

Stress-Generation Processes in Latinos: The Roles of Acculturation, Acculturative Stress, and Intercultural Competence

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STRESS-GENERATION PROCESSES IN LATINOS: THE ROLES OF
ACCULTURATION, ACCULTURATIVE STRESS,
AND INTERCULTURAL COMPETENCE

By

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ABSTRACT
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Using a brief longitudinal design, this study examined the role of cultural adaptation processes (*acculturation*, *acculturative stress*, and *intercultural competence*) in predicting depression symptoms among Latinos living in the United States. Based on previous research employing stress generation processes (e.g., Hammen, 2005), it was hypothesized that depression symptoms measured at baseline predicted dependent stressful life events measured at six-month follow-up. It was further hypothesized that depression symptoms measured at baseline predicted dependent stressful life events measured at six-month follow-up indirectly through acculturation, acculturative stress, and intercultural competence, also measured at six-month follow-up. Finally, it was hypothesized that six-month follow-up acculturation, acculturative stress, and intercultural competence predicted severity of six-month follow-up depression symptoms indirectly through dependent stressful life events. Although results did not support study hypotheses, supplementary analyses found support for a longitudinal relationship between baseline dependent stressful life events and six-month follow-up acculturative stress mediated by baseline depression. Supplementary analyses also found evidence of possible longitudinal relationship between Latino acculturation and six-month follow-up acculturative stress mediated by baseline depression at the trend level of significance. Results are discussed in the context of a transactional relationship between stress and depression and the possible corresponding influence of this relationship on the cultural adaptation experience of Latinos living in the United States.

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Stress-Generation Processes in Latinos:

The Roles of Acculturation, Acculturative Stress, and Intercultural Competence

Latinos are among the most prevalent ethnic minority group living in the United States. A 2006 United States Census update estimates the total Latino population at 44.2 million, approximately 14.76% of the United States' population (U.S. Census Bureau, 2006). Epidemiological research has found overall lifetime prevalence rates of psychiatric disorders to be 28.14% and 30.23% for Latino men and women, respectively (Alegría, Mulvaney-Day, Torres, Polo, Cao, & Canino, 2007). Mendelson, Rehkopf, and Kubzansky (2008) have estimated that depressive disorder rates among Latinos are comparable to those of European Americans, although this may be a conservative estimate given nativity status, gender, and heritage culture have been found to moderate depression prevalence rates (Finch, Kolody, & Vega, 2000; Guarnaccia, Angel, & Worobey, 1991; Vega, Kolody, Aguilar-Gaxiola, Alderete, Catalano, & Caraveo-Anduago, 1998).

It is well established that stress influences the onset and recurrence of depression (Monroe & Harkness, 2005). Yet, how stress influences depression onset and recurrence among Latinos is less clearly understood. Recent research efforts have endeavored to clarify the role that stress plays in depression severity and development among Latinos from a stress-and-coping framework, wherein individual variation in coping strategies and competencies are proposed to influence the stress-depression relationship (Crockett, Iturbide, Torres Stone et al., 2007; Torres, 2009; Torres, 2010). An understanding of the role of stress in Latino mental health is important because, relative to their European American counterparts, Latinos are exposed to unique stressors that may contribute to the

development of depressive disorders. For example, immigration and cultural adaptation processes constitute potential significant stressors for Latinos (Berry, 2003). Though taxing, however, these stressors may be insufficient to precipitate depressive episodes due to a variety of individual (e.g., diathesis, coping strategies) and social/ethnocultural protective factors (e.g., good support networks, family support systems, religion, intercultural competencies). Further, minimal theoretical literature or empirical evidence articulates what types of stressors specifically are associated with depression onset versus recurrences among Latinos.

