscales of Measures

	ARSMA1	ARSMA2	MEIM1	MEIM2	MEIM3	PSSFA	PSSFR	PSSUP	MSSS1	MSSS2	MSSS3	SAFE1	SAFE2	SAFE3	SAFE4	BCOPE1	BCOPE2	PFSOC1	PFSOC2	PFSOC3	DSD26	SWLF	SHS
ARSMA1	0.89																						
ARSMA2	-0.35	0.63																					
MEIM1	0.70	-0.27	0.83																				
MEIM2	0.61	-0.18	0.75	0.83																			
MEIM3	0.63	-0.38	0.67	0.57	0.61																		
PSSFA	0.12	0.19	0.13	0.16	0.10	0.90																	
PSSFR	-0.02	0.09	-0.02	-0.03	0.08	0.34	0.90																
PSSUP	0.01	-0.10	0.01	0.08	0.12	0.11	0.24	0.87															
MSSS1	0.42	-0.32	0.40	0.42	0.51	-0.06	0.05	0.03	0.92														
MSSS2	0.32	-0.26	0.28	0.36	0.41	-0.11	-0.01	-0.04	0.76	0.84													
MSSS3	0.29	-0.29	0.30	0.26	0.38	-0.08	-0.06	-0.06	0.76	0.62	0.90												
SAFE1	0.26	-0.24	0.23	0.26	0.33	-0.14	-0.07	-0.06	0.72	0.70	0.71	0.88											
SAFE2	0.31	-0.30	0.33	0.28	0.23	-0.04	-0.10	-0.05	0.50	0.53	0.40	0.57	0.75										
SAFE3	0.04	-0.10	0.02	-0.01	0.05	-0.17	-0.24	-0.12	0.24	0.36	0.24	0.51	0.42	0.51									
SAFE4	0.13	-0.11	0.20	0.13	0.16	-0.14	0.08	0.05	0.33	0.38	0.27	0.38	0.40	0.24	0.66								
BCOPE1	0.18	0.08	0.24	0.27	0.17	0.34	0.29	0.16	0.07	0.03	0.05	0.06	0.13	-0.12	0.12	0.84							
BCOPE2	0.02	-0.13	0.09	0.07	0.14	-0.16	0.03	0.00	0.22	0.26	0.27	0.36	0.34	0.25	0.31	0.15	0.70						
PFSOC1	0.09	0.08	0.09	0.21	0.09	0.23	0.12	0.26	0.08	0.01	0.04	0.03	0.01	-0.07	0.03	0.61	-0.04	0.85					
PFSOC2	-0.06	0.00	-0.12	-0.08	-0.01	-0.09	-0.10	-0.05	0.06	0.13	0.08	0.19	0.19	0.21	0.19	-0.12	0.50	-0.17	0.72				
PFSOC3	0.00	0.03	-0.01	-0.01	-0.02	-0.07	-0.01	-0.03	0.15	0.23	0.17	0.29	0.25	0.19	0.24	0.21	0.48	0.14	0.57	0.76			
DSD-26	0.08	-0.06	0.03	0.06	0.09	-0.23	-0.11	-0.17	0.24	0.28	0.20	0.25	0.27	0.26	0.26	-0.04	0.55	-0.08	0.42	0.48	0.93		
SWLF	0.02	0.03	0.04	0.00	0.01	0.38	0.24	0.20	-0.16	-0.16	-0.18	-0.20	-0.15	-0.18	-0.04	0.23	-0.33	0.13	-0.26	-0.27	-0.55	0.89	
SHS	0.11	0.11	0.08	0.03	-0.01	0.38	0.20	0.16	-0.18	-0.18	-0.20	-0.17	-0.21	-0.21	-0.11	0.17	-0.39	0.08	-0.22	-0.28	-0.55	0.66	0.88
MEAM	49.97	55.37	16.38	19.75	4.86	78.63	77.66	48.97	18.96	14.98	9.59	14.70	7.20	3.25	3.49	35.92	16.37	22.08	13.37	13.35	46.83	24.17	20.50
SD	13.93	5.29	3.09	4.61	1.78	13.51	12.11	11.90	10.53	6.92	6.32	8.46	4.18	2.44	2.95	7.10	3.85	5.75	4.04	3.97	12.70	6.57	4.60

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Mexican Orientation Scale; ARSMA2 = Anglo Orientation Scale; MEIM1 = Affirmation and Belonging; MEIM2 = Ethnic Identity Achievement; MEIM3= Ethnic Behaviors; PSSFA = Perceived Social Support –Family; PSSFR = Perceived Social Support-Friends; PSSUP = Perceived Social Support-University Personnel; MSSS1= Academic Concerns; MSS2 = Ethnic-nonethnic Group Concerns; MSSS3 = Discrimination Concerns; SAFE1 = Environmental; SAFE2 = Attitudinal; SAFE3 = Social; SAFE4 = Familial; BCOPE1 = Direct Coping BCOPE2= Indirect Coping; PFSOC1 = Reflective Style; PFSOC2 = Suppressive Style; PFSOC3 = Reactive Scale; DSD-26 = DSM Scale for Depression-26; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

applications of orthogonal (varimax option in SPSS) and oblique (promax option in SPSS) rotations when conducting PAF, both were performed. The resulting factor solutions differed significantly. Thus, Wood, Tataryn, and Gorsuch's (1996) criteria for genuine factors were considered. These criteria are: large factor loadings, meaningful factors, and replicated factors identified in previous research. In addition, as recommended by Floyd and Widaman (1995), a factor was only considered if it consisted of at least three variables. The criteria for determining the number of factors to be extracted were based on eigenvalues greater than 1.0 (Guttman, 1954) accounting for 3% or more of the explained variance (Kachigan, 1991). Furthermore, as Floyd and Widaman (1995) recommend, solutions with factors that accounted for close to 50% of the variance of the measured variables were retained. Finally, the conceptual meaningfulness of the factors was considered in order to determine which factor solutions made the most sense based on theoretical or empirical grounds (Wood et al., 1996). The results of the PAF with orthogonal rotation met the above criteria best and are described below.

The initial result of the PAF with orthogonal rotation was used to determine the number of forced factor solutions that needed to be conducted for each measure. Forced factor solutions were then inspected in terms of conceptual meaningfulness using the conventional criterion of factor loadings of 0.40 or higher. If an item had a factor loading of 0.40 or greater on more than one factor and the discrepancy between the item factor loadings was less than 0.30 the item was deleted from both factors. Once the best factor solutions were established, reliability analyses of each scale were performed. Additional items were removed from their perspective scales if internal consistency was improved

Table 10. Goodness of Fit Indices for Confirmatory Factor Analyses of Hypothesized Scales

Model	N	X^2	df	GFI	AGFI	RMSEA	CFI	NNFI	PNFI	PGFI
ARSMA-II (2 dimensional model; Cuellar et al., 1995)	201	2053.36*	404	.59	.53	.14	.52	.48	.43	.52
ARSMA-II unidimensional model	201	2060.23*	405	.59	.53	.14	.52	.48	.43	.52
MEIM (3 dimensional model; Phinney, 1992)	201	189.32*	74	.88	.83	.09	.91	.88	.70	.62
MEIM unidimensional model	201	238.55*	77	.85	.80	.10	.88	.86	.70	.63
MSSS (3 dimensional model; Saldana, 1994)	201	817.11*	272	.75	.71	.10	.81	.79	.67	.63
MSSS unidimensional model	201	1241.48*	275	.67	.61	.13	.72	.70	.61	.57
S.A.F.E. (4 dimensional model; Mena et al., 1987)	201	538.00*	183	.80	.74	.10	.81	.78	.64	.63
S.A.F.E. unidimensional model	201	740.47*	189	.74	.68	.12	.72	.69	.58	.60
Brief COPE (2 dimensional model; Lee & Liu, 2001)	201	748.45*	208	.75	.69	.11	.60	.56	.48	.61
Brief COPE unidimensional model	201	972.17*	209	.69	.63	.14	.46	.40	.36	.57
PF-SOC (3 dimensional model; Heppner et al., 1995)	201	439.91*	132	.80	.75	.11	.76	.72	.60	.62
PF-SOC unidimensional model	201	5148.74*	135	.54	.41	.23	.40	.32	.33	.42
PSSFA (unidimensional model; Procidano & Héller, 1983)	201	1268.68*	170	.61	.52	.21	.64	.61	.54	.50
PSSFR (unidimensional model; Procidano & Héller, 1983)	201	1073.44*	170	.65	.57	.16	.65	.61	.54	.53
PSSUP (unidimensional model; Procidano & Héller, 1983)	201	822.71*	170	.71	.64	.14	.68	.64	.56	.57
DSD-26 (unidimensional model; Roberts et al., 1995)	201	1006.85*	299	.72	.67	.11	.76	.74	.62	.61
SWLS (unidimensional model, Diener et al., 1985)	201	14.48*	5	.97	.92	.10	.98	.97	.49	.32
SHS (unidimensional model; Lyubomirsky & Lepper, 1999)	201	0.85	2	.99	.99	.00	1.0	1.01	.33	.20

Note. N = Sample Size; X^2 = Chi-Squared; df = Degrees of Freedom; GFI = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; NNFI = Non-normed Fit Index; PNFI = Parsimonious Normed Fit Index PGFI = Parsimonious Goodness of Fit Index. *$p < 0.001$

(alpha values increased). Finally, the means, standard deviations, and range for each measure's scale were calculated (see Table 11).

Table 11. Means, Standard Deviations, and Range of Derived Scales

Scale		Mean	SD	Range
ARSMA1	Latino Orientation	37.32	11.34	15-64
ARSMA2	Anglo Affiliation	11.83	3.15	3-15
MEIM1	Recognition of Ethnicity	16.51	3.11	8-20
MEIM2	Exploration of Ethnicity	8.60	2.20	3-12
MSSS1	Appraisal of Discrimination	15.36	9.26	0-40
MSSS2	Appraisal of Campus Culture	17.37	8.42	0-40
SAFE1	Alienation due to Cultural Barriers	5.93	4.35	0-21
SAFE2	Interpersonal Stress	12.32	6.38	0-30
BCOPE1	Active Coping	23.09	4.68	8-31
BCOPE2	Seeking Support	10.95	3.37	4-16
BCOPE3	Passive Coping	13.44	3.82	8-26
PFSOC1	Assertive Coping	22.08	5.75	7-33
PFSOC2	Avoidant Coping	24.53	6.73	10-40
PSSFA1	Received Family Support	40.01	8.41	15-50
PSSFA2	Family Intimacy	20.10	4.88	6-25
PSSFR1	Received Peer Support	26.61	5.72	8-35
PSSFR2	Providing Peer Support	16.29	3.10	6-20
PSSFR3	Peer Closeness	19.19	4.42	6-25
PSSUP1	Providing Support to University Personnel	12.68	5.66	7-31
PSSUP2	Received Support from University Personnel	16.79	4.81	6-29
PSSUP3	Detachment from University Personnel	9.76	2.64	4-15
DSD1	Emotional Depressive Symptoms	19.64	6.01	10-38
DSD2	Physical Symptoms	13.55	4.37	7-27
DSD3	Suicidal Symptoms	3.51	1.21	3-10
SWLF	Satisfaction with Life	24.17	6.57	8-35
SHS	Subjective Happiness Scale	20.50	4.60	9-28

Individual Cultural Characteristics

Acculturation Rating Scale for Mexican Americans-Revised (ARSMA-II; Scale 1; Cuellar et al., 1995). This measure was used to assess level of acculturation. The literature reported two subscales, Mexican Orientation Scale (MOS; 17 items) and the Anglo Oriented Scale (AOS; 13 items). Acculturation scores for each participant were calculated as suggested by Cuellar et al. (1995). Thus, the mean of the MOS was subtracted from the mean of the AOS. Cuellar et al. (1995) reported a test-retest reliability coefficient over a 1-week interval of 0.96 for the acculturation score. The acculturation scores were then compared to the cutting scores to determine acculturation level. No participants represented a Very Latina/o Oriented level. Approximately 11% represented a Latina/o Oriented to Approximately Balanced Bicultural level, 31% represented a Slightly Anglo Oriented Bicultural level, 44% represented a Strongly Anglo Oriented level, and 14% represented a Very Assimilated: Anglicized level. A confirmatory factor analysis (CFA) indicated a poor fit for the data [χ^2 (df 404, N=201) = 2053.36, $p < 0.001$, GFI = 0.59, AGFI = 0.53, RMSEA = 0.14, CFI = 0.52, NNFI = 0.48, PNFI = 0.43, PGFI = 0.52]. A unidimensional model produced similar results [χ^2 (df 406, N=201) = 2063.23, $p < 0.001$, GFI = 0.59, AGFI = 0.53, RMSEA = 0.14, CFI = 0.52, NNFI = 0.48, PNFI = 0.43, PGFI = 0.52]. The initial results of the PAF with orthogonal rotation yielded eight factors with eigenvalues greater than 1.0 that accounted for 3% or more of the explained variance. However, only two factors met the criteria outlined above for appropriate scales. Thus, PAF analyses were repeated first forcing a two factor solution and then forcing one factor. The two-forced factor solution best reflected theoretical meaningfulness and parsimony. Item loadings for the first factor

ranged from 0.415 to 0.786. This factor accounted for 26.53% of the explained variance and appeared to be a measure of orientation to Latina/o culture. Fourteen of the 17 items of the MOS and one item of the AOS loaded on this factor. One item was deleted because it also loaded on the second factor and the discrepancy between item loading was approximately 0.03. Reliability analyses of this factor revealed that deleting the one item from the AOS scale increased the alpha coefficient from 0.89 to 0.91. Item loadings for the second factor ranged from 0.437 to 0.859. This factor accounted for 8.54% of the explained variance and appeared to be a measure of affiliation with Anglos. Only 4 items of the AOS scale loaded on this factor. Furthermore, reliability analysis revealed that the alpha coefficient would increase from 0.74 to 0.80 if one of the items was deleted. The resulting two scales, Latino Orientation and Anglo Affiliation are represented by ARSMA1 and ARSMA2 in Table 12 and Figure 11. High scores on each scale indicate strong orientation to Latino culture and strong affiliation with Anglos, respectively.

Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). The MEIM was used to assess ethnic identity. Phinney (1992) reported three factor subscales; Affirmation and Belonging, Ethnic Identity Achievement, and Ethnic Behavior. However, subsequent studies have reported a one-factor structure for this measure. CFAs of the three-factor and one factor solutions indicated a poor fit for the data [Three Factor; χ^2 (df 74, N=201) = 189.32, $p < 0.001$, GFI = 0.88, AGFI = 0.83, RMSEA = 0.09, CFI = 0.91, NNFI = 0.88, PNFI = 0.70, PGFI = 0.62; One factor: χ^2 (df 77, N=201) = 238.55, $p < 0.001$, GFI = 0.85, AGFI =0.80, RMSEA = 0.10, CFI = 0.88, NNFI = 0.86, PNFI = 0.70, PGFI = 0.63]. The initial results of the PAF with orthogonal rotation yielded two factors with eigenvalues greater than 1.0 that accounted for 54.70% of the explained variance.

Table 12. Acculturation Rating Scale for Mexican Americans-Revised (ARSMA-II)

Scale 1: Alpha = 0.91 (13 items)	Latino Orientation	Factors 1	2
ARSMA1	I speak Spanish	**.786**	-.320
ARSMA8	I enjoy Spanish language TV	**.757**	-.229
ARSMA17	My thinking is done in the Spanish language	**.749**	-.151
ARSMA3	I enjoy speaking Spanish	**.739**	-.228
ARSMA12	I enjoy reading (e.g., books in Spanish)	**.710**	-.208
ARSMA14	I write (e.g., letters in Spanish)	**.710**	-.236
ARSMA11	I enjoy Spanish language movies	**.695**	-.215
ARSMA6	I enjoy listening to Spanish language music	**.672**	-.222
ARSMA5	I associate with Latinos and/or Hispanic Americans	**.524**	-.273
ARSMA24	My family cooks Hispanic foods	**.491**	-.285
ARSMA26	My friends now are of "Hispanic or "Latino" origin	**.455**	-.089
ARSMA29	I like to identify myself as Latino or Hispanic	**.424**	-.034
ARSMA18	My contact with my native country has been	**.415**	-.341
Items deleted:			
ARSMA22	My friends while I was growing up were of Hispanic origin	**.476***	**-.448**
ARSMA16	My thinking is done in the English language	**-.453****	.252
Scale 2: Alpha = 0.80 (3 items)	**Association with Anglos**	**Factors 1**	**2**
ARSMA23	My friends while I was growing up were of Anglo origin	.022	**.859**
ARSMA25	My friends now are of Anglo origin	.133	**.781**
ARSMA4	I associate with Anglos	.194	**.572**
Items deleted:			
ARSMA30	I like to identify myself as an American	-.227	**.437**

* Item deleted because it loaded on more than one factor and the discrepancy was <0.30. ** Item deleted because its deletion improved coefficient alpha.

The results of the subsequent forced factor solutions revealed that the two as opposed to the one forced factor solution was more conceptually meaningful. Item loadings for the first factor ranged from 0.421 to 0.795. This factor accounted for 46.66% of the explained variance and appeared to be a measure of recognition of ethnicity. All items of the Affirmation and Belonging and the Ethnic Behavior scales and one item from Ethnic Identity Achievement loaded on this factor. The one item from the Ethnic Identity Achievement and one item from Affirmation and Belonging were deleted because they also loaded on the second factor and the discrepancy between item loadings were approximately 0.13 and 0.26, respectively. Reliability analyses of this factor revealed that deleting one from the Ethnic Behaviors scale increased the alpha coefficient from 0.821 to 0.832. Item loadings for the second factor ranged from 0.516 to 0.717. This factor accounted for 8.04% of the explained variance and appeared to be a measure of one's exploration of ethnicity. Four items from the Affirmation and Belonging scale loaded on this factor. However, one of the items was deleted because it loaded on both factors and the discrepancy between loadings was 0.01. Alpha reliability for this scale was acceptable ($\alpha = 0.72$). The resulting two scales Recognition of Ethnicity and Exploration of Ethnicity are represented by MEIM1 and MEIM2 in Table 13 and Figure 11. High scores on both of these scales indicate high ethnic identity.

Appraisal of Sociocultural Stress

Minority Student Stresses Scale (MSSS; Saldana, 1994). The MSSS was used to assess stressful experiences and perceptions of the university relevant to ethnic minority status among Latina/o students. Saldana (1994) reported that the MSSS is made up of three scales; Academic Concerns, Ethnic-Nonethnic Group Concerns, and Discrimination

Table 13. Multi- Ethnic Identity Measure (MEIM)

Scale 1:	Recognition of Ethnicity	Factors	
Alpha = 0.83 (5 items)		1	2
MEIM13	I feel a strong attachment towards my own ethnic group	**.795**	.368
MEIM14	I feel good about my cultural or ethnic background	**.726**	.208
MEIM12	I participate in cultural practices of my own group, such as special food, music, or customs	**.659**	.291
MEIM11	I have a lot of pride in my ethnic group and its accomplishments	**.619**	.238
MEIM5	I am happy that I am a member of the group I belong to	**.542**	.205
Items deleted:			
MEIM8	I have a strong sense of belonging to my own ethnic group	**.671***	**.407**
MEIM9	I understand pretty well what my ethnic group membership means to me, in terms of how to relate to my own group and other groups	**.603***	**.475**
MEIM2	I am active in organizations or social groups that include mostly members of my ethnic group	**.421****	.283
Scale 2:	Exploration of Ethnicity	Factors	
Alpha = 0. 72(3 items)		1	2
MEIM7[+]	I really have not spent much time trying to learn more about the culture and history of my ethnic group	.127	**.717**
MEIM1	I have spent time trying to find out more about my own ethnic group, such as history, traditions, and customs	.310	**.670**
MEIM10	In order to learn more about my ethnic background, I have often talked to other people about my ethnic group	.385	**.516**
Items deleted:			
MEIM3	I have a clear sense of my ethnic background and what it means for me	**.545***	**.557**

* Item deleted because it loaded on more than one factor and the discrepancy was <0.30. ** Item deleted because its deletion improved coefficient alpha.
[+] Reverse scored Item

Concerns. A CFA of these three subscales indicated a poor fit for the data [χ^2 (df 272, N=201) = 817.11, $p < 0.001$, GFI = 0.75, AGFI = 0.71, RMSEA = 0.10, CFI = 0.81, NNFI = 0.79, PNFI = 0.67, PGFI = 0.63]. A unidimensional model also resulted in poor fit [χ^2 (df 275, N=201) = 1241.48, $p < 0.001$, GFI = 0.67, AGFI = 0.61, RMSEA = 0.13, CFI = 0.72, NNFI = 0.70, PNFI = 0.61, PGFI = 0.57]. PAF analyses yielded two factors with eigenvalues greater than 1.0, each accounting for 3% or more of the explained variance. The two forced factor solution was found to be more conceptually meaningful than the one forced factor solution. Item loadings for the first factor ranged from 0.534 to 0.798. This factor accounted for 44.58% of the explained variance and appeared to be a measure of appraisal of discrimination. All items of the Discrimination Concerns scale and five items from the Academic Concerns scale loaded on this factor. Three items from the Academic Concerns Scale also loaded on the second factor and the discrepancy between item loadings ranged from 0.13 to 0.17, thus, they were deleted. The reliability coefficient for this scale was 0.90. Item loadings for the second factor ranged from 0.537 to 0.713. This factor accounted for 7.47% of the explained variance and appeared to be a measure of appraisal of campus culture. Four of the ten items from the Academic Concerns scale and eight of the Ethnic-Non Ethnic Group Concerns loaded on this factor. One item from the Academic Concerns scale was deleted because it loaded on both factors and the discrepancy between loadings was 0.14. Reliability analyses for this scale improved from 0.893 to 0.894 after removing one item from the Ethnic-Non Ethnic Concerns scale. Furthermore, deleting this item could be justified on theoretical grounds. The resulting two scales Appraisal of Discrimination and Appraisal of Campus Culture

are represented by MSSS1 and MSSS2 in Table 14 and Figure 11. High scores on each of these scales are indicative of more experiences of minority status stress

Social, Attitudinal, Familial and Environmental (S.A.F.E.) Acculturation Stress Scale (Mena et al., 1987). The S.A.F.E. was used to assess stress arising from the process of acculturation in four broad areas: (1) pressure to assimilate and feeling impeded by cultural barriers, (2) stress that arises from separation from family, friends, and culture, (3) the quality of immediate interpersonal relationships, being sociable, and making friends, and (4) conflicts between personal and family values, expectations. The literature reports a four-factor solution (Fuertes & Westbrook, 1996). These factors are: Environmental, Attitudinal, Social, and Familial. CFAs of the four-factor and one-factor solutions indicated a poor fit [Four-factor solution; χ^2 (df 183, N=201) = 538.00, $p <$ 0.001, GFI = 0.80, AGFI = 0.74, RMSEA = 0.10, CFI = 0.81, NNFI = 0.78, PNFI = 0.64, PGFI = 0.63; One-factor solution; χ^2 (df 189, N=201) = 740.47, $p < 0.001$, GFI = 0.74, AGFI = 0.68, RMSEA = 0.12, CFI = 0.72, NNFI = 0.69, PNFI = 0.58, PGFI = 0.60]. PAF analyses yielded five factors with eigenvalues greater than 1.0 accounting for 3% or more of the explained variance. Only two factors met the criteria outlined above for appropriate scales. Subsequent forced factor solutions revealed that the two forced factor solution was more conceptually meaningful than the one factor solution. Item loadings for the first factor ranged from 0.509 to 0.799. This factor accounted for 33.88% of the explained variance and appeared to be a measure of alienation due to cultural barriers. Six items from the Environmental scale loaded on this factor. However, one item was deleted because it also loaded on the second factor and the discrepancy between loadings was 0.03. The reliability coefficient for this scale was 0.88. Item loadings for the second

Table 14. Minority Status Stress Scale (MSSS)

Scale 1:	Appraisal of Discrimination	Factors	
Alpha = 0.91 (8 items)		1	2
MSSS22	Being discriminated against	**.798**	.130
MSSS23	Anglo people expecting me to be a certain way b/c of my ethnicity (stereotyping)	**.797**	.261
MSSS21	Being treated rudely or unfairly because of my ethnicity	**.789**	.124
MSSS25	Having to "prove" my abilities to others (e.g., work twice as hard)	**.738**	.280
MSSS24	Others lacking respect for people of my ethnic group	**.733**	.322
MSSS8	Anglo students/faculty expecting poor academic performance from students of my ethnic group	**.611**	.372
MSSS10	Pressure that what "I do is representative of my ethnic group's abilities, behaviors, etc.	**.536**	.382
MSSS3	Racist policies and practices at this university	**.534**	.397
Items deleted:			
MSSS6	Seeing members of my ethnic group doing low-status jobs and Anglos are in high-status jobs	**.572***	**.439**
MSSS9	Tense relationships between Anglos and minorities at this university	**.568***	**.407**
MSSS7	Attitudes/treatment of faculty toward students of my ethnic group	**.561***	**.444**
Scale 2:	Appraisal of Campus Culture	Factors	
Alpha = 0. 89 (11 items)		1	2
MSSS13	Anglo-oriented campus culture	.269	**.713**
MSSS2	Few students of my ethnic group in my classes	.360	**.702**
MSSS5	Few courses involving issues relevant to my ethnic group	.377	**.671**
MSSS1	Not enough professors of my ethnic group	.345	**.638**
MSSS15	Having to live around mostly Anglo people	.348	**.601**
MSSS17	Maintaining my ethnic identity while attending this university	.393	**.549**
MSSS12	Relationships between different ethnic groups	.064	**.530**
MSSS14	Lack of unity/supportiveness among members of my ethnic group at this university	.335	**.526**
MSSS16	Having to always be aware of what Anglo people might do	.365	**.510**
MSSS19	Wealthy campus culture	.274	**.465**
MSSS18	Relationships between males and females of my ethnic group (available dating partners)	.328	**.461**
Items deleted:			
MSSS4	This university lacking concern and support for the needs of students of my ethnic group	**.476**	**.612***
MSSS11	Having Anglo friends	.031	**.437****

* Item deleted because it loaded on more than one factor and the discrepancy was <0.30. ** Item deleted because its deletion improved coefficient alpha

factor ranged from 0.419 to 0.668. This factor accounted for 8.69% of the explained variance and appeared to be a measure of interpersonal stress. Items that loaded on this factor included: 4 from the Environmental, 4 from the Attitudinal, 1 from the Social, and 1 from the Familial scale. Three items from the Environmental scale were deleted because they loaded on both factors and the discrepancy between loadings ranged from 0.01 to 0.10. The reliability for this scale was 0.77. The resulting two scales, Alienation due Cultural Barriers and Interpersonal Stress are represented by SAFE1 and SAFE2 in Table 15 and Figure 11. High scores on both scales indicate greater experience of acculturative stress.

Coping

The Brief COPE Inventory (Carver, 1997). The Brief COPE was used to assess coping responses to minority status stress and/or acculturative stress. Carver (1997) reported 14 subscales each with two items. Lee and Liu (2001) reported two subscales COPE-Direct and COPE-Indirect. A CFA of the two-factor solution found by Lee and Liu (2001) indicated a poor fit for the data [χ^2 (df 208, N=201) = 748.45, $p < 0.001$, GFI = 0.75, AGFI = 0.69, RMSEA = 0.11, CFI = 0.60, NNFI = 0.56, PNFI = 0.48, PGFI = 0.61]. A unidimensional model did not improve fit [χ^2 (df 209, N=201) = 972.17, $p < 0.001$, GFI = 0.69, AGFI = 0.63, RMSEA = 0.14, CFI = 0.46, NNFI = 0.40, PNFI = 0.36, PGFI = 0.57]. The initial PAF yielded eight factors with eigenvalues greater than 1.0 that accounted for 3% or more of the explained variance. Only three of these factors met the criteria outlined above for appropriate scales. PAF analyses forcing factors ranging from one to three revealed that the three factor solution best reflected theoretical meaningfulness. Item loadings for the first factor ranged from 0.457 to 0.778.

Table 15. Social Attitudinal Familial & Environmental (S..A.F.E.) Acculturation Stress Scale

Scale 1:	Alienation due to Cultural Barriers	Factors	
Alpha = 0.87 (5 items)		1	2
SAFE1	Because I am different, I do not get enough credit for the work I do	**.799**	.251
SAFE2	I often feel ignored by people who are supposed to assist me	**.760**	.147
SAFE3	I often feel that people actively try to stop me from advancing	**.753**	.123
SAFE8	Because of my ethnic background, I feel that others often exclude me from participating in their activities	**.668**	.352
SAFE5	In looking for a job, I sometimes feel that my ethnicity is a limitation	**.615**	.371
Items deleted:			
SAFE4	Many people have stereotypes about my culture or ethnic group and treat me as if they are true	**.509***	**.476**
Scale 2:	Interpersonal Stress	Factors	
Alpha = 0. 77(7 items)		1	2
SAFE13	I often think about my cultural background	.167	**.668**
SAFE12	It bothers me that I cannot be with my family	-.084	**.667**
SAFE14	It is hard to express to my friends how I really feel	.297	**.575**
SAFE11	Loosening the ties with my cultural background is difficult	.302	**.549**
SAFE6	I feel uncomfortable when others make jokes about or put down people of my ethnic background	.129	**.473**
SAFE21	My family does not want me to move away but I would like to	.185	**.452**
SAFE18	I don't feel at home	.372	**.419**
Items deleted:			
SAFE7	I have more barriers to overcome than most people	**.450**	**.548***
SAFE9	It bothers me when people pressure me to assimilate	**.422**	**.457***
SAFE10	People look down upon me if I practice customs of my culture	**.437**	**.447***

* Item deleted because it loaded on more than one factor and the discrepancy was <0.30. ** Item deleted because its deletion improved coefficient alpha.

This factor accounted for 20.81% of the explained variance and appeared to be a measure of active coping. Eight items from the COPE-Direct scale loaded on this factor. Reliability analyses produced an alpha coefficient from 0.82. Item loadings for the second factor ranged from 0.768 to 0.821. This factor accounted for 12.89% of the explained variance and appeared to be a measure of seeking support. Two items from the COPE-Direct scale and two items deleted from the COPE-Indirect scale by Lee and Liu (2001) loaded on this factor. The alpha coefficient for this scale was 0.88. Item loadings for the third factor ranged from 0.434 to 0.581. The third factor accounted for 7.14% of the explained variance and appeared to be a measure of passive coping. Seven items from the COPE-Indirect scale and two items deleted from the COPE-Indirect scale by Lee and Liu (2001) loaded on this factor. Reliability analyses revealed that the reliability increased from 0.75 to 0.76 when one item from the COPE-Indirect scale was deleted. The resulting three scales, Active Coping, Seeking Support, and Passive Coping are represented by BCOPE1, BCOPE2, and BCOPE3, respectively (see Table 16 and Figure 11). High scores on these scales indicate high utilization of direct coping strategies (e.g., Active Coping, Seeking Support) and high utilization of indirect coping strategies (e.g., Passive Coping).

Problem-Focused Style of Coping (PF-SOC; Heppner et al., 1995). The PF-SOC was used to assess stable dispositional coping styles that tap general coping strategies. The literature reported three subscales Reflective Style, Suppressive Style, and Reactive Style. A CFA of the three-factor solution indicated a poor fit to the data [Three Factor; χ^2 (df 132, N=201) = 439.91, $p < 0.001$, GFI = 0.80, AGFI = 0.75, RMSEA = 0.11, CFI = 0.76, NNFI = 0.72, PNFI = 0.60, PGFI = 0.62] A CFA of a one-factor solution produced

Table 16. The Brief COPE Inventory (Brief COPE).

Scale 1	Active Coping		Factors	
Alpha = 0.82 (8 items)		1	2	3
BCOPE14	I try to come up with a strategy about what to do	**.778**	.067	.052
BCOPE25	I think hard about what steps to take	**.668**	.095	.066
BCOPE7	I take action to try to make the situation better	**.607**	.216	-.140
BCOPE17	I look for something good in what is happening	**.564**	.293	-.044
BCOPE2	I concentrate my efforts on doing something about the situation I'm in	**.519**	.231	.033
BCOPE12	I try to see it in a different light, to make it seem more positive	**.500**	.337	.037
BCOPE24	I learn to live with it	**.465**	.096	.109
BCOPE20	I accept the reality of the fact that it has happened	**.457**	.253	-.084
Scale 2	Seeking Support		Factors	
Alpha = 0.88 (4 items)		1	2	3
BCOPE23	I try to get advice or help from other people about what to do	.219	**.821**	-.053
BCOPE5	I get emotional support from others	.169	**.771**	-.050
BCOPE15	I get comfort and understanding from someone	.208	**.769**	-.028
BCOPE10	I get help and advice from other people	.198	**.768**	-.058
Scale 3	Passive Coping		Factors	
Alpha = 0.76 (8 items)		1	2	3
BCOPE26	I blame myself for things that happened	.137	-.209	**.581**
BCOPE6	I give up trying to deal with it	-.235	.021	**.579**
BCOPE3	I say to myself "this isn't real"	-.016	.009	**.547**
BCOPE11	I use alcohol or other drugs to help me get through it	-.063	.025	**.536**
BCOPE13	I criticize myself	.215	-.075	**.534**
BCOPE8	I refuse to believe that it has happened	-.043	-.072	**.499**
BCOPE16	I give up the attempt to cope	-.092	-.044	**.486**
BCOPE4	I used alcohol or other drugs to make myself feel better	-.002	.037	**.473**
Items deleted:				
BCOPE19	I do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping	.134	.265	**.434****

** Item deleted because its deletion improved coefficient alpha.

poorer fit indices [χ^2 (df 135, N=201) = 5148.74, $p < 0.001$, GFI = 0.54, AGFI =0.41, RMSEA = 0.23, CFI = 0.40, NNFI = 0.32, PNFI = 0.33, PGFI = 0.43]. The initial PAF yielded four factors with eigenvalues greater than 1.0 each accounting for 3% or more of the explained variance. Subsequent forced factor solutions revealed that the two forced factor solution was the most theoretically meaningful. Item loadings for the first factor ranged from 0.598 to 0.754. This factor accounted for 22.69% of the explained variance and appeared to be a measure of assertive coping. All items of the Reflective Style scale loaded on this factor. The reliability of this scale was found to be 0.85. Item loadings for the second factor ranged from 0.415 to 0.678. This factor accounted for 22.04% of the explained variance and appeared to be a measure of avoidant coping. All items from the Suppressive Scale and five items from the Reactive scale loaded on this factor. The reliability of this scale was 0.72. The resulting two scales Assertive Coping and Avoidant Coping are represented by PF-SOC1 and PF-SOC2 in Table 17 and Figure 11. High scores on PF-SOC1 indicated high utilization of direct coping strategies and high scores on PF-SOC2 represented high utilization of indirect coping strategies.

Perceived Social Support

Perceived Social Support from Family (PSS-FA; Procidano & Heller, 1983). The PSS-FA was used to measure the extent to which needs for support is met by family. Factor analyses have revealed that the PSS-FA is composed of a single factor. A CFA of the one-factor solution revealed poor fit [χ^2 (df 170, N=201) = 1268.68, $p < 0.001$, GFI = 0.61, AGFI = 0.52, RMSEA = 0.21, CFI = 0.64, NNFI = 0.61, PNFI = 0.54, PGFI = 0.50]. Initial PAF analyses yielded three factors with eigenvalues greater than 1.0 accounted for 61.99% of the explained variance. Only two of these factors met the

Table 17. Problem-Focused Style of Coping (PF-SOC)

Scale 1:	Assertive Coping	Factors	
Alpha = 0.85 (7 items)		1	2
PFSOC11	I think ahead, which enables me to anticipate and prepare for problems before they rise	**.754**	-.056
PFSOC6	I consider the short-term and long term consequences of each possible solution to the problems	**.723**	054
PFSOC12	I think ahead, which enables me to anticipate and prepare for problems before they rise	**.699**	-.017
PFSOC3	I think about ways that I solved similar problems in the past	**.673**	.019
PFSOC4	I identify the causes of my emotions which helps me identify and solve the problems	**.622**	-.089
PFSOC17	I have alternate plans for solving the problems in case my first attempt does not work	**.599**	-.081
PFSOC14	I get in touch with my feelings to identify and work on the problems	**.598**	.021
Scale 2:	Avoidant Coping	Factors	
Alpha = 0. 82(10 items)		1	2
PFSOC10	I spend my time doing unrelated chores and activities instead of acting on the problems	-.092	**.678**
PFSOC9	My old feelings get in the way of solving current problems	.058	**.675**
PFSOC8	I continue to feel uneasy about the problems, which tells me I need to do some more work	.299	**.613**
PFSOC7	I get preoccupied thinking about the problems and overemphasize some parts of them	.319	**.611**
PFSOC15	I act too quickly, which makes problems worse	-.124	**.592**
PFSOC16	I have a difficult time concentrating on the problems (i.e., my mind wanders).	-.105	**.583**
PFSOC1	I am not really sure what I think or believe about the problems	-.042	**.511**
PFSOC5	I feel so frustrated I just give up doing any work on the problems at all	-.216	**.497**
PFSOC13	I misread another person's motives and feelings without checking with the person to see if my conclusions are correct	.121	**.466**
PFSOC18	I avoid even thinking about the problems	-.226	**.415**

criteria outlined above for appropriate scales. PAF analyses forcing both one and two factors revealed that the two factor solution best reflected theoretical meaningfulness. Item loadings for the first factor ranged from 0.579 to 0.825. This factor consisted of 10 items accounting for 40.02% of the explained variance and appeared to be a measure of received family support. Reliability analyses of this scale produced an alpha coefficient of 0.91. Item loadings for the second factor ranged from 0.641 to 0.810. This factor contained 5 items accounting for 6.50% of the explained variance and appeared to be a measure of family intimacy. The alpha coefficient for this scale was 0.84. The resulting two scales, Received Family Support and Family Intimacy are represented by PSSFA1 and PSSF2, respectively (see Table 18 and Figure 11). High scores on these scales indicate high perceptions of support from family and high perception of family closeness.

Perceived Social Support from Friends (PSS-FR; Procidano & Heller, 1983). The PSS-FR was used to measure the extent to which needs for support is met by college peers. Factor analyses have revealed that the PSS-FR is composed of a single factor. A CFA of the one-factor solution revealed poor fit [χ^2 (df 170, N=201) = 1073.44, p = 0.001, GFI = 0.65, AGFI = 0.57, RMSEA = 0.16, CFI = 0.65, NNFI = 0.61, PNFI = 0.54, PGFI = 0.53]. Initial PAF analyses yielded three factors with eigenvalues greater than 1.0, each accounting for 3% or more of the explained variance. PAF analyses forcing factors ranging from one to three revealed that the three factor solution best reflected theoretical meaningfulness. Item loadings for the first factor ranged from 0.539 to 0.765. This factor accounted for 39.49% of the explained variance and appeared to be a measure of received peer support. Four items were deleted because they also loaded on the second factor and the discrepancy between loadings ranged from 0.13 to 0.20. Reliability

Table 18. Perceived Social Support from Family (PSS-FA).

Scale 1:	Received Family Support	Factors	
Alpha = 0.91 (10 items)		1	3
PSSFA13	Members of my family are good at helping me solve problems	**.825**	.052
PSSFA1	My family gives me the moral support I need	**.746**	.021
PSSFA8	I rely on my family for emotional support	**.731**	.038
PSSFA10	My family and I are open about what we think about things	**.702**	-.020
PSSFA11	My family is sensitive to my personal needs	**.678**	.049
PSSFA14	I have a deep sharing relationship with a number of members of my family	**.668**	.060
PSSFA2	I get good ideas about how to do things from my family	**.630**	.060
PSSFA6	Members of my family share many of my interests	**.598**	-.016
PSSFA9	There is a member of my family I could go to if I were just feeling down, without feeling funny about it later	**.585**	.046
PSSFA5	My family enjoys hearing about what I think	**.579**	.143
Items deleted:			
PSSFA15	Members of my family get good ideas about how to do things or make things for me	**.664***	**.441****
Scale 2:	Family Intimacy	Factors	
Alpha = 0. 84(5 items)		1	3
PSSFA3^{+}	Most other people are closer to their family than I am	.065	**.810**
PSSFA19^{+}	I don't have a relationship with a member of my family that is as close as other people's relationships with family members	.016	**.750**
PSSFA4^{+}	When I confide in the members of my family who are closest to me, I get the idea that it makes them uncomfortable	.051	**.689**
PSSFA20^{+}	I wish my family were much different	.025	**.688**
PSSFA16^{+}	When I confide in member of my family, it makes me uncomfortable	.041	**.641**

* Item deleted because it loaded on more than one factor and the discrepancy was <0.30. ** This item loaded on factor 1 & 2. $^{+}$ Reverse scored Item

analyses of this scale produced an alpha coefficient of 0.89. Item loadings for the second factor ranged from 0.638 to 0.799. This factor contained 4 items accounting for 13.95% of the explained variance and appeared to be a measure of support provided to friends. The alpha coefficient for this scale was 0.87. Item loadings for the third factor ranged from 0.565 to 0.756. This factor contained 5 items accounting for 6.95% of the explained variance and appeared to be a measure of peer closeness. The alpha coefficient for this scale was 0.82. The resulting three scales, Received Peer Support, Providing Peer Support, and Peer Closeness are represented by PSSFR1, PSSFR2, and PSSFR3 respectively (see Table 19 and Figure 11). High scores on PSSFR1 and PSSFR2 indicate high perceptions of receiving and providing support to peers. High scores on PSSFR3 indicate high perceptions of peer closeness.

Perceived Social Support from University Personnel (PSS-UP). The PSS-UP was used to measure the extent to which needs for support are met by university personnel. A CFA of a one-factor solution revealed poor fit [χ^2 (df 170, N=201) = 822.71, p = 0.001, GFI = 0.71, AGFI = 0.64, RMSEA = 0.14, CFI = 0.68, NNFI = 0.64, PNFI = 0.56, PGFI = 0.57]. Initial PAF analyses yielded four factors with eigenvalues greater than 1.0, each accounting for 3% or more of the explained variance. PAF analyses forcing factors ranging from one to four revealed that the three factor solution best reflected theoretical meaningfulness. Item loadings for the first factor ranged from 0.503 to 0.838. This factor accounted for 34.62% of the explained variance and appeared to be a measure of providing support to university personnel. One item was deleted because it also loaded on the second factor and the discrepancy between loadings was 0.03. Reliability analyses of this scale produced an alpha coefficient of 0.87. Item loadings for the second factor

Table 19. Perceived Social Support from Friends (PSS-FR).

Scale 1	Received Peer Support		Factors	
Alpha = 0.89 (7 items)		1	2	3
PSSFR2	I get good ideas about how to do things or make things from my peers	**.765**	.063	.062
PSSFR1	My peers give me the moral support I need	**.755**	.143	.027
PSSFR8	I rely on my peers from emotional	**.728**	.304	.027
PSSFR13	Members of my peer group are good at helping me solve problems	**.720**	.277	.081
PSSFR6	Members of my peer group share many of my interests	**.622**	.264	-.018
PSSFR11	My peers are sensitive to my personal needs	**.616**	.225	.025
PSSFR9	There is a member of my peer group I could go to if I were just feeling down without feeling funny about it later	**.592**	.355	.011
Items deleted:				
PSSFR14	I have a deep sharing relationship with a number of members in my peer group	**.645***	**.438**	.102
PSSFR15	Members of my peer group get good ideas about how to do things or make things for me	**.604***	**.444**	.094
PSSFR10	My peers and I are very open about what we thing about things	**.554***	**.425**	.065
PSSFR5	My peers enjoy hearing about what I think	**.539***	**.400**	-.004
Scale 2	Providing Peer Support		Factors	
Alpha = 0.87 (4 items)		1	2	3
PSSFR12	Members of my peer group come to me for emotional support	.335	**.799**	.078
PSSFR18	I think that my peers feel that I'm good at helping them solve problems	.253	**.713**	.063
PSSFR7	Certain members of my peer group come to me when they have problems or need advice	.369	**.672**	.033
PSSFR17	Members of my peer group seek me out for companionship	.376	**.638**	.044
Scale 3	Peer Closeness		Factors	
Alpha = 0.81 (5 items)		1	2	3
PSSFR3+	Most other people are closer to their peers than I am	.010	-.006	**.756**
PSSFR19+	I don't have a relationship with a member of my peer group that is as close as other people's relationships with peer group members	.095	.025	**.719**
PSSFR20+	I wish my peers were much different	.022	-.045	**.686**
PSSFR4+	When I confide in the members of my peer group who are closets to me, I get the idea that it makes them uncomfortable	.056	.153	**.656**
PSSFR16+	When I confide in member of my peer group, it makes me uncomfortable	-.007	.057	**.565**

* Item deleted because it loaded on more than one factor and the discrepancy was <0.30. + Reverse scored Item

ranged from 0.488 to 0.717. This factor accounted for 10.82% of the explained variance and appeared to be a measure of received support from university personnel. One item also loaded on factor one and the discrepancy between loadings was 0.13. This item was deleted. The alpha coefficient for this scale was 0.85. Item loadings for the third factor ranged from 0.454 to 0.645. This factor accounted for 8.77% of the explained variance and appeared to be a measure of students' relationship to university personnel. Reliability analyses of this scale indicated that the alpha coefficient would increase from 0.65 to 0.66 if one item was deleted. The resulting three scales, Providing University Personnel Support, Received University Personnel Support, and Relationship to University Personnel are represented by PSSUP1, PSSUP2, and PSSUP3 respectively (see Table 20 and Figure 11). High scores on PSSUP1 and PSSUP2 indicate high perceptions of provided and received support from university personnel. High scores on PSSUP3 indicate high closeness to university personnel.

Mental Health

The DSM Scale for Depression-26 (DSD-26; Roberts et al., 1995). The DSD-26 was used to assess symptoms of depression. A CFA of this one factor depression measure was poor [χ^2 (df 299, N=201) = 1006.85, $p < 0.001$, GFI = 0.72, AGFI = 0.67, RMSEA = 0.11, CFI = 0.76, NNFI = 0.74, PNFI = 0.62, PGFI = 0.61]. The initial PAF yielded six factors with eigenvalues greater than 1.0 that accounted for 3% or more of the explained variance. Only three of these factors met the criteria outlined above for appropriate scales. PAF analyses forcing factors ranging from one to three revealed that the three factor solution best reflected theoretical meaningfulness. Item loadings for the first factor ranged from 0.440 to 0.724. This factor accounted for 37.53% of the

Table 20. Perceived Social Support from University Personnel (PSS-UP).

Scale 1	Providing University Personnel Support		Factors	
Alpha = 0.87 (7 items)		1	2	3
PSSUP17	Members of the university personnel seek me out for companionship	**.838**	.165	.022
PSSUP12	Members of the university personnel come to me for emotional support	**.689**	.125	.001
PSSUP14	I have a deep sharing relationship with a number of members of the university personnel	**.675**	.363	-.095
PSSUP7	Certain university personnel share many of my interests	**.638**	.133	.052
PSSUP8	I rely on university personnel for emotional support	**.637**	.371	.010
PSSUP18	I think that the university personnel feel that I'm good at helping them solve problems	**.605**	.343	.091
PSSUP9	There is a member of the university personnel I could go to if I were just feeling down without feeling funny about it later	**.503**	.372	.015
Items deleted:				
PSSUP15	Members of the university personnel get good ideas about how to do things or make things for me	**.522***	**.493**	.038
Scale 2	Received University Personnel Support		Factors	
Alpha = 0.85 (6 items)		1	2	3
PSSUP2	I get good ideas about how to do things or make things from university personnel	.093	**.703**	.090
PSSUP5	University personnel enjoy hearing about what I think	.191	**.697**	.046
PSSUP1	University personnel give me the moral support I need	.212	**.685**	.061
PSSUP11	University personnel are sensitive to my personal needs	.383	**.616**	-.008
PSSUP6	Members of the university personnel share many of my interests	.243	**.488**	.056
Items deleted:				
PSSUP10	University personnel and I are very open about what we think about things	**.450**	**.584***	-.001
Scale 3	Relationship to University Personnel		Factors	
Alpha = 0.66 (3 items)		1	2	3
PSSUP16^{+}	When I confide in members of the university personnel, it makes me uncomfortable	.067	-.089	**.645**
PSSUP20^{+}	I wish the university personnel were much different	.035	-.050	**.620**
PSSUP4^{+}	When I confide in members of the university personnel who are closest to me, I get the idea that it makes then uncomfortable	.124	.055	**.574**
Items deleted:				
PSSUP19^{+}	I don't have a relationship with a member of the university personnel that is as close as other people's relationships with university personnel	-.080	.070	**.454****

*Item deleted because it loaded on more than one factor and the discrepancy was <0.30. $^{+}$ Reverse scored Item ** Item deleted because it improved coefficient alpha.

explained variance and appeared to be a measure of emotional depressive symptoms. Reliability analyses of this scale produced an alpha coefficient of 0.88. Item loadings for the second factor ranged from 0.449 to 0.799. The second factor accounted for 8.55% of the explained variance and appeared to be a measure of physical symptoms related to depression. Two items that also loaded on factor 1 were deleted. The discrepancy between factor loadings for these two items was 0.09 and 0.12. The alpha coefficient for this scale was 0.84. Item loadings for the third factor ranged from 0.539 to 0.840. This factor accounted for 4.87% of the explained variance and appeared to be a measure of suicidal symptoms. One item also loaded on factor 1 and was deleted. The discrepancy between factor loadings for this item was 0.08. Reliability analyses for this scale produced an alpha coefficient of 0.82. The resulting three scales, Emotional Depressive Symptoms, Physical Depressive Symptoms, and Suicidal Symptoms are represented by DSD1, DSD2, and DSD3, respectively (see Table 21 and Figure 11). High scores on these scales indicate high level of emotional, physical, and suicidal depressive symptoms.

Satisfaction with Life Scale (SWLS; Diener et al., 1985). The SWLS was used to assess life satisfaction. A CFA of this one-factor measure of life satisfaction was good [χ^2 (df 5, N=201) = 14.48, $p < 0.001$, GFI = 0.97, AGFI = 0.92, RMSEA = 0.10, CFI = 0.98, NNFI = 0.97, PNFI = 0.49, PGFI = 0.32]. This factor structure was accepted given similar reported results. For the current sample, the alpha reliability was 0.89. This scale is represented by SWLS in Figure 11 and high scores indicate high levels of life satisfaction.

Table 21. The DSM Scale for Depression-26 (DSD-26).

Scale 1	Emotional Depressive Symptoms	Factors		
Alpha = 0.88 (10 items)		1	2	3
DSD16	Have you been down on yourself more than usual, when you felt that you couldn't do anything	**.724**	.301	.258
DSD15	Have you felt less good about yourself than usual and blamed yourself a lot for things that happened in the past	**.654**	.287	.271
DSD1	Have you been very sad	**.568**	.278	.244
DSD18	Have you felt like you were about to cry or were in tears	**.555**	.273	.254
DSD17	Have you felt bad about the way you look	**.533**	.185	.184
DSD2	Have you been grouchy or irritable, or in a bad mood, so that even little things would make you mad	**.532**	.284	.129
DSD21	Have you felt that things never seem to work out all right for you	**.517**	.378	.287
DSD5	Have you felt like not eating	**.469**	.158	.134
DSD3	Were there times when you just weren't interested in anything and felt bored or just sat around most of the time	**.462**	.394	.261
DSD7	Have you had more trouble sleeping than usual (falling asleep or staying asleep or waking up too early)	**.440**	.229	.149
Scale 2	Physical Depressive Symptoms	Factors		
Alpha = 0.84 (7 items)		1	2	3
DSD13	Have you felt more tired than usual, so that you sat around and didn't do much of anything	.205	**.799**	.153
DSD14	Have you felt like you had much less energy than usual, so that it was a big effort to do anything	.290	**.699**	.160
DSD8	Have you slept a lot more than usual	.056	**.641**	.060
DSD20	Have you been unable to concentrate or think as clearly or as quickly as usual	.389	**.560**	.049
DSD9	Have you talked or moved around a lot less than usual	.259	**.522**	.097
DSD22	Were there times it was harder for you to make up your mind about things or to make decisions	.376	**.469**	.220
DSD4	Were there times when you just weren't interested in anything and felt bored or just sat around most of the time	.361	**.449**	.200

Table Continues

Table Continued

Items deleted:				
DSD11	Have you been so down that it was hard for you to do your schoolwork or work	**.426**	**.545***	.193
DSD19	Have you had more trouble than usual paying attention to your schoolwork or work, or keeping your mind on other things you were doing	**.451**	**.545***	.036
Scale 3	Suicidal Symptoms		Factors	
Alpha = 0.82 (3 items)		1	2	3
DSD25	Did you wish you were dead	.199	.022	**.840**
DSD24	Have you thought more than usual about death or dying	.214	.160	**.780**
DSD26	Have you thought about suicide or killing yourself	.248	.058	**.723**
Items deleted:				
DSD23	Have you felt that life was hopeless and there was nothing good for you in the future	**.456**	.225	**.539***

*Item deleted because it loaded on more than one factor and the discrepancy was <0.30.

Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). The SHS was used to measure happiness. A CFA of this one-factor measure of happiness was excellent [χ^2 (df 2, N=201) = 0.85, p = 0.65, GFI = 0.99, AGFI = 0.99, RMSEA = 0.00, CFI = 1.00, NNFI = 1.01, PNFI = 0.33, PGFI = 0.20]. Reliability of this scale for this current sample was also good (α = 0.88). This scale is represented by SWLS in Figure 11 and high scores reflect greater happiness.

Phase Four. Phases 1-3 produced the measurement model (outlines the relationships between the observed variables (measures) and latent variables (theoretical constructs)) which were used in Phase 4 to test the hypothesized relationships between the constructs in the stress-mental health structural model (outlines the hypothesized relationships between the latent variables) and the fit of the data to the model (Hoyle, 1995). Structural Equation Modeling (SEM) analyses of the intercorrelation matrix of the scales produced via EFA (see Table 22) were conducted using LISREL 8.3. Maximum likelihood (ML) estimation was employed to yield optimal parameter estimates.

The hypotheses stated above were assessed by examining direct and indirect effects. Each hypothesis was deemed true if the proposed relations were statistically significant and in the predicted direction. The overall fit of the adapted stress-mental health model was determined by assessing, the values of the absolute, relative, and parsimonious fit indices described above. Please refer to the structural and measurement model (Figure 11) for the factor structures, measures, constructs, and pathways in the adapted model.

Table 22. Intercorrelations and Reliability Coefficients for Scales Produced by Exploratory Factor Analysis

	ARSMA1	ARSMA2	MEIM1	MEIM2	PSSFA1	PSSFA2	PSSFR1	PSSFR2	PSSFR3	PSSUP1	PSSUP2	PSSUP3	MSSS1	MSSS2	SAFE1	SAFE2	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC2	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.91																									
ARSMA2	-0.16	0.80																								
MEIM3	0.64	-0.17	0.83																							
MEIM2	0.52	-0.06	0.57	0.72																						
PSSFA1	0.10	0.16	0.14	0.13	0.91																					
PSSFA2	0.07	-0.02	0.08	0.02	0.09	0.84																				
PSSFR1	-0.03	0.07	0.05	-0.02	0.31	0.13	0.89																			
PSSFR2	0.10	-0.03	0.08	0.07	0.32	0.05	0.61	0.87																		
PSSFR3	-0.11	-0.08	-0.13	-0.14	0.03	0.15	0.09	0.12	0.81																	
PSSUP1	0.07	-0.14	0.04	0.06	0.04	-0.03	0.15	0.11	0.01	0.87																
PSSUP2	0.00	0.00	-0.02	0.07	0.18	-0.04	0.27	0.29	-0.06	0.58	0.85															
PSSUP3	-0.10	-0.09	-0.12	-0.11	0.02	0.12	0.03	-0.01	0.31	0.08	0.03	0.66														
MSSS1	0.27	-0.23	0.32	0.24	-0.12	0.06	-0.03	0.00	0.04	0.03	-0.15	0.03	0.91													
MSSS2	0.36	-0.19	0.34	0.37	-0.10	-0.05	-0.05	0.01	0.07	0.05	-0.11	-0.07	0.69	0.89												
SAFE1	0.13	-0.22	0.08	0.11	-0.24	0.05	-0.04	-0.04	0.02	0.10	-0.15	-0.04	0.58	0.57	0.87											
SAFE2	0.30	-0.16	0.30	0.25	-0.13	0.05	-0.14	-0.02	0.02	0.04	-0.17	-0.11	0.54	0.60	0.51	0.77										
BCOPE1	0.21	0.02	0.23	0.25	0.19	0.05	0.18	0.33	-0.04	0.14	0.20	-0.14	0.07	0.07	0.00	0.16	0.82									
BCOPE2	0.01	0.05	0.14	0.09	0.40	0.05	0.44	0.34	0.02	0.05	0.15	-0.03	-0.06	-0.04	-0.12	-0.04	0.47	0.88								
PFSOC1	0.11	0.01	0.10	0.21	0.22	-0.04	0.07	0.23	-0.04	0.22	0.30	-0.07	0.06	0.03	-0.05	0.02	0.63	0.37	0.85							
BCOPE3	-0.04	-0.13	0.02	0.00	-0.25	-0.03	-0.11	-0.12	0.02	-0.06	-0.13	0.16	0.18	0.20	0.27	0.38	-0.01	-0.11	-0.12	0.76						
PFSOC2	-0.04	-0.04	-0.07	0.04	-0.13	0.05	-0.04	-0.01	0.00	0.03	-0.15	0.02	0.13	0.18	0.28	0.26	0.00	0.05	-0.02	0.53	0.82					
DSD1	0.06	-0.05	0.05	0.08	-0.19	0.02	-0.11	-0.12	0.05	-0.08	-0.28	0.08	0.17	0.22	0.18	0.30	-0.04	-0.02	-0.08	0.55	0.50	0.88				
DSD2	0.08	-0.07	0.10	0.13	-0.25	-0.03	-0.10	-0.09	0.01	-0.08	-0.33	0.03	0.19	0.24	0.15	0.32	-0.04	-0.07	-0.09	0.44	0.43	0.68	0.84			
DSD3	-0.01	-0.10	-0.13	0.05	-0.25	-0.02	-0.15	-0.08	0.03	-0.03	-0.07	0.01	0.11	0.14	0.14	0.20	-0.04	-0.11	0.04	0.30	0.18	0.52	0.34	0.82		
SWLF	0.04	0.06	0.03	-0.05	0.40	0.00	0.23	0.31	-0.06	0.14	0.35	-0.19	-0.18	-0.17	-0.20	-0.15	0.17	0.21	0.13	-0.38	-0.30	-0.53	-0.47	-0.32	0.89	
SHS	0.14	0.04	0.06	-0.01	0.39	0.01	0.19	0.29	-0.07	0.11	0.26	-0.04	-0.20	-0.19	-0.13	-0.22	0.15	0.14	0.08	-0.47	-0.29	-0.56	-0.48	-0.30	0.66	0.88
Mean	37.32	11.83	16.51	8.60	40.01	20.10	26.61	16.28	19.19	12.68	16.79	9.75	15.36	17.37	5.93	12.32	23.09	10.95	22.08	13.44	24.53	19.64	13.55	3.51	24.17	20.50
SD	11.34	3.15	3.11	2.20	8.41	4.88	5.72	3.10	4.42	5.66	4.81	2.65	9.26	8.42	4.35	6.38	4.68	3.37	5.75	3.82	6.73	6.01	4.37	1.21	6.57	4.60

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; ARSMA2 = Association with Anglos; MEIM1 = Recognition Of Ethnicity; MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFA2 = Family Intimacy; PSSFR1 = Received Peer Support; PSSFR2 = Providing Peer Support; PSSFR3 = Peer Closeness; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel; PSSUP3 = Relationship to University Personnel; MSSS1= Appraisal of Discrimination; MSSS2 = Appraisal of Campus Culture; SAFE1 = Alienation due to Cultural Barriers; SAFE2 = Interpersonal Stress; BCOPE1 = Active Coping; BCOPE2 = Seeking Support; BCOPE3 = Passive Coping; PFSOC1 = Assertive Coping; PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms; DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

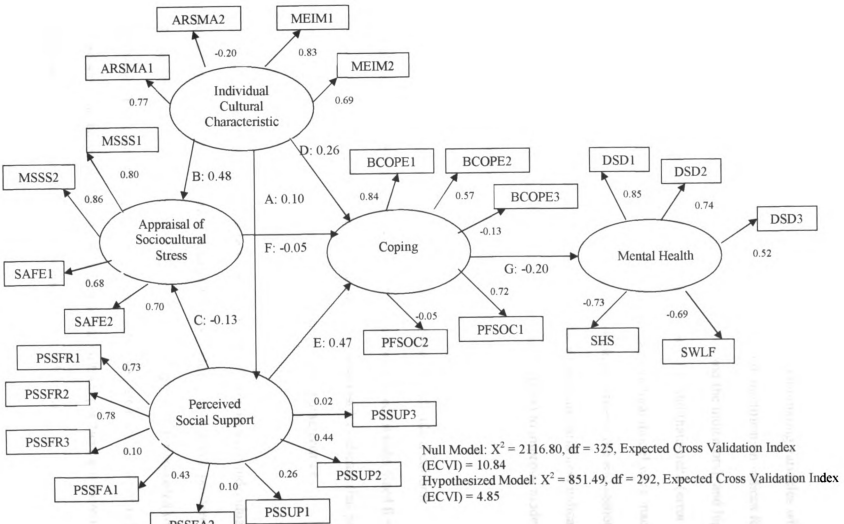

Figure 11. Adapted Model Results

For hypotheses found to be non-significant, LISREL output was examined to determine if changes needed to be made in the structural and measurement model. Thus, modifications to the measurement model were made by eliminating variables with poor relationships or poor residuals (measurement error), high modification indices for lambda-y (relationships between the latent constructs and the indicators), and high modification indices for theta-epsilon, theta-delta-epsilon, and theta-delta (error covariance between indicators). Modifications to the structural model were made if large modification indices and residuals for beta (relationships between the endogenous variables) and or gamma (relationships between the exogenous variables) indicated that there are parameters that could be estimated (i.e., direct paths) to improve model fit.

Results of the Hypotheses

Hypothesis 1

A direct, significant positive relationship between individual cultural characteristics and perceived social support was not supported (standardized $\beta = 0.10$, $t = 1.04$, $p > 0.20$, two-tailed test; Path A, Figure 11). These results indicate that perceived social support is not directly related to individual cultural characteristics.

Hypothesis 2

A direct, significant negative relationship was not found between individual cultural characteristics and appraisal of sociocultural stress. However, a direct, positive relationship was found (standardized $\beta = 0.48$, $t = 5.54$, $p < 0.001$, two-tailed test; Path B, Figure 11). These findings suggest that respondents who are more involved in Latina/o culture and who have maintained the language and cultural practices are more likely to experience acculturative stress and/or minority status distress.

Hypothesis 3

As predicted, a direct, significant negative relationship was not demonstrated between perceived social support and appraisal of sociocultural stress (standardized β = -0.13, t = -1.47, p > 0.10, two-tailed test; Path C, Figure 11). These results indicate that respondents who perceived less formal and informal support were more likely to experience acculturative stress and/or minority status distress.

Hypothesis 4

As predicted a direct, significant positive relationship was demonstrated between individual cultural characteristics and coping (standardized β = 0.26, t = 2.70, p = < 0.01, two tailed test; Path D, Figure 11). The results indicate that respondents who have maintained Latina/o cultural practices and the Spanish language are more likely to utilize coping strategies.

Hypothesis 5

As predicted, a direct, significant positive relationship between perceived social support and coping was supported (standardized β = 0.47, t = 2.87, p < 0.01, two tailed test; Path E, Figure 11). These results indicate that respondents who perceive the availability of formal and informal social support are more likely to utilize coping strategies.

Hypothesis 6

A direct, significant negative relationship was not demonstrated between appraisal of sociocultural stress and coping ((standardized β = -0.05, t = -0.52, p > 0.20, two tailed test; Path F, Figure 11). In other words, the results indicate that respondents who

experience less acculturative stress and/or minority status distress are not more likely to utilize coping strategies.

Hypothesis 7

A direct, significant positive relationship between coping and mental health was not supported (standardized $\beta = -0.20$, $t = -2.34$ $p < 0.02$, two tailed test, Path G, Figure 11). These results suggest that respondents who utilize coping strategies were not more likely to experience higher levels of mental health.

Hypothesis 8

The indirect relationships hypothesized by Taylor and Aspinwall (1996); individual cultural characteristics to mental health ($\eta = -0.06$, $t = -1.93$, $p > .05$) and perceived social support to mental health ($\eta = -0.09$, $t = -1.85$, $p > .05$) were not supported. Participants who tended to be bicultural or highly acculturated were not more likely to utilize coping strategies and experience lower levels of mental health. Furthermore, participants who perceived social support were not more likely to utilize coping strategies and report lower levels of mental health.

Model 1: Results of the overall adapted Latina/o student stress-mental health model

This section presents the results of the overall fit of the adapted model and the results of the post hoc analyses on the structural and measurement model that were conducted to improve the overall fit of the model. SEM analyses indicated poor fit for the adapted model [χ^2 (df 292, N=201) = 851.49, $p < 0.001$, GFI = 0.75, AGFI = 0.70, RMSEA = 0.10, CFI = 0.70, NNFI = 0.66, PNFI = 0.54, PGFI = 0.63]. Not all of the relationships outlined in the proposed model were in the predicted direction (e. g., individual cultural characteristics to appraisal of cultural stress, coping to mental health)

and several relationships did not reach statistical significance (e.g., individual cultural characteristics to perceived social support, appraisal of cultural stress to coping). Furthermore, serious measurement problems were evident given the fact that not all factor loadings of each indicator to their respective latent variable were statistically significant (See Table 23 and Figure 11). As a result, several modifications to the measurement model were made to improve model fit.

Model 2

As stated above factor loadings of several indicators to their respective latent variable were not statistically significant. Two indicators (i.e., Passive Coping (BCOPE3) and Avoidant Coping (PFSOC2)) did not significantly load on the latent variable, Coping. The literature suggests that there are two broad but distinct coping strategies to reduce psychological distress. There are strategies designed to actively manage, resolve, or influence stressful demands through one's own efforts (e.g., problem solving, support seeking) and/or strategies designed to adjust to stressful demands by changing the self rather than the situation (e.g., accepting the situation, self-distraction; Cross, 1995). Cross (1995) refers to these distinct coping strategies as Direct Coping and Indirect Coping. In light of the research and non-significant factor loadings of the indicators, BCOPE3 and PFSOC2, the latent variable Coping was divided into two latent variables, Direct Coping and Indirect Coping. The BCOPE3 and PFSOC2 were designated as indicators of Indirect Coping while the remaining three indicators, BCOPE1 (Active Coping), BCOPE2 (Seeking Support) and PFSOC1 (Assertive Coping) were assigned to the latent variable, Direct Coping.

Table 23. Goodness of Fit Indices for Measurement and Structural Models

Model	N	X^2	df	$\Delta\chi^2$	Δdf	GFI	AGFI	RMSEA	CFI	NNFI	PNFI	PGFI
Model One	201	851.49*	292			.75	.70	.10	.70	.66	.54	.63
Model Two	201	508.32*	198			.81	.76	.09	.79	.76	.61	.64
Model Three	201	439.27*	200			.83	.79	.08	.85	.82	.66	.66
Model Four	201	241.67*	167			.90	.86	.05	.94	.93	.68	.65
Test of Moderators												
Gender												
Constrained Factor Loadings	201	402.92*	352			.87		.04	.95	.94	.66	1.32
Unconstrained Factor Loadings	201	383.79*	338	19.13	14	.87		.04	.95	.94	.64	1.27
Constrained Structural Paths	201	427.48*	358			.86		.04	.94	.93	.66	1.33
Unconstrained Structural Paths	201	414.41*	336	13.07	22	.86		.05	.93	.92	.63	1.25
SES												
Constrained Factor Loadings	201	390.58*	352			.89		.03	.94	.93	.65	1.35
Unconstrained Factor Loadings	201	366.66*	338	23.92	14	.89		.03	.95	.94	.64	1.30
Constrained Structural Paths	201	402.30*	358			.88		.04	.94	.93	.66	1.37
Unconstrained Structural Paths	201	383.62*	336	18.68	22	.88		.04	.94	.92	.63	1.28
Heritage												
Constrained Factor Loadings	201	471.73*	352			.84		.06	.91	.89	.63	1.28
Unconstrained Factor Loadings	201	434.70*	338	37.03*	14	.84		.05	.92	.90	.62	1.23
Partially Constrained Errors	201	442.77*	346	8.07	8	.84		.05	.92	.90	.63	1.26
Constrained Structural Paths	201	483.05*	358			.83		.06	.90	.88	.64	1.29
Unconstrained Structural Paths	201	538.17*	336	43.56*	22	.84		.06	.91	.89	.62	1.22

Note. N = Sample Size; X^2 = Chi-Squared; df = Degrees of Freedom; $\Delta\chi^2$ = Chi-Square Difference; Δdf = Change in Degrees of Freedom; GFI = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; NNFI = Non-normed Fit Index; PNFI = Parsimonious Normed Fit Index PGFI = Parsimonious Goodness of Fit Index. *$p < 0.001$.

Three of the indicators of Perceived Social Support, PSSFA2 (Family Intimacy), PSSFR3 (Peer Closeness), and PSSUP (Relationship to University Personnel) did not significantly load on this latent variable. These indicators appear to be a measure of the type of relationship between the respondents and their support network. Given that the literature indicates that perceived support is defined as an individual's perceptions of general or specific support, available or acted on, from people in their social network (e.g., family, peers, university personnel; Demaray & Malecki, 2002) and is independent of the support network's characteristics (Eckenrode & Wethington, 1990; Lepore et al., 1991; Sarason et al., 1994), PSSFA2, PSSFR3, and PSSUP3 were removed as indicators of Perceived Social Support.

One indicator, ARSMA2 (Association with Anglos) did not load significantly on the latent variable Individual Cultural Characteristics. As stated above, no participants represented a "Very Latina/o Oriented" level, indicating that all participants scored high on the Anglo Orientation Scale of the ARSMA-II. Given these results, only ARSMA1 (Latino Orientation), MEIM1 (Recognition of Ethnicity), and MEIM2 (Exploration of Ethnicity) remained as indicators of Individual Cultural Characteristics.

Although the factors loading for SWLF (Satisfaction with Life) and SHS (Subjective Happiness Scale) on the Mental Health latent variable were significant, these values were negative, unlike the DSD1-3 indicators. As stated above Masse et al (1998) have demonstrated that psychological distress and well-being are correlated and are part of a two-dimensional latent construct which reflects a higher-order concept of mental health. Thus, Mental Health was divided into two latent variables, Distress and

Wellbeing. SWLF and SHS were assigned as indicators of Wellbeing and DSD1-3 were designated to load on Distress.

Table 24 displays the intercorrelation matrix of the remaining scales used to test Model 2. These modifications to the measurement model yielded an improvement in model fit (see Table 23); however, the overall model fit remained poor [χ^2 (df 198, N=201) = 508.32, $p < 0.001$, GFI = 0.81, AGFI = 0.76, RMSEA = 0.09, CFI = 0.79, NNFI = 0.76, PNFI = 0.61, PGFI = 0.62]. The output suggested that several structural changes could be made to improve model fit. Please see Figure 12. Respecification of this model was guided by both theoretical and empirical considerations. Below are descriptions of the respecification steps that were taken to improve model fit.

Model 3

Model 2 was respecified to eliminate the following non significant paths. Since the literature indicates that bicultural and highly acculturated Latina/o university students use mostly direct coping approaches (Mena et al., 1987; Vazquez & Garcia-Vazquez, 1995), the path from Individual Cultural Characteristics to Indirect Coping was eliminated.

The path from Appraisal of Sociocultural Stress to Direct Coping was found to be non significant and was eliminated. The literature also indicates that individuals may cope with cultural stress both indirectly (Crocker & Major, 1989; Phenice & Griffore, 1994; Schmader et al., 2001) and directly (Phinney & Chavira, 1995; Mena et al., 1987). However, the appraisal of sociocultural stress appears to influence an individual's type of coping strategies (Schmader et al., 2001). This sample of respondents reported perceiving acculturative stress and/or minority status stress as slightly stressful.

Table 24. Intercorrelations and Reliability Coefficients for Scales used in Model 2

	ARSMA1	MEIM1	MEIM2	PSSFA1	PSSFR1	PSSFR2	PSSUP1	PSSUP2	MSSS1	MSSS2	SAFE1	SAFE2	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC2	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.91																					
MEIM1	0.64	0.83																				
MEIM2	0.52	0.57	0.72																			
PSSFA1	0.10	0.14	0.13	0.91																		
PSSFR1	-0.03	0.05	-0.02	0.31	0.89																	
PSSFR2	0.10	0.08	0.07	0.32	0.61	0.87																
PSSUP1	0.07	0.04	0.06	0.04	0.15	0.11	0.87															
PSSUP2	0.00	-0.02	0.07	0.18	0.27	0.29	0.58	0.85														
MSSS1	0.27	0.32	0.24	-0.12	-0.03	0.00	0.03	-0.15	0.91													
MSSS2	0.36	0.34	0.37	-0.10	-0.05	0.01	0.05	-0.11	0.69	0.89												
SAFE1	0.13	0.08	0.11	-0.24	-0.04	-0.04	0.10	-0.15	0.58	0.57	0.87											
SAFE2	0.30	0.30	0.25	-0.13	-0.14	-0.02	0.04	-0.17	0.54	0.60	0.51	0.77										
BCOPE1	0.21	0.23	0.25	0.19	0.18	0.33	0.14	0.20	0.07	0.07	0.00	0.16	0.82									
BCOPE2	0.01	0.14	0.09	0.40	0.44	0.34	0.05	0.15	-0.06	-0.04	-0.12	-0.04	0.47	0.88								
PFSOC1	0.11	0.10	0.21	0.22	0.07	0.23	0.22	0.30	0.06	0.03	-0.05	0.02	0.63	0.37	0.85							
BCOPE3	-0.04	0.02	0.00	-0.25	-0.11	-0.12	-0.06	-0.13	0.18	0.20	0.27	0.38	-0.01	-0.11	-0.12	0.76						
PFSOC2	-0.04	-0.07	0.04	-0.13	-0.04	-0.01	0.03	-0.15	0.13	0.18	0.28	0.26	0.00	0.05	-0.02	0.53	0.82					
DSD1	0.06	0.05	0.08	-0.19	-0.11	-0.12	-0.08	-0.28	0.17	0.22	0.18	0.30	-0.04	-0.02	-0.08	0.55	0.50	0.88				
DSD2	0.08	0.10	0.13	-0.25	-0.10	-0.09	-0.08	-0.33	0.19	0.24	0.15	0.32	-0.04	-0.07	-0.09	0.44	0.43	0.68	0.84			
DSD3	-0.01	-0.13	0.05	-0.25	-0.15	-0.08	-0.03	-0.07	0.11	0.14	0.14	0.20	-0.04	-0.11	0.04	0.30	0.18	0.52	0.34	0.82		
SWLF	0.04	0.03	-0.05	0.40	0.23	0.31	0.14	0.35	-0.18	-0.17	-0.20	-0.15	0.17	0.21	0.13	-0.38	-0.30	-0.53	-0.47	-0.32	0.89	
SHS	0.14	0.06	-0.01	0.39	0.19	0.29	0.11	0.26	-0.20	-0.19	-0.13	-0.22	0.15	0.14	0.08	-0.47	-0.29	-0.56	-0.48	-0.30	0.66	0.88
Mean	37.32	16.51	8.60	40.01	26.61	16.28	12.68	16.79	15.36	17.37	5.93	12.32	23.09	10.95	22.08	13.44	24.53	19.64	13.55	3.51	24.17	20.50
SD	11.34	3.11	2.20	8.41	5.72	3.10	5.66	4.81	9.26	8.42	4.35	6.38	4.68	3.37	5.75	3.82	6.73	6.01	4.37	1.21	6.57	4.60

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; MEIM1 = Recognition of Ethnicity MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFR1 = Received Peer Support PSSFR2 = Providing Peer Support; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel; MSSS1= Appraisal of Discrimination; MSSS2 = Appraisal of Campus Culture; SAFE1 = Alienation due to Cultural Barriers; SAFE2 = Interpersonal Stress; BCOPE1 = Active Coping; BCOPE2 = Seeking Support; PFSOC1 = Assertive Coping; BCOPE3 = Passive Coping; PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms; DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

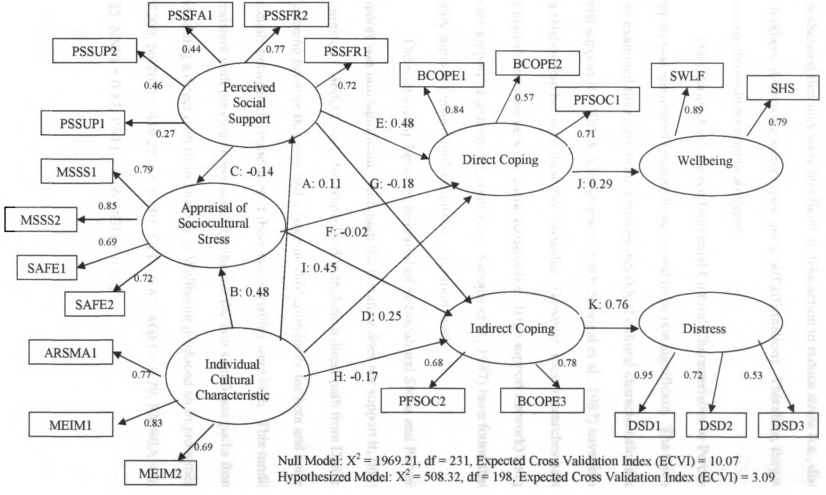

Figure 12. Respecified Model 2 Results

Because the respondents perceived relatively low levels of sociocultural stress, it is hypothesized that they were less likely to take action to reduce stress (i.e., discussing it with others, disproving stereotypes, using self affirmation). Therefore, they were not likely to utilize direct coping strategies.

The relationship between Individual Cultural Characteristics to Perceived Social Support was eliminated because it was found to be non significant. The few studies that have examined the relationship between individual cultural characteristics and perceived social support (Griffith & Villavicencio, 1985; Sabogal et al., 1987) have found that there is a relationship between these two variables. However, these researches have failed to distinguish between network characteristics (i.e., large support network) and perceived social support. Furthermore, some (e.g., Sabogal et al., 1987) have found that perceived family support remains high despite acculturation level.

The relationship between Appraisal of Sociocultural Stress and Perceived Social Support was non significant. Although the literature does not support it, this path was eliminated. Model 2 was also respecified to include a direct path from Distress to Wellbeing because this path had a large modification index for beta and some of the residuals between the indicators of these two variables were high. This modification is consistent with previous literature. Eliminating the non significant paths from Model 2 and adding a direct path from Distress to Wellbeing produced an improvement in fit [χ^2 (df 200, N=201) = 439.27, $p < 0.001$, GFI = 0.83, AGFI = 0.79, RMSEA = 0.08, CFI = 0.85, NNFI = 0.82, PNFI = 0.66, PGFI = 0.66].

Model 4

One of the Appraisal of Sociocultural Stress indicators, SAFE2, was eliminated from Model 3. SAFE2 presented several problems for the model including high residuals and high modification indices for lambda-y (i.e., model fit would improve if SAFE2 was allowed to load on other latent variables; Indirect Coping and Distress). Although SAFE2 was moderately correlated with several of the Indirect Coping and Distress indictors (i.e., the correlations were near 0.30), it was not theoretically justifiable to allow SAFE2 to be an indicator of these two constructs. Thus, SAFE2 was removed as an indicator of Individual Cultural Characteristics.

A review of the modification indices for theta-epsilon, theta-delta-epsilon, and theta-delta revealed that the error covariance between several of the indicators could be estimated to improve model fit. The error covariances between PSSFR1 and PSSFR2, PSSUP1 and PSSUP2, DSD1 and DSD3, and BCOPE3 and SHS were estimated. In addition, the error covariances between PSSFR1 and each of the indicators of Direct Coping (e.g., BCOPE1, BCOPE2, PFSOC1) were also estimated.

According to several researchers (e.g., Byrne, 1998, Joreskog & Sorbom, 1993), the specification of correlated error terms for purposes of achieving a better fitting model must be supported by a strong substantive rational, empirical rationale, or both. Therefore, the covariance between PSSFR1 and PSSFR2 and PSSUP1 and PSSUP2 is justified as substantively meaningful given that perceived social support is a multidimensional construct with correlated dimensions that include social networks, received social support, and provided social support (Cohen et al., 1986; Eckenrode & Wethington, 1990; Hobfoll & Vaux, 1993; Lepore et al., 1991; Sarason et al., 1994 Vaux,

1988). Similarly, the estimation of the covariance between DSD1 and DSD3 is conceivable given that symptoms of depression and suicide have been found to be highly correlated in the literature (e.g., D'Zurilla et al., 1998; Essau &Trommsdorff, 1996; Leong et al., 1997; Nezu et al., 1986). Furthermore, the covariance of BCOPE3 and SHS is supported given the fact that passive coping has been found to be related to lower levels of happiness and higher levels of depression and hopelessness (Clum, & Febbraro, 1994; D' Zurilla et al., 1998; Essau & Trommsdorff, 1996; Leong et al., 1997; Nezu & Ronan, 1988; Priester & Clum, 1993). Finally, the estimation of error covariance between PSSFR1 and each of the indicators of Direct Coping (e.g., BCOPE1, BCOPE2, PFSOC1) is justified given that perceived social support has been found to precede, influence, and assist effective coping efforts (Billings & Moos, 1981; Cohen, 1992; Cronkite & Moos, 1984; Holahan & Moos, 1986, 1987; Holahan et al., 1997; Lazarus & Folkman, 1984; Lepore et al., 1991; Thoits, 1986; 1995).

Table 25 contains the intercorrelation matrix of the remaining scales used to test Model 4. These modifications produced a better fitting model [χ^2 (df 167, N=201) = 241.67, $p > 0.001$, GFI = 0.90, AGFI = 0.86, RMSEA = 0.05, CFI = 0.94, NNFI = 0.93, PNFI = 0.68, PGFI = 0.65]. Furthermore, all direct pathways outlined in this model were statistically significant ($p < 0.05$) and the factor loading of each indicator to its respective latent variable in this model were all statistically significant ($p < 0.05$). Please see Figure 13.

Model 4 differs from the adapted model, Model 1, in that this model suggests that indirect coping and direct coping are two separate coping constructs. Similarly, Model 4 suggests that distress and wellbeing are two separate mental health constructs. Model 1

Table 25. Intercorrelations and Reliability Coefficients for Scales used in Model 4

	ARSMA1	MEIM1	MEIM2	PSSFA1	PSSFR1	PSSFR2	PSSUP1	PSSUP2	MSSS1	MSSS2	SAFE1	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC2	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.91																				
MEIM1	0.64	0.83																			
MEIM2	0.52	0.57	0.72																		
PSSFA1	0.10	0.14	0.13	0.91																	
PSSFR1	-0.03	0.05	-0.02	0.31	0.89																
PSSFR2	0.10	0.08	0.07	0.32	0.61	0.87															
PSSUP1	0.07	0.04	0.06	0.04	0.15	0.11	0.87														
PSSUP2	0.00	-0.02	0.07	0.18	0.27	0.29	0.58	0.85													
MSSS1	0.27	0.32	0.24	-0.12	-0.03	0.00	0.03	-0.15	0.91												
MSSS2	0.36	0.34	0.37	-0.10	-0.05	0.01	0.05	-0.11	0.69	0.89											
SAFE1	0.13	0.08	0.11	-0.24	-0.04	-0.04	0.10	-0.15	0.58	0.57	0.87										
BCOPE1	0.21	0.23	0.25	0.19	0.18	0.33	0.14	0.20	0.07	0.07	0.00	0.82									
BCOPE2	0.01	0.14	0.09	0.40	0.44	0.34	0.05	0.15	-0.06	-0.04	-0.12	0.47	0.88								
PFSOC1	0.11	0.10	0.21	0.22	0.07	0.23	0.22	0.30	0.06	0.03	-0.05	0.63	0.37	0.85							
BCOPE3	-0.04	0.02	0.00	-0.25	-0.11	-0.12	-0.06	-0.13	0.18	0.20	0.27	-0.01	-0.11	-0.12	0.76						
PFSOC2	-0.04	-0.07	0.04	-0.13	-0.04	-0.01	0.03	-0.15	0.13	0.18	0.28	0.00	0.05	-0.02	0.53	0.82					
DSD1	0.06	0.05	0.08	-0.19	-0.11	-0.12	-0.08	-0.28	0.17	0.22	0.18	-0.04	-0.02	-0.08	0.55	0.50	0.88				
DSD2	0.08	0.10	0.13	-0.25	-0.10	-0.09	-0.08	-0.33	0.19	0.24	0.15	-0.04	-0.07	-0.09	0.44	0.43	0.68	0.84			
DSD3	-0.01	-0.13	0.05	-0.25	-0.15	-0.08	-0.03	-0.07	0.11	0.14	0.14	-0.04	-0.11	0.04	0.30	0.18	0.52	0.34	0.82		
SWLF	0.04	0.03	-0.05	0.40	0.23	0.31	0.14	0.35	-0.18	-0.17	-0.20	0.17	0.21	0.13	-0.38	-0.30	-0.53	-0.47	-0.32	0.89	
SHS	0.14	0.06	-0.01	0.39	0.19	0.29	0.11	0.26	-0.20	-0.19	-0.13	0.15	0.14	0.08	-0.47	-0.29	-0.56	-0.48	-0.30	0.66	0.88
Mean	37.32	16.51	8.60	40.01	26.61	16.28	12.68	16.79	15.36	17.37	5.93	23.09	10.95	22.08	13.44	24.53	19.64	13.55	3.51	24.17	20.50
SD	11.34	3.11	2.20	8.41	5.72	3.10	5.66	4.81	9.26	8.42	4.35	4.68	3.37	5.75	3.82	6.73	6.01	4.37	1.21	6.57	4.60

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; MEIM1 = Recognition of Ethnicity
MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFR1 = Received Peer Support
PSSFR2 = Providing Peer Support; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel;
MSSS1= Appraisal of Discrimination; MSSS2 = Appraisal of Campus Culture; SAFE1 = Alienation due to Cultural Barriers;
BCOPE1 = Active Coping; BCOPE2 = Seeking Support; PFSOC1 = Assertive Coping; BCOPE3 = Passive Coping;
PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms
DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

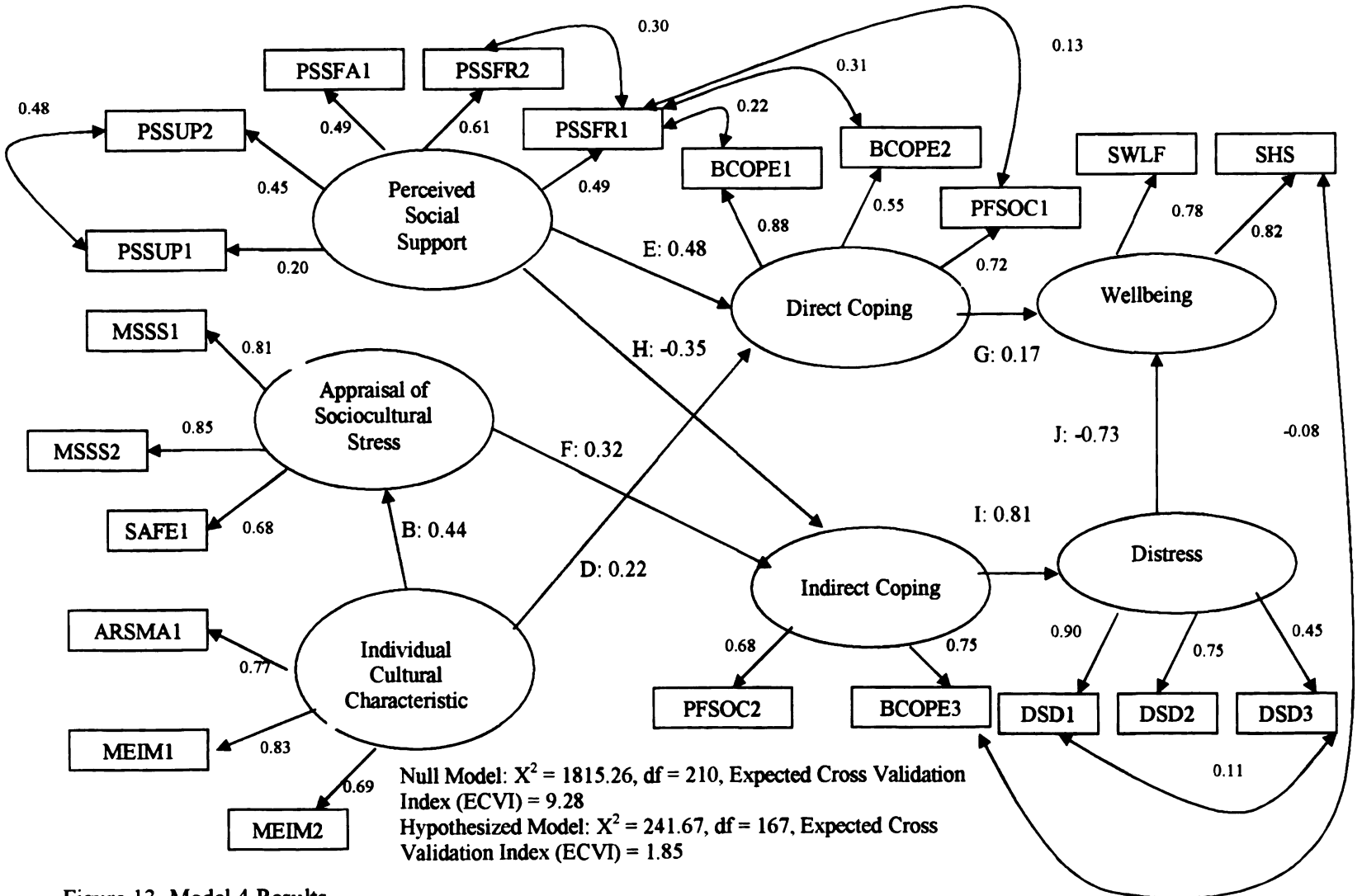

Figure 13. Model 4 Results

proposed that Individual Cultural Characteristics directly influenced Perceived Social Support and that Perceived Social Support directly influenced Appraisal of Sociocultural Stress. Model 4 indicates that these relationships are not significant, thus these paths were removed. Model 4 also indicates a direct significant positive relationship between Individual Cultural Characteristics and Appraisal of Sociocultural Stress. However this path is not in the predicted direction (standardized $\beta = 0.44$, $t = 5.08$, $p < 0.001$, two-tailed test; Path B, Figure 13). Paths D (standardized $\beta = 0.22$, $t = 2.71$, $p < 0.01$, two-tailed test; Figure 13), E (standardized $\beta = 0.48$, $t = 3.89$, $p < 0.001$, two-tailed test; Figure 13), F (standardized $\beta = 0.32$, $t = 3.70$, $p < 0.001$, two-tailed test; Figure 13), and G (standardized $\beta = 0.17$, $t = 2.48$, $p < 0.02$, two-tailed test; Figure 13) of Model 1 were found to be statistically significant in the hypothesized direction in Model 4. Model 4 also contains several paths that were not hypothesized for Model 1. These include Path H (standardized $\beta = -0.35$, $t = 3.01$, $p < 0.01$, two-tailed test; Figure 13), Path I (standardized $\beta = 0.81$, $t = 8.12$, $p < 0.001$, two-tailed test; Figure 13), and Path J (standardized $\beta = -0.73$, $t = -9.05$, $p < 0.001$, two-tailed test; Figure 13). Furthermore, consistent with the literature, several indicators were removed from the hypothesized model and the covariance of several pairs of indicators was estimated.

Seven statistically significant indirect relationships were demonstrated. Indirect relationships from Individual Cultural Characteristics to Indirect Coping ($\eta = 0.14$, $t = 3.09$, $p < .001$) and Individual Cultural Characteristics to Distress ($\eta = 0.12$, $t = 3.09$, $p < .01$) were found. Participants who tended to be bicultural or highly acculturated were more likely to experience sociocultural stress, utilize indirect coping strategies and experience distress. Indirect relationships from Perceived Social Support to Distress ($\eta =$

-0.28, t = -3.00, p < .01) and to Wellbeing (η = 0.29, t = 3.45, p <.001) were found. Perceived social support promoted direct coping strategies which in turn promoted wellbeing. In addition, perceived social support also promoted indirect coping strategies which promoted distress and ultimately affected wellbeing. Indirect relationships between Appraisal of Sociocultural Stress to Distress (η = 0.26, t = 3. 69, p <.001) and to Wellbeing (η = -0.19, t = -3.50, p < .001) and Indirect Coping to Wellbeing (η = -0.59, t = -6.74, p <.001) were also found. Participants who experienced sociocultural stress utilized indirect coping strategies, experienced distress, and reported lower levels of wellbeing.

Moderators

The variables, gender, SES, and heritage were tested as moderators. First, a test of measurement invariance was performed. Thus, analyses were conducted to see if the indicators assessed the same latent variables in different groups. The evaluation of measurement invariance was done by comparing the relative fit with the $\chi^2_{difference}$ test of two models, one with cross-group equality constraints imposed on the factor loading and the other without constraints. If the fit of a model with equality-constrained loadings was not significantly worse than that of the unconstrained model, then it was assumed that the indicators measured the factors in comparable ways in each group (Byrne, 1998; Kline, 1998). After the equality of factor structures was assessed, analyses were conducted to determine if group membership (i.e., male vs. female, low SES vs. high SES, mono-ethnic heritage (two parents of Latino heritage) vs. bi-ethnic heritage (one Non-Latina/o parent and one parent of Latina/o heritage) moderated the structural paths (relationships) specified in the model. Thus, cross-group equality constraints were imposed on both the

factor loadings and the structural paths (Byrne, 1998). The χ^2 of the model with its factor loadings and structural paths constrained to equality was then contrasted against that of the unconstrained model. If the $\chi^2_{difference}$ test of the two models was significant, it was concluded that the structural paths differed across the groups (Byrne, 1998; Kline, 1998).

Gender

Tables 26 and 27 display the intercorrelation matrices, means, and standard deviations used to test differences between males and females, respectively. The evaluation of measurement invariance revealed that the factor loadings were the same for males (N=72) and females (N=129). The fit of the model with equality-constrained loadings [χ^2 (df 352, N=201) = 402.92, $p < 0.001$, GFI = 0.87, RMSEA = 0.04, CFI = 0.95, NNFI = 0.94, PNFI = 0.66, PGFI = 1.32] was not significantly worse ($\chi^2_{difference}$ test $p = 0.16$) than that of the unconstrained model [χ^2 (df 338, N=201) = 383.79, $p < 0.001$, GFI = 0.87, RMSEA = 0.04, CFI = 0.95, NNFI = 0.94, PNFI = 0.64, PGFI = 1.27]. Please see Table 23. We can assume that the indicators measure the factors in comparable ways in each group. Given that the factor loadings were invariant across males and females, as suggested by Byrne (1998) a test of group differences in the means of the latent constructs was conducted. This test revealed that females exhibited statistically significant higher levels than males on Perceived Social Support ($\kappa = 2.32$, $t = 2.69$, $p < 0.01$, D = -0.57), Distress ($\kappa = 1.89$, $t = 2.84$, $p<0.01$, D = -0.55), and Wellbeing ($\kappa = 2.03$, $t = 4.04$, $p<0.001$, D = -0.96). Statistically significant differences were not evident for Individual Cultural Characteristics ($\kappa = 1.95$, $t = 1.43$, $p > 0.10$, D = -0.23), Appraisal of Sociocultural Stress ($\kappa = 0.52$, $t = -0.46$, $p > 0.20$, D = -0.08), Direct Coping ($\kappa = -0.52$, $t = -0.77$, $p > 0.20$, D = 0.14), or Indirect Coping ($\kappa = 1.04$, $t = 1.96$, p

Table 26. Intercorrelations and Reliability Coefficients for Males

	ARSMA1	MEIM1	MEIM2	PSSFA1	PSSFR1	PSSFR2	PSSUP1	PSSUP2	MSSS1	MSSS2	SAFE1	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC2	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.88																				
MEIM1	0.72	0.83																			
MEIM2	0.58	0.65	0.69																		
PSSFA1	0.02	0.05	0.13	0.91																	
PSSFR1	-0.05	-0.07	-0.08	0.19	0.89																
PSSFR2	0.11	-0.07	0.06	0.15	0.50	0.85															
PSSUP1	-0.09	-0.09	-0.14	-0.07	0.17	0.13	0.86														
PSSUP2	0.02	-0.12	-0.05	0.06	0.21	0.23	0.49	0.80													
MSSS1	0.27	0.20	0.12	-0.08	0.03	0.07	0.04	-0.26	0.93												
MSSS2	0.39	0.35	0.34	-0.12	-0.03	0.12	0.00	-0.14	0.73	0.88											
SAFE1	0.15	0.03	0.10	-0.09	0.15	0.14	0.25	-0.10	0.70	0.69	0.89										
BCOPE1	0.10	0.21	0.24	0.18	0.09	0.27	0.12	0.03	0.08	0.16	0.12	0.82									
BCOPE2	0.10	0.15	0.15	0.40	0.42	0.20	0.09	0.06	0.01	-0.04	0.06	0.42	0.86								
PFSOC1	0.06	0.12	0.18	0.31	0.02	0.18	0.21	0.20	-0.03	0.00	0.03	0.60	0.35	0.88							
BCOPE3	0.03	0.07	0.11	-0.16	-0.12	-0.01	0.05	-0.12	0.18	0.30	0.29	0.11	-0.11	-0.14	0.77						
PFSOC2	-0.05	-0.13	0.08	-0.03	-0.11	0.00	0.12	-0.24	0.16	0.20	0.32	0.02	-0.01	-0.03	0.57	0.86					
DSD1	0.12	0.10	0.28	-0.21	-0.01	-0.01	-0.05	-0.31	0.16	0.22	0.24	0.03	-0.03	-0.18	0.64	0.63	0.87				
DSD2	0.03	0.01	0.18	-0.25	-0.05	-0.08	-0.04	-0.27	0.20	0.23	0.21	-0.07	-0.05	-0.12	0.53	0.50	0.71	0.84			
DSD3	0.02	-0.10	0.16	-0.32	-0.12	0.19	-0.07	-0.02	0.12	0.20	0.19	0.03	-0.15	-0.02	0.35	0.30	0.44	0.32	0.70		
SWLF	0.11	0.08	-0.09	0.31	0.04	0.15	0.10	0.37	-0.19	-0.11	-0.19	0.11	0.02	0.20	-0.36	-0.45	-0.59	-0.51	-0.25	0.88	
SHS	0.19	0.01	-0.02	0.32	-0.01	0.14	0.11	0.34	-0.10	-0.07	-0.04	0.06	0.13	0.26	-0.47	-0.29	-0.58	-0.51	-0.26	0.66	0.86
Mean	35.76	18.78	8.68	37.22	24.38	15.15	13.42	17.09	16.03	16.57	6.57	22.73	9.59	22.04	13.32	23.68	17.93	12.90	3.44	23.17	19.99
SD	10.85	3.72	2.20	9.01	6.16	3.38	5.52	4.27	10.39	8.04	5.18	4.76	3.28	6.29	3.90	7.19	5.47	4.08	0.95	6.86	4.52

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; MEIM1 = Recognition of Ethnicity; MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFR1 = Received Peer Support; PSSFR2 = Providing Peer Support; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel; MSSS1 = Appraisal of Discrimination ; MSSS2 = Appraisal of Campus Culture; SAFE1= Alienation due to Cultural; SAFE2 = Interpersonal Stress; BCOPE1 = Active Copin; BCOPE2 = Seeking Support; PFSOC1 = Assertive Coping BCOPE3 = Passive Coping; PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms; DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

Table 27. Intercorrelations and Reliability Coefficients for Females

	ARSMA1	MEIM1	MEIM2	PSSFA1	PSSFR1	PSSFR2	PSSUP1	PSSUP2	MSSS1	MSSS2	SAFE1	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC2	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.90																				
MEIM1	0.62	0.81																			
MEIM2	0.49	0.60	0.74																		
PSSFA1	0.10	0.16	0.15	0.91																	
PSSFR1	-0.07	0.06	0.04	0.32	0.87																
PSSFR2	0.04	0.12	0.10	0.36	0.64	0.87															
PSSUP1	0.17	0.13	0.17	0.15	0.21	0.16	0.87														
PSSUP2	0.00	0.05	0.13	0.29	0.36	0.37	0.63	0.86													
MSSS1	0.29	0.43	0.32	-0.13	-0.05	-0.02	0.01	-0.10	0.89												
MSSS2	0.34	0.37	0.38	-0.13	-0.10	-0.09	0.09	-0.09	0.68	0.90											
SAFE1	0.14	0.19	0.11	-0.33	-0.15	-0.14	-0.02	-0.20	0.47	0.53	0.85										
BCOPE1	0.26	0.24	0.25	0.18	0.22	0.36	0.17	0.29	0.07	0.02	-0.09	0.82									
BCOPE2	-0.08	0.08	0.08	0.31	0.36	0.35	0.08	0.22	-0.08	-0.07	-0.21	0.50	0.88								
PFSOC1	0.14	0.09	0.23	0.17	0.12	0.29	0.22	0.36	0.13	0.05	-0.12	0.66	0.41	0.83							
BCOPE3	-0.08	-0.06	-0.07	-0.34	-0.13	-0.22	-0.12	-0.14	0.19	0.15	0.27	-0.08	-0.12	-0.11	0.75						
PFSOC2	-0.05	-0.08	0.03	-0.26	-0.04	-0.06	0.00	-0.10	0.12	0.15	0.27	-0.02	0.04	-0.02	0.51	0.79					
DSD1	0.01	-0.03	0.00	-0.28	-0.30	-0.30	-0.07	-0.26	0.21	0.20	0.20	-0.10	-0.12	-0.02	0.52	0.42	0.87				
DSD2	0.09	0.08	0.12	-0.32	-0.20	-0.15	-0.08	-0.35	0.20	0.24	0.13	-0.04	-0.14	-0.08	0.40	0.38	0.66	0.84			
DSD3	-0.03	-0.15	0.00	-0.25	-0.20	-0.24	-0.01	-0.09	0.11	0.11	0.13	-0.08	-0.11	0.07	0.29	0.12	0.55	0.35	0.85		
SWLF	-0.02	0.00	-0.01	0.45	0.34	0.40	0.19	0.35	-0.16	-0.21	-0.20	0.20	0.28	0.08	-0.41	-0.23	-0.57	-0.48	-0.37	0.90	
SHS	0.10	0.08	0.00	0.43	0.30	0.37	0.12	0.24	-0.25	-0.26	-0.18	0.20	0.12	-0.03	-0.48	-0.31	-0.60	-0.48	-0.32	0.65	0.89
Mean	38.19	19.74	8.55	41.56	27.85	16.92	12.26	16.63	14.98	17.81	5.57	23.29	11.70	22.10	13.51	25.00	20.60	13.91	3.55	24.73	20.78
SD	11.55	3.74	2.21	7.67	5.06	2.74	5.71	5.10	8.58	8.62	3.79	4.64	3.18	5.45	3.78	6.45	6.11	4.49	1.34	6.35	4.64

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; MEIM1 = Recognition of Ethnicity; MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFR1 = Received Peer Support; PSSFR2 = Providing Peer Support; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel; MSSS1 = Appraisal of Discrimination ; MSSS2 = Appraisal of Campus Culture; SAFE1= Alienation due to Cultural; SAFE2 = Interpersonal Stress; BCOPE1 = Active Copin; BCOPE2 = Seeking Support; PFSOC1 = Assertive Coping BCOPE3 = Passive Coping; PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms; DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

= 0.05, D = -0.45). Tables 26 and 27 indicate that these differences are also confirmed in observed variables.

The relative fit of the model with its factor loadings and structural paths constrained to equality [χ^2 (df 358, N=201) = 427.48, $p > 0.001$, GFI = 0.86, RMSEA = 0.04, CFI = 0.94, NNFI = 0.93, PNFI = 0.66, PGFI = 1.33] was not worse ($\chi^2_{difference}$ test was significant ($p = 0.93$)) than that of the unconstrained model [χ^2 (df 336, N=201) = 414.41, $p > 0.001$, GFI = 0.86, RMSEA = 0.05, CFI = 0.93, NNFI = 0.92, PNFI = 0.63, PGFI = 1.25]. Thus, we can conclude that the structural paths do not differ for males and females and gender is not a moderator of the respecified model. Please see Table 23.

Socioeconomic Status

SES levels (high and low) were determined by combining information from two items of the demographic questionnaire (i.e., comparison of participants' families' financial status with other MSU students' families; parents' education level). Participants were assigned to the high SES group if they reported that they were about the same, better off or much better off than other MSU students' families and their mother's or father's highest education level was greater than high school. Participants were assigned to the low SES group if they reported that they were about the same, somewhat worse off or much worse off than other MSU students' families and their mother's and father's highest education level was at most high school. Participants who reported that they were somewhat worse off or much worse off and their father or mother had above a high school education, were also assigned to the low SES group. Similarly, participants who reported that they were better off or much better off and their father or mother had below a high school education were assigned to the high SES group.

Tables 28 and 29 display the intercorrelation matrices, means, and standard deviations used to test differences between low and high SES groups, respectively. The evaluation of measurement invariance revealed that the factor loadings were the same for the high (N=71) and low (N=130) SES groups. The fit of the model with equality-constrained loadings [χ^2 (df 352, N=201) = 390.58, $p < 0.001$, GFI = 0.89, RMSEA = 0.03, CFI = 0.94, NNFI = 0.93, PNFI = 0.65, PGFI = 1.35] was not significantly worse ($\chi^2_{difference}$ test $p = 0.05$) than that of the unconstrained model [χ^2 (df 338, N=201) = 366.66, $p < 0.001$, GFI = 0.89, RMSEA = 0.03, CFI = 0.95, NNFI = 0.94, PNFI = 0.64, PGFI = 1.30]. We can assume that the indicators measure the factors in comparable ways in each group. Please see Table 23. A test of group differences in the means of the latent constructs revealed that compared to the low SES group, high SES participants exhibited statistically significant higher levels on Perceived Social Support ($\kappa = 0.97$, $t = 2.23$, $p < 0.05$, D = -0.83) and Wellbeing ($\kappa = 1.67$, $t = 2.52$, $p < 0.02$, D = -0.51) and lower levels on Appraisal of Sociocultural Stress ($\kappa = -1.38$, $t = -2.98$, $p < 0.01$, D = 0.48). Statistically significant differences were not evident on Individual Cultural Characteristics ($\kappa = -0.19$, $t = -0.35$, $p > 0.20$, D = -0.06), Direct Coping ($\kappa = -0.66$, $t = -0.88$ $p > 0.20$, D = 0.18), Indirect Coping ($\kappa = 1.50$, $t = 1.54$, $p > 0.10$, D = -0.32), and Distress ($\kappa = -0.04$, $t = -0.48$, $p > 0.20$, D = 0.11). Tables 28 and 29 indicate that these differences are confirmed in observed variables.

Table 28. Intercorrelations and Reliability Coefficients for Low SES

	ARSMA1	MEIM1	MEIM2	PSSFA1	PSSFR1	PSSFR2	PSSUP1	PSSUP2	MSSS1	MSSS2	SAFE1	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC1	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.91																				
MEIM1	0.58	0.81																			
MEIM2	0.45	0.62	0.73																		
PSSFA1	0.00	0.05	0.10	0.93																	
PSSFR1	-0.09	0.02	0.01	0.12	0.87																
PSSFR2	0.13	-0.05	0.18	0.15	0.48	0.88															
PSSUP1	0.04	-0.02	-0.02	-0.15	-0.01	0.10	0.85														
PSSUP2	0.05	0.02	0.14	0.07	0.07	0.12	0.62	0.82													
MSSS1	0.22	0.26	0.23	-0.20	0.03	0.01	0.14	-0.11	0.89												
MSSS2	0.34	0.39	0.43	-0.13	0.00	0.05	0.03	-0.13	0.65	0.91											
SAFE1	0.09	0.08	0.16	-0.28	0.08	0.03	0.26	-0.05	0.64	0.65	0.89										
BCOPE1	0.15	0.16	0.22	0.03	0.09	0.22	0.08	0.06	0.15	0.09	0.15	0.85									
BCOPE2	-0.01	0.13	0.07	0.31	0.46	0.10	0.02	0.05	-0.04	-0.03	-0.07	0.29	0.91								
PFSOC1	0.10	0.09	0.20	0.06	-0.08	0.20	0.24	0.24	0.08	0.06	0.12	0.64	0.28	0.83							
BCOPE3	-0.10	0.02	0.00	-0.15	-0.01	-0.04	0.00	-0.10	0.19	0.21	0.25	0.05	-0.02	-0.19	0.78						
PFSOC2	-0.11	-0.20	0.00	-0.04	0.15	0.19	0.00	-0.25	0.19	0.19	0.24	0.02	0.12	-0.01	0.56	0.80					
DSD1	0.13	0.11	0.13	-0.04	0.14	0.12	-0.02	-0.24	0.20	0.29	0.20	0.09	0.23	0.02	0.52	0.61	0.87				
DSD2	0.16	0.08	0.14	-0.07	0.20	0.20	-0.10	-0.36	0.15	0.22	0.02	0.10	0.12	-0.04	0.34	0.48	0.67	0.84			
DSD3	0.02	-0.10	0.05	-0.24	-0.06	0.05	0.11	-0.03	0.11	0.20	0.11	0.04	0.13	0.15	0.30	0.28	0.58	0.31	0.81		
SWLF	0.02	0.00	-0.12	0.43	-0.08	0.08	0.04	0.30	-0.17	-0.19	-0.25	0.05	0.06	0.00	-0.32	-0.40	-0.55	-0.62	-0.29	0.89	
SHS	0.19	0.02	0.02	0.30	-0.02	0.14	-0.07	0.14	-0.12	-0.19	-0.07	0.08	-0.05	0.06	-0.42	-0.36	-0.60	-0.57	-0.35	0.67	0.86
Mean	37.46	19.59	8.59	37.73	24.94	15.68	12.12	15.37	17.56	19.68	7.10	22.78	10.67	20.80	13.87	24.78	20.06	14.59	3.63	22.18	19.65
SD	12.18	3.85	2.29	9.37	5.95	3.08	5.56	5.16	10.10	9.02	4.97	4.89	3.26	6.05	4.26	7.13	6.52	4.65	1.35	6.80	4.88

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; MEIM1 = Recognition of Ethnicity MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFR1 = Received Peer Support PSSFR2 = Providing Peer Support; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel; MSSS1= Appraisal of Discrimination; MSSS2 = Appraisal of Campus Culture; SAFE1 = Alienation due to Cultural Barriers; SAFE2 = Interpersonal Stress; BCOPE1 = Active Coping; BCOPE2 = Seeking Support; PFSOC1 = Assertive Coping; BCOPE3 = Passive Coping; PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms; DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

Table 29. Intercorrelations and Reliability Coefficients for High SES

	ARSMA1	MEIM1	MEIM2	PSSFA1	PSSFR1	PSSFR2	PSSUP1	PSSUP2	MSSS1	MSSS2	SAFE1	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC2	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.88																				
MEIM1	0.71	0.83																			
MEIM2	0.56	0.61	0.72																		
PSSFA1	0.17	0.22	0.15	0.90																	
PSSFR1	0.01	0.07	-0.04	0.40	0.90																
PSSFR2	0.08	0.16	0.01	0.40	0.67	0.86															
PSSUP1	0.09	0.08	0.11	0.14	0.23	0.11	0.88														
PSSUP2	-0.03	-0.01	0.03	0.20	0.35	0.36	0.57	0.86													
MSSS1	0.31	0.37	0.25	0.00	0.00	0.04	-0.02	-0.13	0.92												
MSSS2	0.38	0.35	0.34	-0.01	-0.01	0.04	0.09	-0.02	0.69	0.88											
SAFE1	0.16	0.12	0.08	-0.14	-0.05	-0.03	0.03	-0.16	0.51	0.48	0.86										
BCOPE1	0.24	0.28	0.26	0.29	0.22	0.38	0.17	0.28	0.03	0.09	-0.10	0.81									
BCOPE2	0.03	0.14	0.10	0.45	0.43	0.46	0.06	0.19	-0.05	-0.02	-0.14	0.56	0.87								
PFSOC1	0.13	0.12	0.22	0.29	0.12	0.22	0.19	0.30	0.10	0.08	-0.12	0.64	0.41	0.86							
BCOPE3	0.00	-0.03	0.00	-0.31	-0.16	-0.16	-0.09	-0.13	0.16	0.17	0.27	-0.04	-0.15	-0.06	0.74						
PFSOC2	0.00	-0.02	0.07	-0.20	-0.16	-0.12	0.05	-0.07	0.08	0.16	0.31	-0.01	0.01	-0.02	0.52	0.83					
DSD1	0.02	0.00	0.06	-0.29	-0.27	-0.26	-0.11	-0.29	0.14	0.16	0.16	-0.12	-0.17	-0.13	0.57	0.43	0.88				
DSD2	0.03	0.05	0.13	-0.34	-0.25	-0.22	-0.05	-0.25	0.17	0.21	0.19	-0.12	-0.17	-0.08	0.50	0.39	0.69	0.85			
DSD3	-0.04	-0.15	0.05	-0.24	-0.19	-0.15	-0.11	-0.08	0.09	0.07	0.14	-0.10	-0.24	-0.02	0.30	0.10	0.47	0.35	0.82		
SWLF	0.05	0.09	0.00	0.34	0.37	0.41	0.19	0.32	-0.12	-0.08	-0.10	0.24	0.28	0.15	-0.41	-0.24	-0.53	-0.34	-0.33	0.89	
SHS	0.11	0.11	-0.03	0.43	0.29	0.36	0.20	0.31	-0.21	-0.14	-0.13	0.18	0.24	0.06	-0.50	-0.25	-0.53	-0.40	-0.25	0.63	0.89
Mean	37.24	19.29	8.60	41.25	27.52	16.62	12.98	17.57	14.15	16.10	5.29	23.26	11.10	22.78	13.21	24.39	19.41	12.98	3.45	25.26	20.96
SD	10.90	3.71	2.16	7.60	5.39	3.07	5.71	4.44	8.57	7.82	3.85	4.57	3.42	5.47	3.55	6.53	5.73	4.11	1.13	6.19	4.39

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; MEIM1 = Recognition of Ethnicity MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFR1 = Received Peer Support PSSFR2 = Providing Peer Support; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel; MSSS1= Appraisal of Discrimination; MSSS2 = Appraisal of Campus Culture; SAFE1 = Alienation due to Cultural Barriers; SAFE2 = Interpersonal Stress; BCOPE1 = Active Coping; BCOPE2 = Seeking Support; PFSOC1 = Assertive Coping; BCOPE3 = Passive Coping; PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms; DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

The relative fit of the model with its factor loadings and structural paths constrained to equality [χ^2 (df 358, N=201) = 402.30, $p > 0.001$, GFI = 0.88, RMSEA = 0.04, CFI = 0.94, NNFI = 0.93, PNFI = 0.66, PGFI = 1.37] was not significantly worse ($\chi^2_{difference}$ test $p = 0.67$) than that of the unconstrained model [χ^2 (df 336, N=201) = 383.62, $p < 0.001$, GFI = 0.88, RMSEA = 0.04, CFI =0.94, NNFI =0.92, PNFI = 0.63, PGFI = 1.28]. Please see Table 23. Thus, we can conclude that the structural paths do not differ for the high and low SES groups and SES is not a moderator.

Heritage

Tables 30 and 31 display the intercorrelation matrices, means, and standard deviations used to test differences between mono-ethnic and bi-ethnic participants, respectively. The evaluation of measurement invariance revealed that the fit of the equality-constrained, factor loadings model for mono-ethnic (N=79) and bi-ethnic participants (N=122) [χ^2 (df 352, N=201) = 471.73, $p < 0.001$, GFI = 0.84, RMSEA = 0.06, CFI = 0.91, NNFI =0.89, PNFI = 0.63, PGFI = 1.28] was significantly worse ($\chi^2_{difference}$ test $p < 0.05$) than that of the unconstrained model [χ^2 (df 338, N=201) = 434.70, $p < 0.001$, GFI = 0.84, RMSEA = 0.05, CFI = 0.92, NNFI = 0.90, PNFI = 0.62, PGFI = 1.23]. Please see Table 23. Faced with these results, an analysis of the equality of the factor variances and covariances was conducted. Thus, the fit of a model where only error variances and covariances were estimated for each group [χ^2 (df 324, N=201) = 425.30, $p < 0.001$, GFI = 0.85, RMSEA = 0.06, CFI = 0.91, NNFI = 0.89, PNFI = 0.60, PGFI = 1.19] was compared to the preceding model where the factor loadings and error variances and covariances were constrained. The fit of the model with unconstrained error variances and covariances was significantly better ($\chi^2_{difference}$ test $p < 0.05$) than that

Table 30. Intercorrelations and Reliability Coefficients for Mono-ethnic

	ARSMA1	MEIM1	MEIM2	PSSFA1	PSSFR1	PSSFR2	PSSUP1	PSSUP2	MSSS1	MSSS2	SAFE1	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC2	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.86																				
MEIM1	0.51	0.78																			
MEIM2	0.38	0.50	0.70																		
PSSFA1	0.18	0.13	0.21	0.91																	
PSSFR1	0.01	-0.04	0.03	0.22	0.84																
PSSFR2	0.24	0.00	0.06	0.27	0.69	0.88															
PSSUP1	0.20	0.12	0.28	0.00	0.07	0.04	0.86														
PSSUP2	0.18	0.12	0.26	0.15	0.15	0.21	0.60	0.83													
MSSS1	0.18	0.23	0.31	-0.07	0.14	0.07	0.18	-0.04	0.92												
MSSS2	0.18	0.22	0.33	-0.05	0.16	0.10	0.16	0.03	0.68	0.89											
SAFE1	0.07	0.06	0.20	-0.11	0.13	0.12	0.21	-0.06	0.59	0.74	0.90										
BCOPE1	0.18	0.20	0.30	0.24	0.19	0.18	0.24	0.25	0.11	0.10	0.02	0.78									
BCOPE2	-0.10	0.06	-0.03	0.34	0.38	0.19	0.08	0.16	0.04	0.02	-0.05	0.35	0.85								
PFSOC1	0.20	0.14	0.32	0.16	0.03	0.08	0.24	0.31	0.13	0.11	0.04	0.63	0.25	0.85							
BCOPE3	-0.12	0.10	0.09	-0.07	0.04	-0.15	0.12	-0.03	0.27	0.39	0.25	0.03	0.08	-0.12	0.71						
PFSOC2	-0.06	-0.07	0.15	0.14	0.20	0.07	0.17	-0.11	0.10	0.20	0.22	0.07	0.12	0.10	0.43	0.82					
DSD1	0.02	0.02	0.20	-0.03	0.06	-0.07	0.02	-0.23	0.16	0.23	0.11	0.07	0.16	0.11	0.50	0.55	0.88				
DSD2	0.15	0.04	0.13	-0.12	0.15	0.06	0.02	-0.30	0.15	0.15	0.11	0.07	-0.06	0.02	0.41	0.41	0.74	0.83			
DSD3	-0.10	-0.18	0.02	-0.18	-0.01	-0.07	0.15	0.03	0.07	0.13	0.02	-0.02	0.06	0.15	0.29	0.17	0.59	0.42	0.84		
SWLF	0.07	0.06	-0.05	0.49	0.22	0.35	-0.02	0.28	-0.19	-0.19	-0.16	0.11	0.21	-0.06	-0.28	-0.25	-0.49	-0.45	-0.34	0.88	
SHS	0.15	0.00	-0.03	0.37	0.01	0.37	-0.05	0.21	-0.24	-0.23	-0.12	0.08	-0.08	-0.04	-0.43	-0.23	-0.65	-0.41	-0.40	0.68	0.86
Mean	43.92	20.95	8.95	38.35	26.37	15.94	12.98	15.99	18.80	20.16	7.11	23.69	10.77	21.92	13.47	24.32	20.12	13.85	3.57	23.79	20.77
SD	10.10	3.27	2.08	8.61	5.18	3.18	5.81	4.70	10.68	9.36	5.41	4.38	3.17	5.98	3.63	6.81	6.02	4.40	1.37	6.47	4.43

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; MEIM1 = Recognition of Ethnicity MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFR1 = Received Peer Support PSSFR2 = Providing Peer Support; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel; MSSS1= Appraisal of Discrimination; MSSS2 = Appraisal of Campus Culture; SAFE1 = Alienation due to Cultural Barriers; SAFE2 = Interpersonal Stress; BCOPE1 = Active Coping; BCOPE2 = Seeking Support; PFSOC1 = Assertive Coping; BCOPE3 = Passive Coping; PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms; DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

Table 31. Intercorrelations and Reliability Coefficients for Bi-ethnic

	ARSMA1	MEIM1	MEIM2	PSSFA1	PSSFR1	PSSFR2	PSSUP1	PSSUP2	MSSS1	MSSS2	SAFE1	BCOPE1	BCOPE2	PFSOC1	BCOPE3	PFSOC2	DSD1	DSD2	DSD3	SWLF	SHS
ARSMA1	0.87																				
MEIM1	0.66	0.82																			
MEIM2	0.61	0.66	0.75																		
PSSFA1	0.21	0.26	0.11	0.91																	
PSSFR1	-0.03	0.10	-0.04	0.37	0.91																
PSSFR2	0.10	0.18	0.10	0.33	0.57	0.86															
PSSUP1	-0.05	-0.03	-0.08	0.08	0.21	0.17	0.87														
PSSUP2	0.00	-0.01	-0.01	0.18	0.34	0.33	0.59	0.85													
MSSS1	0.14	0.29	0.13	-0.08	-0.14	0.00	-0.14	-0.19	0.88												
MSSS2	0.36	0.38	0.36	-0.07	-0.18	-0.02	-0.06	-0.16	0.64	0.89											
SAFE1	-0.01	0.02	-0.02	-0.33	-0.18	-0.17	-0.03	-0.21	0.50	0.29	0.81										
BCOPE1	0.18	0.22	0.20	0.19	0.18	0.43	0.08	0.20	-0.02	0.02	-0.07	0.84									
BCOPE2	0.12	0.21	0.17	0.43	0.47	0.43	0.04	0.13	-0.12	-0.06	-0.19	0.54	0.90								
PFSOC1	0.10	0.10	0.15	0.26	0.10	0.34	0.20	0.29	0.01	-0.02	-0.14	0.65	0.44	0.85							
BCOPE3	-0.01	-0.07	-0.05	-0.37	-0.19	-0.10	-0.17	-0.19	0.13	0.07	0.33	-0.03	-0.20	-0.13	0.78						
PFSOC2	-0.02	-0.09	-0.02	-0.33	-0.18	-0.06	-0.06	-0.18	0.19	0.18	0.37	-0.03	0.00	-0.11	0.60	0.83					
DSD1	0.05	0.02	0.00	-0.28	-0.21	-0.15	-0.15	-0.29	0.16	0.19	0.25	-0.12	-0.12	-0.20	0.59	0.48	0.87				
DSD2	0.01	0.06	0.13	-0.34	-0.25	-0.18	-0.15	-0.34	0.22	0.31	0.18	-0.12	-0.08	-0.17	0.46	0.44	0.64	0.85			
DSD3	0.02	-0.13	0.06	-0.30	-0.25	-0.08	-0.18	-0.14	0.14	0.14	0.29	-0.07	-0.23	-0.05	0.32	0.19	0.46	0.27	0.80		
SWLF	0.07	0.06	-0.03	0.34	0.24	0.28	0.25	0.38	-0.16	-0.13	-0.25	0.22	0.21	0.25	-0.44	-0.34	-0.56	-0.48	-0.31	0.89	
SHS	0.12	0.09	-0.01	0.43	0.29	0.25	0.21	0.31	-0.22	-0.20	-0.17	0.18	0.27	0.17	-0.50	-0.33	-0.52	-0.53	-0.23	0.65	0.89
Mean	33.04	18.39	8.37	41.08	26.76	16.51	12.48	17.31	13.13	15.55	5.17	22.70	11.06	22.18	13.42	24.66	19.33	13.35	3.48	24.42	20.32
SD	9.99	3.71	2.25	8.14	6.05	3.04	5.58	4.83	7.45	7.22	3.32	4.84	3.50	5.62	3.94	6.71	6.01	4.35	1.10	6.64	4.72

Note. Reliability coefficients appear on the diagonal; ARSMA1 = Latino Orientation; MEIM1 = Recognition of Ethnicity MEIM2 = Exploration of Ethnicity; PSSFA1 = Received Family Support; PSSFR1 = Received Peer Support PSSFR2 = Providing Peer Support; PSSUP1 = Providing University Personnel Support; PSSUP2 = Received University Personnel; MSSS1= Appraisal of Discrimination; MSSS2 = Appraisal of Campus Culture; SAFE1 = Alienation due to Cultural Barriers; SAFE2 = Interpersonal Stress; BCOPE1 = Active Coping; BCOPE2 = Seeking Support; PFSOC1 = Assertive Coping; BCOPE3 = Passive Coping; PFSOC2 = Avoidant Coping; DSD1 = Emotional Depressive Symptoms; DSD2 = Physical Depressive Symptoms; DSD3 = Suicidal Symptoms; SWLF = Satisfaction with Life Scale; SHS = Subjective Happiness Scale

of the unconstrained factor loadings model. This result suggested that it was really the variances and covariances that differed between groups. To determine which variances and covariances were contributing to this overall inequality, the equality of each element in the Phi matrix was tested independently. Following the procedure suggested by Byrne (1998), a model was specified in which parameters of the Phi matrix (i.e., Φ_{11}; variance of Individual Cultural Characteristics) were cumulatively constrained across groups. The fit of the resulting model was then compared to the model in which only the factor loadings were constrained equal across groups. If the $\chi^2_{difference}$ test revealed that the two models were significantly different, the constrained Phi parameter was allowed to be estimated in the subsequent model. However, if the $\chi^2_{difference}$ test was not significantly different, the Phi parameter was held equal across groups in the subsequent model. All elements in the Phi matrix were tested in this manner and equality constraints were maintained only for parameters found to be equal for both groups. These tests of the Phi matrix revealed that three variances (e.g., Individual Cultural Characteristics, Appraisal of Sociocultural Stress, Distress) and three covariances (e.g., Perceived Social Support and Wellbeing, Appraisal of Sociocultural Stress and Indirect Coping, Appraisal of Sociocultural Stress and Wellbeing) were nonequivalent across groups. The fit of the model in which these variances and covariances were freely estimated for both groups [χ^2 (df 346, N=201) = 442.77, $p < 0.001$, GFI = 0.84, RMSEA = 0.05, CFI = 0.92, NNFI = 0.90, PNFI = 0.63, PGFI = 1.26] was then compared to the above model in which factor loadings and error variances and covariances were estimated for both groups. The $\chi^2_{difference}$ test for these two models was not significant ($p = 0.43$). Please see Table 23. As a result, we can assume that these six variances and covariances are what differ across

groups and not the factor loadings. Therefore, the indicators are believed to measure the latent variables in comparable ways for mono-ethnic and bi-ethnic participants.

A test of group differences in the means of the latent constructs revealed that compared to mono-ethnic participants, bi-ethnic participants exhibited significantly higher levels on Indirect Coping ($\kappa = 1.18$, $t = 2.23$, $p < 0.05$, $D = -0.45$) as well as lower levels on Individual Cultural Characteristics ($\kappa = -7.46$, $t = -5.40$, $p < 0.001$, $D = 0.93$) and Appraisal of Sociocultural Stress ($\kappa = -3.03$, $t = -2.28$, $p < 0.05$, $D = 0.46$). Statistically significant differences were not evident on Perceived Social Support ($\kappa = 1.67$, $t = 1.96$, $p = 0.05$, $D = -0.39$) Direct Coping ($\kappa = -0.73$, $t = -1.00$, $p > 0.10$, $D = 0.20$), Distress ($\kappa = -0.81$, $t = -1.11$, $p > 0.20$, $D = 0.28$), Wellbeing ($\kappa = -0.57$, $t = -1.23$, $p > 0.20$, $D = 0.24$).

The relative fit of the model with its factor loadings and structural paths constrained to equality [χ^2 (df 358, N=201) = 483.05, $p < 0.001$, GFI = 0.83, RMSEA = 0.06, CFI = 0.91, NNFI = 0.89, PNFI = 0.62, PGFI = 1.22] was found to be significantly worse ($\chi^2_{difference}$ test $p < 0.001$) than that of the unconstrained model [χ^2 (df 336, N=201) = 438.17, $p < 0.001$, GFI = 0.84, RMSEA = 0.06, CFI = 0.91, NNFI = 0.89, PNFI = 0.62, PGFI = 1.22]. Please see Table 23. Thus it can be concluded that the structural paths (relationships among the latent variables) differ for bi-ethnic and mono-ethnic participants.

More specifically, the path from Individual Cultural Characteristics to Direct Coping (standardized $\beta = 0.16$, $t = 1.62$, $p > 0.10$, two-tailed test; Figure 14) was not statistically significant for bi-ethnic participants. This same path (Individual Cultural Characteristics to Direct Coping; standardized $\beta = 0.06$, $t = 0.22$, $p > 0.20$, two-tailed test;

Figure 15) in addition to the paths from Direct Coping to Wellbeing (standardized β = 0.14, t = 1.34, $p > 0.10$, two-tailed test; Figure 15) Perceived Social Support to both Direct Coping (standardized β = 0.85, t = 1.61, $p > 0.10$, two-tailed test; Figure 15) and Indirect Coping (standardized β = -0.07, t = -0.33, $p > 0.20$, two-tailed test; Figure 15) were also not significant for mono-ethnic participants.

Three statistically significant indirect relationships were found for mono-ethnic and bi-ethnic participants. Indirect relationships between Appraisal of Sociocultural Stress to both Distress (mono-ethnic: η = 0.25, t = 2.56, $p < 0.02$; bi-ethnic: η = 0.21, t = 2.24, $p < .05$) and Wellbeing (mono-ethnic: η = -0.15, t = -2.33, $p < .02$; bi-ethnic: η = -0.16, t = -2.14, $p < .05$) and Indirect Coping to Wellbeing (mono-ethnic: η = -0.41, t = -2.56, $p < .02$; bi-ethnic: η = -0.64, t = -3.15, $p < 0.01$) were also found. Thus, mono-ethnic and bi-ethnic participants who experienced sociocultural stress utilized indirect coping strategies, experienced higher levels of distress and lower levels of wellbeing.

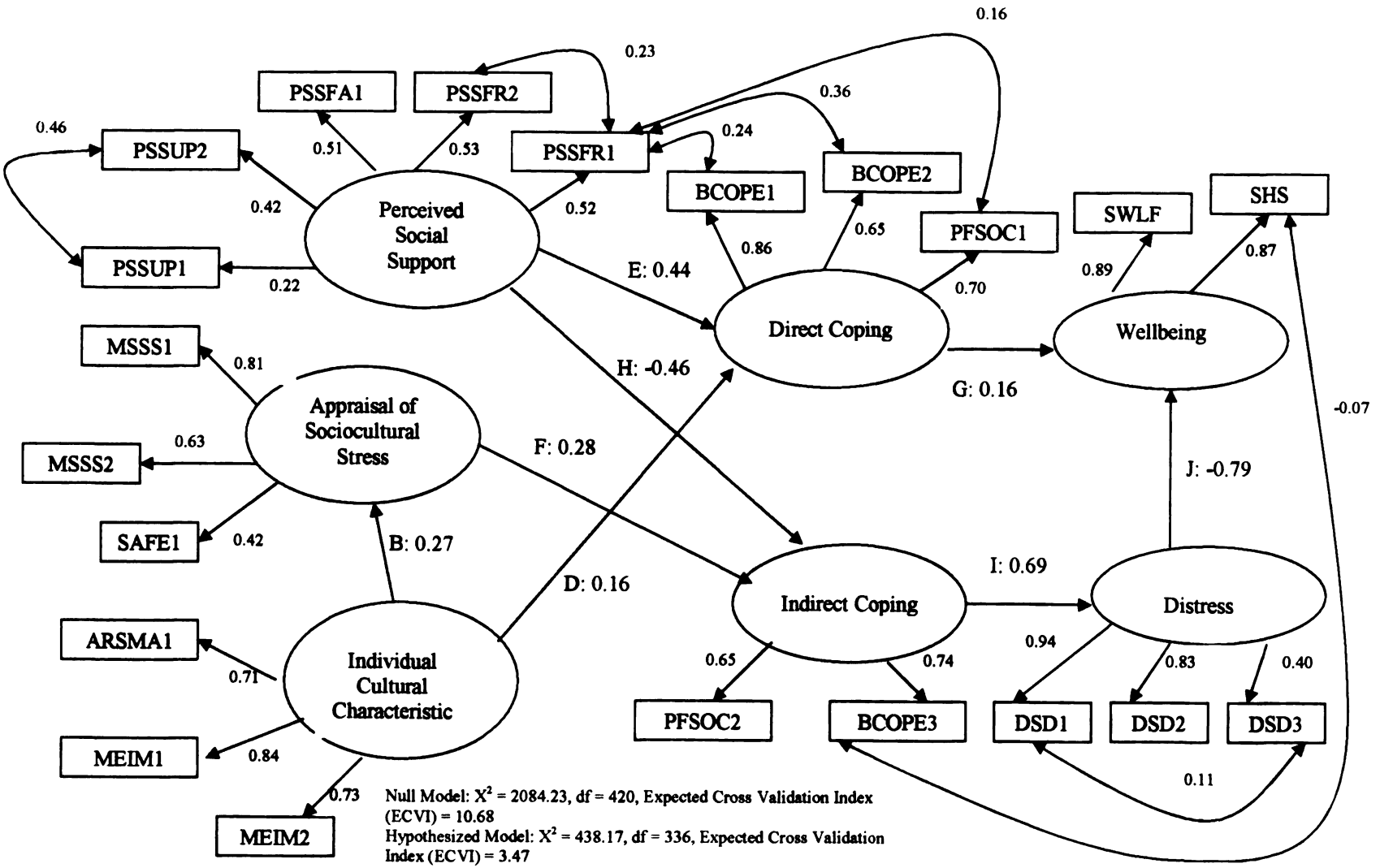

Figure 14. Respecified Model for Bi-Ethnic Participants Results

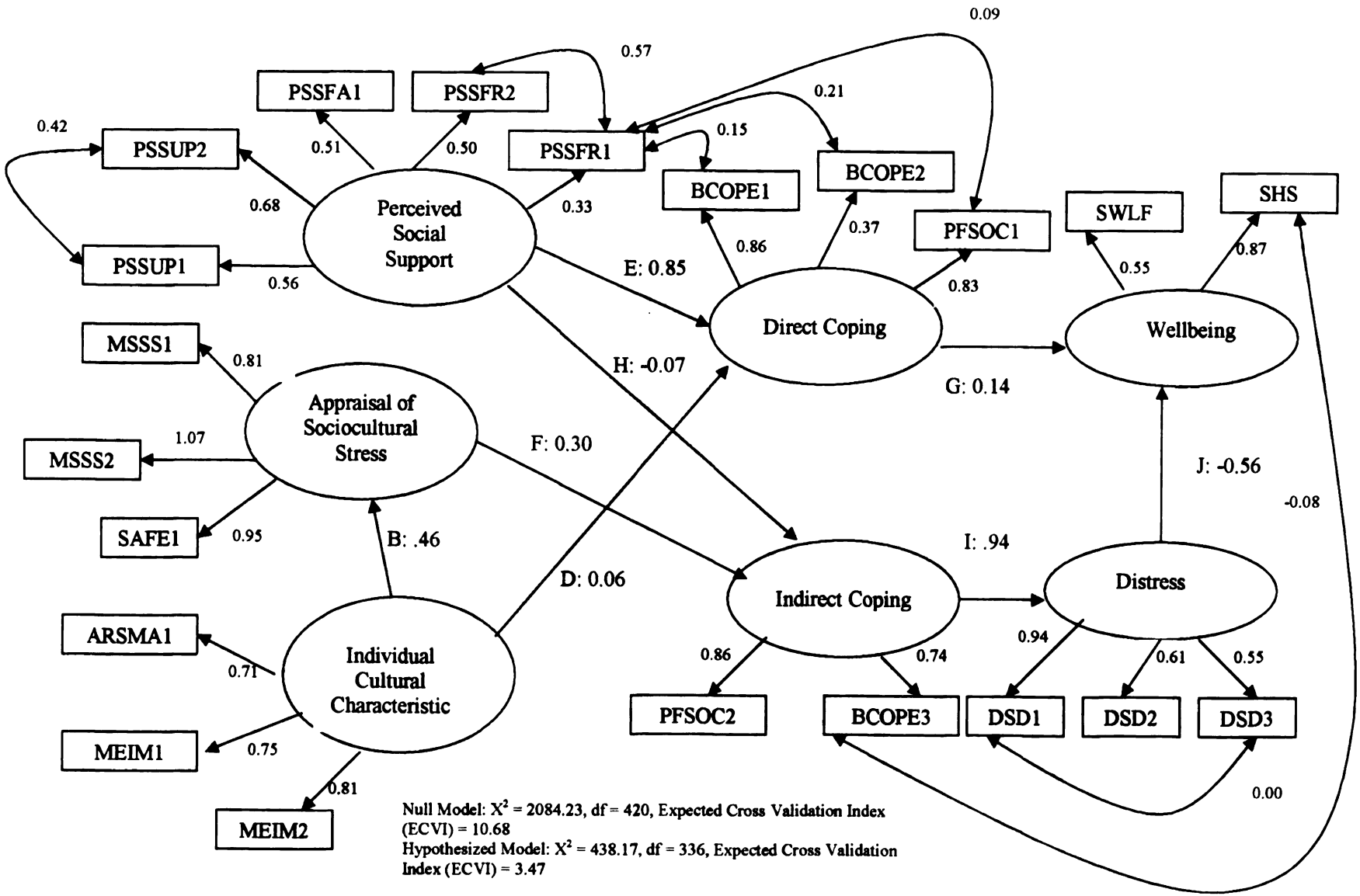

Figure 15. Respecified Model for Mono-ethnic Participants Results

Chapter 5

DISCUSSION

This study examined an adapted stress-mental health model with MSU Latina/o students. Individual cultural characteristics (i.e., acculturation level, ethnic identity) and perceived social support (i.e., from family, peers, university personnel) were hypothesized to directly effect the appraisal of sociocultural stress (i.e., acculturative stress, minority status stress) and coping strategies (i.e., direct coping, indirect coping). Appraisal of sociocultural stress was hypothesized to influence coping strategies and mediate the relationship between individual cultural characteristics, perceived social support, and coping strategies. Coping strategies in turn were hypothesized to directly effect mental health (i.e., wellbeing, distress) and mediate the relationship between individual cultural characteristics, perceived social support, appraisal of sociocultural stress and mental health. In addition, individual cultural characteristics were hypothesized to influence perceived social support.

This study is the first to empirically evaluate an adaptation of Taylor and Aspinwall's (1996) model with Latina/o undergraduate students. Although previous researchers have examined parts of this model, no empirical studies have examined a model that includes processes variables (i.e., appraisal of sociocultural stress, direct coping, indirect coping). In addition, few empirical or theoretical models have examined the role of cultural characteristics (i.e., acculturation level, ethnic identity) in the relationship between culturally specific, chronic stress (i.e., minority status stress, acculturative stress) and mental health.

Although it was expected that individuals at higher levels of ethnic identity and acculturation would appraise lower levels of sociocultural stress, the results do not suggest this. Unlike the majority of studies in the area of acculturation level, ethnic identity, minority status stress, and/or acculturative stress, these results are similar to the few that have found greater sociocultural stress among students with high levels of acculturation and ethnic identity (e.g., Gilbert & Cervantes, 1986; Holk et al, 1984; as cited by Neff and Hoppe, 1993). However, consistent with previous research (e.g., Mena et al., 1987; Vazquez & Garcia-Vazquez, 1995), being bicultural and highly acculturated was directly related to the use of direct coping strategies.

Although a number of researchers have found that perceived social support is significantly related to the experience and report of less sociocultural alienation and racial/ethnic tensions (Hovey & King, 1996; Solberg & Villarreal, 1997), a direct relationship between perceived social support and appraisal of sociocultural stress was not supported. Therefore, for this sample, appraisal of sociocultural stress did not mediate the relationship between perceived social support and coping strategies, as hypothesized. Furthermore, a direct relationship between individual cultural characteristics and perceived social support was not found. Thus, participants' acculturation and ethnic identity levels did not contribute to their perceptions of support. This result is consistent with Sabogal et al's (1987) finding that perceived social support, particularly from family, remains high despite acculturation level.

The respecified model (Model 4) suggests that perceived social support is directly related to both direct and indirect coping strategies. These results are in agreement with several studies (e.g., Alva, 1991; Cooper et al., 1993, 1998; Fiske, 1988; Gloria &

Rodriguez, 2000; Lango, 1995; Lopez, 1995; Rodriguez, 1994, Ruggiero et al., 1997) that have found that perceived social support can promote either indirect or direct coping strategies.

Although in general the perception of stress has been found to strongly predict both direct and indirect coping strategies, the respecified model indicated that appraisal of sociocultural was only directly related to indirect coping strategies and thus mediated the relationship between individual cultural characteristics and indirect coping strategies. These results are consistent with previous research indicating that ethnic minority groups utilize indirect coping strategies to cope with sociocultural stress (Phenice & Griffore, 1994; Ruggiero et al., 1997; Schmader et al., 2001).

The respecified model also suggests that direct and indirect coping strategies directly influence wellbeing and distress, respectively. Furthermore, direct coping mediates the relationship between individual cultural characteristics, perceived social support, and wellbeing. Similarly, indirect coping mediates the relationship between perceived social support, appraisal of sociocultural stress and distress. The relationship between direct and indirect coping with wellbeing and distress, respectively, parallel the findings of several researchers who have found that indirect coping is associated with higher levels of depression (D'Zurilla et al., 1998; Essau & Trommsdorff, 1996) while direct coping is associated with higher levels of personal and emotional adjustment (Leong et al., 1997; Nezu et al., 1986).

The respecified model provided support for several indirect relationships. Individual cultural characteristics were found to be indirectly related to indirect coping and distress. Perceived social support was indirectly related to distress and wellbeing.

Similarly, appraisal of sociocultural stress was found to be indirectly related to distress and wellbeing. Finally, an indirect effect from indirect coping to wellbeing was found. These relationships suggest that the appraisal of sociocultural stress may be buffered by perceived social support, ethnic identity and acculturation because they are directly related to direct coping and direct coping is related to wellbeing. However, the appraisal of sociocultural stress may be promoted by perceived social support because it is directly related to indirect coping and indirect coping is directly related to distress.

Additional analyses revealed that neither gender nor SES (parent education level and financial status comparison) moderated the relationships specified in the model. This result suggests that the stress-mental health process is similar for men and women as well as low SES and high SES participants. However, consistent with the literature, analyses revealed that there were mean differences between males and females as well as low SES and high SES participants on several of the latent constructs of the final model. For example, females reported significantly higher levels of perceived social support and wellbeing compared to males. This finding is supported by several researchers (Turner & Marino, 1994; Zani, Cicognani, & Albanesi, 2000; Zimet, Darhle, Zimet and Farley, 1988; as cited in Prezza & Pacilli, 2002) who have found that compared to males, female students perceive more social support. In addition, although the majority of the research reports that women endorse lower levels of wellbeing compare to men, a few studies have found that women from national U.S., samples (Woods, Rhodes, & Whelan, 1989) and college samples (Frank, Diener, & Sandvik, 1991) scored higher on global happiness and wellbeing than men did. Results also indicated that compared to low SES participants, high SES participants reported significantly higher levels of perceived social

support and wellbeing. Furthermore, high SES participants reported significantly lower levels of appraisal of sociocultural stress than low SES participants. These finding are consistent with the findings of several researchers (e.g., Cristo, 1989, Vega et al, 1985, 1986) who indicate that compared to high SES Latinos, low SES Latinos report higher levels of acculturative stress and lower levels of perceived social support and wellbeing.

The only moderator found in this study was heritage. Results indicated that several relationships among the constructs in the model significantly differed for mono-ethnic and bi-ethnic participants. In the bi-ethnic group, individual cultural characteristics were not significantly related to direct coping. Therefore, the relationship between individual cultural characteristics and wellbeing was not mediated by direct coping. However, the relationship of individual cultural characteristics and wellbeing was mediated by appraisal of sociocultural stress, indirect coping, and distress. Furthermore, the relationship between perceived social support and wellbeing was mediated by direct coping. Thus, for bi-ethnic participants, it appears that high levels of wellbeing are promoted by perceived social support while low levels are promoted by individual cultural characteristics.

The direct path from individual cultural characteristics to direct coping was also not significant for the mono-ethnic group. Therefore, the relationship between individual cultural characteristics and wellbeing was not mediated by direct coping. Three additional direct paths were also found to be non significant for the mono-ethnic group. These included the direct paths from perceived social support to direct and indirect coping, respectively, and the structural path from direct coping to wellbeing. Therefore, direct and indirect coping did not mediate the relationship between perceived social

support and wellbeing. In fact, for mono-ethnic participants only four of the eight structural paths were significant. As a result, the relationship between individual cultural characteristics and wellbeing was found to be mediated only by appraisal of sociocultural stress, indirect coping, and distress.

The analyses of group mean differences revealed that compared to mono-ethnic participants, bi-ethnic participants reported significantly higher levels of indirect coping and significantly lower levels on individual cultural characteristics and appraisal of sociocultural stress. Although most of the studies investigating differences within Latino students are qualitative in nature with small sample sizes (Weinstein, 1998), a few quantitative studies have found significant differences between mono-ethnic and bi-ethnic Latina/o individuals. For example, in studies with college students Stephan and Stephan (1991) and Phinney and Alpuria (1996) found that multi-ethnic students were more tolerant of other ethnic groups than mono-ethnic students. This finding may explain the bi-ethnic participants' reported low levels of sociocultural stress. The bi-ethnic participants' lower mean scores on individual cultural characteristics is supported by Weinstein's (1998) finding that mono-ethnic Latinos have stronger Latino ethnic identities and have more Latino cultural knowledge and exposure. In addition, several researchers have found that language usage affects ethnic identification. For example having the ability to speak Spanish has been reported to be related to having a stronger Latina/o ethnicity (Felix-Ortiz, Newcomb, & Myers, 1994; Heller, 1992; Liebkind, 1992; Phinney 1990; as cited in Weinstein 1998). Indeed, in this sample, mono-ethnic participants reported higher levels of speaking Spanish than bi-ethnic participants. No studies were found supporting the present finding indicating that bi-ethnic Latinos report

higher levels of indirect coping than mono-ethnic Latinos. However, since perceived social support was found to directly affect indirect coping for bi-ethnic and not mono-ethnic participants, the significant difference in means may reflect the findings in the literature that indicate that individuals who perceive little social support are likely to engage in indirect coping strategies.

Limitations

Several methodological and substantive explanations may account for the above findings. More specifically, in terms of methodology, although the measures used in this study were selected because of their perceived adequacy in assessing the latent constructs, all were rated using Likert scales. Research has found than Latina/os tend to respond to Likert scales on extreme ends of the scales (Marin & Marin, 1991). Thus findings may be exaggerated in one direction or another. Indeed, participants' scores tended to be slightly skewed in positive directions. This study assumes that participants provided honest answers. However, students might have presented themselves in a more favorable light, despite the anonymous disclaimer, perhaps as an attempt to defend their ethnic group or to prove that they were functioning adequately within the university environment.

The measures used in this study were also selected because they have been found to be both valid and reliable with Latina/o undergraduates. However, reliability analyses revealed that several scales had less than adequate reliability coefficients ($\alpha < 0.80$). Furthermore, problems with many of the measures were evident when the initial confirmatory factor analyses demonstrated that the reported factor structures did not fit the data for this sample adequately. As a result, most of the measures used in this study

required exploratory factor analyses to improve the factor structure. Floyd and Widaman (1995) indicate that this process may lead to problems that resulted in the poor fit of the adapted model. First, there are certain differences in the analytic techniques of exploratory and confirmatory analysis. Exploratory analysis focuses on retaining factors that account for significant amounts of variance in the data, whereas confirmatory analysis assesses goodness of fit based on the variance remaining after the factors are taken into account. Thus, exploratory analyses may identify factors that account for significant variance in the data and confirmatory analyses may show that significant additional variance remains. Second, orthogonal solutions from exploratory analyses may not be confirmable in LISREL because forcing zero order correlations among scales can create problems with under-identification in confirmatory analysis. Confirmatory analysis requires loadings of some variables to be zero on scales not thought to be represented by that variable. Third, it is difficult to obtain a satisfactory fit when indicators are likely to load significantly on more than one variable. Indeed, several indicators presented problems in the initial adapted model. For example, SAFE2 demonstrated poor discriminant validity because it loaded on more than one latent variable. Furthermore, the correlations between the indicators of several latent variables (i.e., individual cultural characteristics, perceived social support, coping, mental health) were non significant indicating that there was poor convergent validity among the measures of the construct.

Another shortcoming of this research is the relatively small sample size. Researchers (e.g., MacCallum, Browne, & Sugawara, 1996; MacCallum & Hong 1997) have developed complex procedures for statistical power analyses and determination of

minimum sample size which involve knowledge of distributional properties (e.g., confidence intervals) of several fit indices produced in SEM analyses. However, because of the framework from which these procedures are conducted, the results often indicate that a large sample is not necessary when utilizing SEM (MacCallum et al., 1996). Nevertheless, Bentler and Chou (1987) recommend that the ratio of sample size to the number of parameters to be estimated should be 5:1. The number of parameters estimated for the respecified model was 64. Given this number of parameters, the minimum suggested sample size for this study was 320. The sample size of this study (N = 201) was less than ideal, which may have contributed to the model's fit.

In terms of substantive differences, there are several factors that might have affected the results of this study. For example, specific characteristics of participants were not addressed. Thus, the results of this study may not be generalizable to other Latina/o students across the country. Undeniably, there were pre-existing differences between participants that were not accounted for. For instance, the assignment of "Latina/o" or "Hispanic" to all participants does not capture the heterogeneity among Latinos. Mexican-American, Central-American, South-American, European, and Caribbean students participated in this study. Furthermore, the majority of the students were bi-ethic as evidenced by the 122 students with one Latina/o parent and one non-Latina/o parent. All of these ethnic group differences were not accounted for in the hypothesis testing due to unequal numbers with a significantly larger number of bi-ethnic participants.

The return rate for the questionnaire packets was approximately 36%. The students who returned the questionnaire packet may have comprised a unique group. For example, because these students were more involved with Latina/o culture (e.g., high levels of ethnic identity and acculturation), the likelihood that they would return the questionnaire regarding Latina/o students may have been increased. In addition, the larger percentage of women in this study may also reflect the fact that women are more likely to participate in research. Finally, the majority of the participants claimed to be residents of the state of Michigan. Thus, their perceptions and experiences might not reflect those of Latina/o undergraduates from other states and universities that have a larger population of Latina/os. These sample characteristics may have affected the outcome and limit the generalizability of these findings.

Conclusions and Implications

A culture-specific adaptation of Taylor and Aspinwall's (1996) Model of Mediating and Moderating Processes in Psychosocial Stress was evaluated in this study to address the lack of research examining dynamic stress-mental health models with Latina/o undergraduates at predominately White, Midwestern, universities. Although complex models outlining the dynamics of the stress-mental health relations have been developed (e.g., Billings & Moos, 1982; Holahan et al., 1997; Miranda & Castro, 1985; Taylor & Aspinwall, 1996; Warheit, 1979), no studies examining these or adaptations of these models with Latina/o undergraduates have been conducted. Furthermore, most research in the area of stress-mental health with Latina/o undergraduates have examined only two or three variables simultaneously at universities where there is a significant concentration of Latinos (e.g., Aspinwall & Taylor, 1992; Morris, 1997; Padilla et al.,

1986; Quinones, 1996; Rodriguez et al., 2000; Saldana, 1994; Shibazaki, 1999; Solberg & Villarreal, 1997; Suarez et al., 1997).

As recommended by transactional model theorists (i.e., Billings & Moos, 1982a, 1982b; Lazarus & Folkman, 1984; Miranda & Castro, 1985), this study attempted to outline the dynamics of the stress-mental health relationships by including structural properties of the person and environment as well as the processes (i.e., appraisal, coping) that take place between the experience and outcome of a stressor. Because the adapted model proposed in this study was examined at one point in time, the transactional nature of the variables in the model could not be demonstrated. Despite the difficulties associated with conducting a longitudinal study, researchers would be able to understand how short-range psychological changes which are related to stress and coping develop into maladaptive outcomes.

To address researchers'(e.g., Leyva, 1990; Miranda & Castro, 1985; Rodriquez et al, 2000, Saldana, 1994; Warheit, 1979) call for studies that investigate the role of culture in the relationship between stress and mental health, specific culture-relevant dimensions of each component of Taylor and Aspinwall's (1996) model were examined. Thus, this study focused on dimensions found to be salient for Latina/o ethnicity and culture (i.e., acculturation level, ethnic identity, acculturative stress, minority status stress) as it expanded the literature on stress-mental health by being the first to empirically test the mediational processes by which individual cultural characteristics and perceived social support facilitate coping with sociocultural stress and consequently mental health.

Although a culture-specific adaptation of Taylor & Aspinwall's (1996) model was examined to address the lack of research in the area of stress-mental health among

Latina/o undergraduate students, this model must be evaluated in other geographical locations and educational institutions. The Latina/o population in the United States is a very heterogeneous group and this fact is reflected among the Latina/o students at MSU. As stated above, 122 (61%) participants were bi-ethnic. The most recent statistics (e.g., United States Bureau of the Census, 1999 Falcon, Aguirre-Molina, & Molina, 2001) indicate that Latino/non-Latino intermarriages in the United States range between 27-28 percent. In some states (e.g., California) the intermarriage rate for Latinos is more than 50 percent (Colorito, 1999). Given these recent reports, the percentage of bi-ethnic individuals in this sample is relatively high. However, this study does parallel reports that indicate that the majority of Latino interethnic marriages are ones in which one partner is non-Latina/o White and the other partner is of Latina/o descent (Negy & Snyder, 2000). Indeed, 95% (116) of the bi-ethnic participants reported that one parent was non-Latina/o White.

The present study provides evidence of the variability of bi-ethnic Latinos' self identification. Overall, participants provided a mono-ethnic identity while only 4.5% indicated a mixed heritage. Phinney and Alpuria (1996) reported a similar finding. In their sample of college students, only about one fifth indicated that they were of mixed heritage. Furthermore, the researchers found that multi-ethnic students' ethnic self-labels differed according to the ethnic composition of the college. For example, the use of a White versus a Latina/o self-label was used by almost half of the respondents with a White parent on a predominantly White college campus but by only one student at a predominantly minority campus. This result was not evident with this sample, perhaps, as Phinney and Alpuria (1996) suggest, it was because of the way the question of

ethnicity was asked. In this study, students were asked to indicate their ethnicity by choosing among six responses (e.g., Mexican, Mexican-American, Chicana/o, Puerto Rican, Cuban, Other (write in)). Perhaps if there would have been a mixed option more participants would have identified themselves as bi-ethnic or of mixed heritage. Bi-ethnic individuals in this study were identified only because their parents' ethnicity was elicited.

Phinney and Alpuria (1996) suggest that students' self-identification could reflect the pre-selection of the campus by a certain type of individual. Thus, just as it is conceivable that students of mixed heritage in Phinney and Alpuria's study chose to attend a predominately White university on the basis of their self-identification as White; it is conceivable that bi-ethnic students in this study chose to attend a predominantly White university on the basis of their mixed Latina/o/White heritage. For example, despite the fact that approximately 84% of the sample indicated that they were residents of the state of Michigan, it is possible that bi-ethnic Latina/o students chose to attend a predominantly White university because of their dual heritage. In addition, it may also be that interethnic married couples (Latina/o/White) are more likely to encourage their sons and daughters to attend a predominantly White university.

Phinney and Alpuria (1996) also suggest that students' self-identification could reflect the influence of the campus setting on the individual. Indeed, various factors within the college environment have been found to impact multi-ethnic students' self-identification. For example, Renn (1999) found that multi-ethnic students' self-identification at three predominantly White, East coast colleges was shaped by their ability to fit into groups of mono-ethnic students, to move between mono-ethnic groups,

and to create a separate group of mixed heritage students. The major determinants of students' identity choices were the campus racial/ethnic demographics (e.g., size of multi-ethnic population) and the peer culture (e.g., acceptance of multi-ethnicity). Therefore, although in general, bi-ethnic participants in this study reported high levels of ethnic identity and acculturation, this does not reflect their level of comfort in identifying as bi-ethnic. The level of comfort Latina/o participants feel in regards to self-identifying as bi-ethnic may be due to the lack of a formal multi-ethnic organization at MSU. In addition, the majority of these bi-ethnic participants may choose to identify themselves as mono-ethnic Latinos because they cannot easily move among Latina/o organizations and non-Latina/o organizations without compromising their privately-held bicultural heritage. This predicament may explain the resulting positive relationship between individual cultural characteristics and appraisal of sociocultural stress. Perhaps if the multi-ethnic campus population was larger at MSU and the peer culture was more supportive of multi-ethnic students' movement among the various social groups, bi-ethnic Latina/os would be more comfortable publicly expressing their dual heritage.

When the respecified model was tested between bi-ethnic and mono-ethnic participants, the relationships among the constructs differed. A major difference was found in the relationship between perceived social support and wellbeing. More specifically, perceived social support was found to promote both high and low levels of wellbeing for bi-ethnic participants but not for mono-ethnic participants. This result conflicts with previous studies conducted with mono-ethnic Latina/os indicating that social support promotes poor mental health outcomes(Vega, et al., 1985) and those indicating that family support (e.g., Freeberg & Stein, 1996; Lamborn et al., 1997;

Solberg et al., 1994) and support from university personnel (Arellano & Padilla, 1996; Solberg, 1990) promote wellbeing. This result may be due to the fact that perceived formal and informal social support were designated as indicators of the latent variable perceived social support. Weinstein's (1998) finding that mono-ethnic Latinos live in more homogeneous Latino neighborhoods may explain why the relationships between social support and distress and wellbeing were not significant for mono-ethnic participants. Perhaps the campus social network was too heterogeneous compared to their social network at home. Perhaps if perceived social support would have been separated into two support constructs (e.g., formal and informal) for mono-ethnic individuals, one of them would have been found to promote wellbeing. However, if the social support construct was separated and the outcome remained the same, it would suggest that the relationship between social support and mental health outcomes for mono-ethnic participants in this study is considerably more complex than hypothesized.

The above findings parallel the few studies with non-clinical U.S. samples that have found that multi-ethnic individuals are at no psychological disadvantage in comparison to mono-ethnic individuals (Phinney & Alpuria, 1996). However, the present findings correspond with the few studies (e.g., Renn, 1999; Weinstein, 1998) that indicate that bi-ethnic Latinos are not identical to their mono-ethnic peers. The previous and current findings seem to support the notion that bi-ethnic and mono-ethnic heritage individuals differ on certain constructs (e.g., ethnic identity, social support) that can ultimately impact mental health outcomes.

Caution is advised when trying to apply information such as is presented in this study to Latinos as a whole. Nevertheless, future research with Latina/o undergraduate students should continue to focus upon dynamic models of the relationship between stress and mental health. Despite the limitations encountered in dealing with complex models (i.e., too difficult, less feasible, less understandable; Slavin et al., 1991) the inclusion of mediating and moderating variables helps to account for greater proportions of variance in outcomes (Groag, 1996; Holahan et al., 1997). Therefore, research should not limit itself to the investigation of stable, structural properties of the person and environment, because it ignores the changing processes that impact mental health outcomes. Future research should also continue its endeavors at arriving at a more adequate, comprehensive conceptual model of stress-mental health for Latina/o undergraduate students. Such a model should focus on measurement issues, particularly content validity (Slavin et al., 1991). Thus, researchers should work toward the development of instruments which are culturally sensitive, encompassing salient issues in the relationship between stress and mental health for Latinos.

The present study indicates that over 50% of the participants were bi-ethnic and suggests justification for the study of multi-ethnic individuals as a group. In broader terms, this study also raises concerns about the use of ethnic/racial categories in higher education and in the United States as a whole. Statistics of intermarriage indicate that the number of Latino interethnic marriages is increasing. However, multi-ethnic Latinos are rarely given an opportunity to identity themselves on questionnaires, because researchers generally categorize Latinos as belonging to a single ethnic group. Therefore, researchers should consider individuals' parental ethnicity or risk obtaining results that are distorted

or lack statistical significance. Researchers should also realize that studies of multi-ethnic people can contribute both theoretically and methodologically to the study of culture and ethnicity (Phinney & Alpuria, 1996).

The results of this study may be relevant to various university personnel and those interested in providing relevant and context-specific services to Latina/o students. For example, findings may encourage university service providers to consider and integrate contextual and ethnically relevant constructs into their service delivery. Thus, individuals working with Latina/o students should assess whether experiences of acculturative stress and/or minority status distress are a factor in their distress (i.e., depression). This study indicated that having high levels of ethnic identity and acculturation was associated with use of direct coping strategies. Because direct coping strategies are associated with wellbeing, assisting students to learn healthy ways of dealing with minority status distress and/or acculturative stress may be effective in ameliorating emotional distress that may be associated with sociocultural stress. This study also indicated that perceived social support (i.e., from family, peers, university personnel) can influence distress and wellbeing. Therefore, university personnel should be sensitive to the needs of Latina/o students in general by recognizing that campus resources are often unavailable, inappropriate, or ineffectual in addressing ethnically relevant dilemmas. Thus, universities might encourage special seminars or support groups that address sociocultural stress and enhance the peer network. Additionally, universities could become more active in encouraging families of Latina/o students to become more involved with the university environment (e.g., orientation, resident life) so that both students and their families have a better sense of what they must

encounter.

The results of this study may also be relevant to both mono-ethnic and bi-ethnic Latina/o individuals. For example, bi-ethnic individuals may benefit from knowing that choosing one existing mono-ethnic category, moving between existing mono-ethnic categories, creating a new multi-ethnic category, or choosing to not identify with any ethnic category are all acceptable options. These options are believed by many (e.g., Kerwin & Ponterotto, 1995; Renn, 1998) to be steps toward a bi-ethnic identity formation that are dependent on numerous personal, societal, and environmental factors. In addition, bi-ethnic and mono-ethnic Latinos must understand that identity development is a lifelong process that involves a continuing self-exploration. Finally, the goal for both mono-ethnic and bi-ethnic Latinos in the United States should be to realize that that they can live in an effective, healthy, and satisfying way by, seeking positive role models/mentors, learning about the history and contributions of multiethnic and mono-ethnic Latinos, searching for opportunities to explore what it means to be a mono-ethnic or bi-ethnic Latina/o in our society, and increasing interpersonal relations with individuals of varying cultures.

Appendices A-M

Appendix A

Demographic Information Form

1. Do you prefer to be referred to as: (circle)

   1. Hispanic 2. Latina/Latino 3. Spanish

2. With what Spanish/Hispanic/Latino ethnic group do you identify (circle)

   1. Mexican 2. Mexican American 3. Chicana/o

   4. Puerto Rican 5. Cuban 6. other (write in) _____

3. What is your race? (circle)

   1. White 2. Afro-Latino 3. Indigenous

   4. Asian 5. other (write in) _____

4. What is your Age? _____

5. What is your gender? (circle) 1. male or 2. female

6. Compared to other students at MSU, would you say that your family is financially worse off or better off than other families? (circle)

   1. Much worse off 2. Somewhat worse off 3. About the same

   4. Better off 5. Much better off

7. Which persons were born in the United States? (circle)

You	1. yes	2. no	3. don't know
Your mother	1. yes	2. no	3. don't know
Your father	1. yes	2. no	3. don't know
Your mother's mother	1. yes	2. no	3. don't know
Your mother's father	1. yes	2. no	3. don't know
Your father's mother	1. yes	2. no	3. don't know
Your father's father	1. yes	2. no	3. don't know

8. Are you a U.S. Citizen or Resident? (circle) 1. yes or 2. no

9. Are you a Michigan Resident? (circle) 1. yes or 2. no

10. To what ethnic/racial group does your father belong? (circle)

    1. White/Anglo 2. Mexican American 3. Mexican National

    4. other Hispanic (write) _____ 5. other (write)_____

11. To what ethnic/racial group does your mother belong? (circle)

1. White/Anglo 2. Mexican American 3. Mexican National

4. other Hispanic (write) _____ 5. other (write)_____

12. What is the highest level of education completed by your MOTHER (or stepmother or female guardian) and your FATHER (or stepfather or male guardian)? Mark only the highest level completed. **Please check only one for each column.**

	MOTHER	FATHER
Graduated from junior high school and stopped there.	_____	_____
Did not graduate from high school or receive diploma.	_____	_____
Graduated from high school or received GED and stopped there.	_____	_____
Completed a technical training program such as business school, beauty school, welding, electronics, automobile repair, etc.	_____	_____
Graduated from college and stopped there.	_____	_____
Attended graduate school, but did not finish.	_____	_____
Got a professional or graduate degree (doctor, lawyer.)	_____	_____
Do not know.	_____	_____

13. What is your year in college? (circle)

1. first 2. second 3. third 4. fourth 5. fifth or beyond

14. What is your major? _____

15. What is your GPA? (circle) 1.0 1.5 2.0 2.5 3.0 3.5 4.0

16. What type of student housing do you have? (circle)

1. on campus 2. off-campus w/parents 3. off campus w/spouse/partner

4. off campus alone 5. off campus w/other family 6. other (please specify)

17. How many organizations related to your ethnic group are you involved in at MSU?_____

18. Please indicate the percentage each of the items below contributes to your college education. (percent = 100)

1. _____ parents pay 2. _____ grandparents pay 3. _____ my savings

4. _____ loans 5. _____ scholarships 6. _____ grants/FA

7. _____ my working

Appendix B

Minority Student Stress Scale (MSSS; Saldana, 1994)

The following statements refer to your experiences as a Latina/o or Hispanic student. Please indicate how stressful each item has been **since you entered college** by circling the number that best applies.

0 not applicable	**1 not at all stressful**	**2 slightly stressful**	**3 moderately stressful**	**4 quite a bit stressful**	**5 extremely stressful**

1.	Not enough professors of my ethnic group.	0	1	2	3	4	5
2.	Few students of my ethnic group in my classes	0	1	2	3	4	5
3.	Racist policies and practices at this university.	0	1	2	3	4	5
4.	This university lacking concern and support for the needs of students of my ethnic group.	0	1	2	3	4	5
5.	Few courses involving issues relevant to my ethnic group.	0	1	2	3	4	5
6.	Seeing members of my ethic group doing low-status jobs and Anglos are in high-status jobs.	0	1	2	3	4	5
7.	Attitudes/treatment of faculty toward students of my ethnic group.	0	1	2	3	4	5
8.	Anglo students/faculty expecting poor academic performance from students of my ethnic group.	0	1	2	3	4	5
9.	Tense relationships between Anglos and minorities at this university.	0	1	2	3	4	5
10.	Pressure that what "I" do is representative of my ethic group's abilities, behaviors, etc.	0	1	2	3	4	5
11.	Having Anglo friends.	0	1	2	3	4	5
12.	Relationships between different ethnic groups.	0	1	2	3	4	5
13.	Anglo-oriented campus culture.	0	1	2	3	4	5
14.	Lack of unity/supportiveness among members of my ethnic group at this university.	0	1	2	3	4	5
15.	Having to live around mostly Anglo people.	0	1	2	3	4	5
16.	Having to always be aware of what Anglo people might do.	0	1	2	3	4	5

17. Maintaining my ethnic identity while attending this university.	0	1	2	3	4	5
18. Relationships between males and females of my ethnic group (available dating partners).	0	1	2	3	4	5
19. Wealthy campus culture.	0	1	2	3	4	5
20. This campus being an unfriendly place.	0	1	2	3	4	5
21. Being treated rudely or unfairly because of my ethnicity.	0	1	2	3	4	5
22. Being discriminated against.	0	1	2	3	4	5
23. Anglo people expecting me to be a certain way because of my ethnicity (stereotyping).	0	1	2	3	4	5
24. Others lacking respect for people of my ethnic group.	0	1	2	3	4	5
25. Having to "prove" my abilities to others (e.g., work twice as hard).	0	1	2	3	4	5

Appendix C

Social, Attitudinal, Familial, and Environmental Scale (S.A.F.E.; Mena et al., 1987)

The following statements refer to your experience with two different cultures (e.g., Mainstream and Latino/Hispanic culture), changes in relationships, and/or ideas about self and family. Please indicate how stressful each item has been **since you entered college** by circling the number that best applies.

0 not applicable	**1 not at all stressful**	**2 slightly stressful**	**3 moderately stressful**	**4 quite a bit stressful**	**5 extremely stressful**

1.	Because I am different, I do not get enough credit for the work I do.	0	1	2	3	4	5
2.	I often feel ignored by people who are supposed to assist me.	0	1	2	3	4	5
3.	I often feel that people actively try to stop me from advancing.	0	1	2	3	4	5
4.	Many people have stereotypes about my culture or ethnic group and treat me as if they are true.	0	1	2	3	4	5
5.	In looking for a job, I sometimes feel that my ethnicity is a limitation.	0	1	2	3	4	5
6.	I feel uncomfortable when others make jokes about or put down people of my ethnic background.	0	1	2	3	4	5
7.	I have more barriers to overcome than most people.	0	1	2	3	4	5
8.	Because of my ethnic background, I feel that others often exclude me from participating in their activities.	0	1	2	3	4	5
9.	It bothers me when people pressure me to assimilate.	0	1	2	3	4	5
10.	People look down upon me if I practice customs of my culture.	0	1	2	3	4	5
11.	Loosening the ties with my cultural background is difficult.	0	1	2	3	4	5
12.	It bothers me that I cannot be with my family.	0	1	2	3	4	5
13.	I often think about my cultural background.	0	1	2	3	4	5
14.	It is hard to express to my friends how I really feel.	0	1	2	3	4	5
15.	I have trouble understanding others when they speak.	0	1	2	3	4	5
16.	I don't have any close friends.	0	1	2	3	4	5

17. People think I am unsociable when in fact I have trouble communicating in English.	0	1	2	3	4	5
18. I don't feel at home.	0	1	2	3	4	5
19. It bothers me that family members I am close to do not understand my new values.	0	1	2	3	4	5
20. Close family members and I have conflicting expectations about my future.	0	1	2	3	4	5
21. My family does not want me to move away but I would like to.	0	1	2	3	4	5

Appendix D

Acculturation Rating Sale for Mexican Americans-II (ARSMA-II; Cuellar et al., 1995)

Please respond to the following statements by circling the number that best applies.

1 not at all	**2 very little or not very often**	**3 moderately**	**4 much or very often**	**5 extremely often or almost always**

1.	I speak Spanish.	1	2	3	4	5
2.	I speak English.	1	2	3	4	5
3.	I enjoy speaking Spanish.	1	2	3	4	5
4.	I associate with Anglos.	1	2	3	4	5
5.	I associate with Latinos and/or Hispanic Americans.	1	2	3	4	5
6.	I enjoy listening to Spanish language music.	1	2	3	4	5
7.	I enjoy listening to English language music.	1	2	3	4	5
8.	I enjoy Spanish language TV.	1	2	3	4	5
9.	I enjoy English language TV.	1	2	3	4	5
10.	I enjoy English language movies.	1	2	3	4	5
11.	I enjoy Spanish language movies.	1	2	3	4	5
12.	I enjoy reading (e.g., books in Spanish).	1	2	3	4	5
13.	I enjoy reading (e.g., books in English).	1	2	3	4	5
14.	I write (e.g., letters in Spanish).	1	2	3	4	5
15.	I write (e.g., letters in English).	1	2	3	4	5
16.	My thinking is done in the English language.	1	2	3	4	5
17.	My thinking is done in the Spanish language.	1	2	3	4	5
18.	My contact with my native country has been.	1	2	3	4	5
19.	My contact with the USA has been.	1	2	3	4	5
20.	My father identifies or identified himself as "Latino" or "Hispanic."	1	2	3	4	5
21.	My mother identifies or identified himself as "Latina" or "Hispanic."	1	2	3	4	5
22.	My friends while I was growing up were of Hispanic origin.	1	2	3	4	5
23.	My friends while I was growing up were of Anglo origin.	1	2	3	4	5

24. My family cooks Hispanic foods.	1	2	3	4	5
25. My friends now are of Anglo origin.	1	2	3	4	5
26. My friends now are of "Hispanic" or "Latino" origin.	1	2	3	4	5
27. I like to identify myself as an Anglo American.	1	2	3	4	5
28. I like to identify myself as a Hispanic or Latino American.	1	2	3	4	5
29. I like to identify myself as Latino or Hispanic.	1	2	3	4	5
30. I like to identify myself as an American.	1	2	3	4	5

Appendix E

Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992)

These questions are about your ethnicity or ethnic group and how you feel about it or react to it. Please indicate how much you agree or disagree with each statement by circling the number that best applies.

1 **strongly disagree**	2 **somewhat disagree**	3 **somewhat agree**	4 **strongly agree**

1.	I have spent time trying to find out more about my own ethnic group, such as its history, traditions and customs.	1	2	3	4
2.	I am active in organizations or social groups that include mostly members of my ethnic group.	1	2	3	4
3.	I have a clear sense of my ethnic background and what it means for me.	1	2	3	4
4.	I think a lot about how my life will be affected by my ethnic group membership.	1	2	3	4
5.	I am happy that I am a member of the group I belong to.	1	2	3	4
6.	I am not very clear about the role of my ethnicity in my life.	1	2	3	4
7.	I really have not spent much time trying to learn more about the culture and history of my ethnic group.	1	2	3	4
8.	I have a strong sense of belonging to my own ethnic group.	1	2	3	4
9.	I understand pretty well what my ethnic group membership means to me, in terms of how to relate to my own group and other groups.	1	2	3	4
10.	In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.	1	2	3	4
11.	I have a lot of pride in my ethnic group and its accomplishments.	1	2	3	4
12	I participate in cultural practices of my own group, such as special food, music, or customs.	1	2	3	4
13.	I feel a strong attachment towards my own ethnic group.	1	2	3	4
14.	I feel good about my cultural or ethnic background.	1	2	3	4

Appendix F

Perceived Social Support from Family (PSS-FA; Procidano & Heller, 1983)

The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with their **families**. Please respond to the following statements by circling the number that best applies.

1 strongly disagree	2 somewhat disagree	3 neutral	4 somewhat agree	5 strongly agree

1.	My family gives me the moral support I need.	1	2	3	4	5
2.	I get good ideas about how to do things or make things from my family.	1	2	3	4	5
3.	Most other people are closer to their family than I am.	1	2	3	4	5
4.	When I confide in the members of my family who are closest to me, I get the idea that it makes them uncomfortable.	1	2	3	4	5
5.	My family enjoys hearing about what I think.	1	2	3	4	5
6.	Members of my family share many of my interests.	1	2	3	4	5
7.	Certain members of my family come to me when they have problems or need advice.	1	2	3	4	5
8.	I rely on my family for emotional support.	1	2	3	4	5
9.	There is a member of my family I could go to if I were just feeling down, without feeling funny about it later.	1	2	3	4	5
10.	My family and I are very open about what we think about things.	1	2	3	4	5
11.	My family is sensitive to my personal needs.	1	2	3	4	5
12.	Members of my family come to me for emotional support.	1	2	3	4	5
13.	Members of my family are good at helping me solve problems.	1	2	3	4	5
14.	I have a deep sharing relationship with a number of members of my family.	1	2	3	4	5
15.	Members of my family get good ideas about how to do things or make things for me.	1	2	3	4	5
16.	When I confide in members of my family, it makes me uncomfortable.	1	2	3	4	5
17.	Members of my family seek me out for companionship.	1	2	3	4	5

18. I think that my family feels that I'm good at helping them solve problems.	1	2	3	4	5
19. I don't have a relationship with a member of my family that is as close as other people's relationships with family members.	1	2	3	4	5
20. I wish my family were much different.	1	2	3	4	5

Appendix G

Perceived Social Support from Friends (PSS-FR; Procidano & Heller, 1983)

The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with their **school peers**. Please respond to the following statements by circling the number that best applies.

1 strongly disagree	2 somewhat disagree	3 neutral	4 somewhat agree	5 strongly agree

1.	My peers give me the moral support I need	1	2	3	4	5
2.	I get good ideas about how to do things or make things from my peers.	1	2	3	4	5
3.	Most other people are closer to their peers than I am.	1	2	3	4	5
4.	When I confide in the members of my peer group who are closest to me, I get the idea that it makes them uncomfortable.	1	2	3	4	4
5.	My peers enjoy hearing about what I think.	1	2	3	4	5
6.	Members of my peer group share many of my interests.	1	2	3	4	5
7.	Certain members of my peer group come to me when they have problems or need advice.	1	2	3	4	5
8.	I rely on my peers for emotional support.	1	2	3	4	5
9.	There is a member of my peer group I could go to if I were just feeling down without feeling funny about it later.	1	2	3	4	5
10.	My peers and I are very open about what we think about things.	1	2	3	4	5
11.	My peers are sensitive to my personal needs.	1	2	3	4	5
12.	Members of my peer group come to me for emotional support.	1	2	3	4	5
13.	Members of my peer group are good at helping me solve problems.	1	2	3	4	5
14.	I have a deep sharing relationship with a number of members in my peer group	1	2	3	4	5
15.	Members of my peer group get good ideas about how to do things or make things for me.	1	2	3	4	5
16.	When I confide in members of my peer group, it makes me uncomfortable.	1	2	3	4	5
17.	Members of my peer group seek me out for companionship.	1	2	3	4	5

18. I think that my peers feel that I'm good at helping them solve problems. 1 2 3 4 5

19. I don't have a relationship with a member of my peer group that is as close as other people's relationships with peer group members. 1 2 3 4 5

20. I wish my peers were much different. 1 2 3 4 5

Appendix H

Perceived Social Support from University Personnel (PSS-UP; DuBois et al., 1994; Procidano & Heller, 1983)

The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with **university personnel** (e.g., professors, counselors, financial aid staff, and student support services). Please respond to the following statements by circling the number that best applies.

1 **strongly disagree**	**2** **somewhat disagree**	**3** **neutral**	**4** **somewhat agree**	**5** **strongly agree**

1.	University personnel give me the moral support I need.	1	2	3	4	5
2.	I get good ideas about how to do things or make things from university personnel	1	2	3	4	5
3.	Most other people are closer to university personnel than I am.	1	2	3	4	5
4.	When I confide in members of the university personnel who are closest to me, I get the idea that it makes them uncomfortable.	1	2	3	4	5
5.	University personnel enjoy hearing about what I think.	1	2	3	4	5
6.	Members of the university personnel share many of my interests.	1	2	3	4	5
7.	Certain university personnel come to me when they have problems or need advice	1	2	3	4	5
8.	I rely on university personnel for emotional support.	1	2	3	4	5
9.	There is a member of the university personnel I could go to if I were just feeling down without feeling funny about it later.	1	2	3	4	5
10.	University personnel and I are very open about what we think about things.	1	2	3	4	5
11.	University personnel are sensitive to my personal needs.	1	2	3	4	5
12.	Members of the university personnel come to me for emotional support.	1	2	3	4	5
13.	Members of the university personnel are good at helping me solve problems.	1	2	3	4	5
14.	I have a deep sharing relationship with a number of members of the university personnel.	1	2	3	4	5
15.	Members of the university personnel get good ideas about how to do things or make things for me.	1	2	3	4	5

16. When I confide in members of the university personnel, it makes me uncomfortable 1 2 3 4 5

17. Members of the university personnel seek me out for companionship. 1 2 3 4 5

18. I think that the university personnel feels that I'm good at helping them solve problems. 1 2 3 4 5

19. I don't have a relationship with a member of the university personnel that is as close as other people's relationships with university personnel. 1 2 3 4 5

20. I wish the university personnel were much different. 1 2 3 4 5

Appendix I

Brief COPE (Carver, 1997)

The statements which follow refer to responses which most people utilize at one time or another when confronted with stressful experiences; including negative experiences related to their ethnicity (e.g., negative stereotypes) participation in two different cultures (Mainstream and Latino/Hispanic culture), changes in relationships, and/or ideas about self and family. Please **indicate how often you have engaged in this activity SINCE YOU STARTED COLLEGE** by circling the number that best applies.

1 **I don't do this at all**	**2** **I do this a little bit**	**3** **I do this a medium amount**	**4** **I do this a lot**

1.	I turn to work or other activities to take my mind off things.	1	2	3	4
2.	I concentrate my efforts on doing something about the situation I'm in.	1	2	3	4
3.	I say to myself "this isn't real."	1	2	3	4
4.	I use alcohol or other drugs to make myself feel better.	1	2	3	4
5.	I get emotional support from others.	1	2	3	4
6.	I give up trying to deal with it.	1	2	3	4
7.	I take action to try to make the situation better.	1	2	3	4
8.	I refuse to believe that it has happened.	1	2	3	4
9	I say things to let my unpleasant feelings escape.	1	2	3	4
10.	I get help and advice from other people.	1	2	3	4
11.	I use alcohol or other drugs to help me get through it.	1	2	3	4
12.	I try to see it in a different light, to make it seem more positive.	1	2	3	4
13.	I criticize myself.	1	2	3	4
14.	I try to come up with a strategy about what to do.	1	2	3	4
15.	I get comfort and understanding from someone.	1	2	3	4
16.	I give up the attempt to cope.	1	2	3	4
17.	I look for something good in what is happening.	1	2	3	4
18.	I make jokes about it.	1	2	3	4
19.	I do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	1	2	3	4
20.	I accept the reality of the fact that it has happened	1	2	3	4
21.	I express my negative feelings.	1	2	3	4
22.	I try to find comfort in my religion or spiritual beliefs.	1	2	3	4

23. I try to get advice or help from other people about what to do.	1	2	3	4
24. I learn to live with it.	1	2	3	4
25. I think hard about what steps to take.	1	2	3	4
26. I blame myself for things that happened.	1	2	3	4
27 I pray or meditate.	1	2	3	4
28 I make fun of the situation.	1	2	3	4

Appendix J

Problem Focused Style of Coping (PF-SOC; Heppner et al., 1995)

Please think about how **you TYPICALLY respond to negative experiences or problems;** including those related to your ethnicity (e.g., negative stereotypes), cultural conflicts, changes in relationships, and ideas about self or family. Please indicate how often **you typically** use each item by circling the number that best applies.

1 almost never	2 occasionally	3 sometimes	4 often	5 a great deal

1.	I am not really sure what I think or believe about the problems.	1	2	3	4	5
2.	I don't sustain my actions long enough to really solve the problems.	1	2	3	4	5
3.	I think about ways that I solved similar problems in the past.	1	2	3	4	5
4.	I identify the causes of my emotions which helps me identify and solve the problems.	1	2	3	4	5
5.	I feel so frustrated I just give up doing any work on the problems at all.	1	2	3	4	5
6.	I consider the short-term and long term consequences of each possible solution to the problems.	1	2	3	4	5
7.	I get preoccupied thinking about the problems and overemphasize some parts of them.	1	2	3	4	5
8.	I continue to feel uneasy about the problems, which tells me I need to do some more work.	1	2	3	4	5
9.	My old feelings get in the way of solving current problems.	1	2	3	4	5
10.	I spend my time doing unrelated chores and activities instead of acting on the problems.	1	2	3	4	5
11.	I think ahead, which enables me to anticipate and prepare for problems before they rise.	1	2	3	4	5
12.	I think the problems through in a systematic way.	1	2	3	4	5
13	I misread another person's motives and feelings without checking with the person to see if my conclusions are correct.	1	2	3	4	5
14.	I get in touch with my feelings to identify and work on the problems.	1	2	3	4	5
15.	I act too quickly, which makes problems worse.	1	2	3	4	5

16. I have a difficult time concentrating on the problems (i.e., my mind wanders).	1	2	3	4	5
17. I have alternate plans for solving the problems in case my first attempt does not work.	1	2	3	4	5
18. I avoid even thinking about the problems.	1	2	3	4	5

Appendix K

DSM Scale for Depression-26 (DSD-26; Roberts et al., 1995)

Below is a lit of the ways you might have felt or behaved. Please indicate how often you have felt this way **during the past 2 weeks** by circling the number that best applies.

1 **hardly ever or never**	2 **sometimes**	3 **often**	4 **almost every day**

1.	Have you been very sad?	1	2	3	4
2.	Have you been grouchy or irritable, or in a bad mood, so that even little things would make you mad?	1	2	3	4
3.	Were there times when nothing was fun for you, even things you used to like?	1	2	3	4
4.	Were there times when you just weren't interested in anything and felt bored or just sat around most of the time?	1	2	3	4
5.	Have you felt like not eating?	1	2	3	4
6.	Have you wanted to eat more than usual?	1	2	3	4
7.	Have you had more trouble sleeping than usual (falling asleep or staying asleep or waking up too early)?	1	2	3	4
8.	Have you slept a lot more than usual?	1	2	3	4
9.	Have you talked or moved around a lot less than usual?	1	2	3	4
10.	Have you been very restless, when you just had to keep walking around?	1	2	3	4
11.	Have you been so down that it was hard for you to do your schoolwork or work?	1	2	3	4
12.	Have you had trouble looking after yourself or your things, like keeping yourself clean or picking up after yourself?	1	2	3	4
13.	Have you felt more tired than usual, so that you sat around and didn't do much of anything?.	1	2	3	4
14.	Have you felt like you had much less energy than usual, so that it was a big effort to do anything?	1	2	3	4
15.	Have you felt less good about yourself than usual and blamed yourself a lot for things that happened in the past?	1	2	3	4
16.	Have you been down on yourself more than usual, when you felt that you couldn't do anything right?	1	2	3	4
17.	Have you felt bad about the way you look?	1	2	3	4
18.	Have you felt like you were about to cry or were in tears?	1	2	3	4

19. Have you had more trouble than usual paying attention to your schoolwork or work, or keeping your mind on other things you were doing?	1	2	3	4
20. Have you been unable to concentrate or think as clearly or as quickly as usual?	1	2	3	4
21. Have you felt that things never seem to work out all right for you?	1	2	3	4
22. Were there times it was harder for you to make up your mind about things or to make decisions?	1	2	3	4
23. Have you felt that life was hopeless and there was nothing good for you in the future?	1	2	3	4
24. Have you thought more than usual about death or dying?	1	2	3	4
25. Did you wish you were dead?	1	2	3	4
26. Have you thought about suicide or killing yourself?	1	2	3	4

Appendix L

Satisfaction with Life Scale (SWLF; Diener et al., 1985)

Below are five statements with which you may agree or disagree. Please indicate your agreement with each item by circling the number that best applies.

1 strongly disagree	2 disagree	3 slightly disagree	4 neither agree nor disagree	5 slightly agree	6 Agree	7 strongly agree

1.	In most ways my life is close to my ideal.	1	2	3	4	5	6	7
2.	The conditions of my life are excellent.	1	2	3	4	5	6	7
3.	I am satisfied with my life.	1	2	3	4	5	6	7
4.	So far I have gotten the important things I want in life.	1	2	3	4	5	6	7
5	If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

Appendix M

Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999)

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1	2	3	4	5	6	7
not a very happy						a very happy person person

2. Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
less happy						more happy

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extend does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

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