The purpose of the proposed study, therefore, investigates the role of cultural adaptation processes and stressful life events in predicting depression symptoms over time among Latinos living in the United States. Although a large number of constructs conceivably fall under the criteria of cultural variables (e.g., acculturation, ethnic identity conflicts, perceived discrimination, immigration status, acculturative stress, intercultural competence, religion), the proposed study is most concerned with *acculturation*, *acculturative stress*, and *intercultural competence*. *Acculturation* refers to affective, cognitive, and behavioral changes resultant from sustained contact with another individual or culture of a different ethnocultural background (Berry, 2003; Kim & Abreu, 2001). *Acculturative stress* constitutes stress reactions that occur in response to life events that arise out of the acculturative experience (Berry, 2006). *Intercultural competence* refers to skill sets that facilitate effective intercultural contact between individuals of different cultural backgrounds (Torres, 2009; Torres & Rollock, 2007). These cultural variables comprise a significant component of Latino individuals' daily experience and as such may be contextual variables that confer both significant risk and

protective factors in relation to stressful life events. In addition – and perhaps more importantly – acculturation, acculturative stress, and intercultural competence reflect Latino individuals' cultural adaptation processes. The functional capacities engendered through cultural adaptation processes suggest they may be critical investigating the relationship between stressful life events and depression among Latinos.

Several theorists argue that acculturation reflects change processes (e.g., Berry, 2003; Moyerman & Forman, 1992; Padilla & Perez, 2003; Rogler, Cortes, & Malgady, 1993), but fail to articulate the mechanism by which acculturative change occurs. As one accumulates experiences in multiple contexts one would expect acculturation strategies exhibited by individuals to change. The proposed study, therefore, suggests a transactional, rather than diathesis-stress relationship between stressful life events and depression. Diathesis-stress theories constitute interaction theories, wherein a stressor interacts with an individual predisposition, or diathesis, to precipitate the onset of the disorder (Monroe & Simons, 1991). In contrast, a transactional model of psychopathology development among Latinos posits that sufficiently severe psychosocial stressors may interact with a preexisting diathesis to facilitate the development of a depressive disorder. The incipient depressive disorder may, in turn, perpetuate further stressors through the progressive erosion of protective factors (e.g., supportive cultural networks) or decompensation of interpersonal functioning (e.g., stress generation). *Stress generation* refers to the impairment of interpersonal functioning as a result of depression symptoms such that future stressful life events are engendered (e.g., Hammen, 2006; Harkness & Stewart, 2009). This declination of functioning and protective factors, then, may act upon the existing diathesis to precipitate a recurrence of depression. The

proposed present study, therefore, aims is to clarify the role of cultural adaptation (e.g., acculturation, intercultural competence) as a contextual variable that influences, directly and indirectly, depression development among Latinos via stress-generation processes.

Acculturation

Initial conceptualizations defined acculturation as “those phenomena which result when groups of individuals having different culture come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups (p. 149, Redfield, Linton, & Herskovits, 1936).” The conceptual framework under which acculturation is most often studied focuses on changes of individuals of minority ethnocultural background in relation to a majority cultural group. Acculturation has been theorized to occur at group and individual levels (Berry, 2003). At the group level, the minority culture comes into sustained contact with majority culture. The key cultural features of both cultures influence subsequent changes of both cultures (Berry, 2003; Berry, 2006). This most directly reflects Redfield et al.’s (1936) initial conceptualization of acculturation. At the individual level, acculturation occurs through behavioral, cognitive, affective, and attitudinal changes. Specifically, individuals in the minority culture attempt to adapt to the demands of the new majority culture in manners that can be internal (e.g., sense of well-being, self-esteem, value system, gender roles) or socio-cultural (e.g., intercultural competencies). Changes at the individual level are conceptualized in terms of psychological processes. Accordingly, acculturation assessment at the individual level emphasizes quantitative measurement of changes with regard to affective (e.g., enjoyment of participation in activities related to heritage culture, preference for socializing with individuals from heritage culture or majority

culture), cognitive (e.g., knowledge of historical figures from heritage or majority cultures), and behavioral preferences (e.g., language spoken, foods commonly eaten).

Contextual, environmental, and individual factors influence acculturation.

Effective interaction with members of the majority ethnocultural group requires that the acculturating individual manifest a range of behavioral and cognitive processes, some differing from those of the minority group's heritage culture. Exposure to contexts that require the development and expression of behaviors different from one's ethnocultural background places demands on individuals' existing cognitive and behavioral repertoires. Thus, acculturation constitutes attempts by individuals to respond adaptively to the demands of intercultural contact. Behavioral and cognitive shifts that place lower demands on the acculturating individuals' repertoire are manifested as acculturative strategies (i.e., assimilation, separation, biculturalism, marginalization; Berry, 2006). The particular acculturative strategy exhibited is based on the preference for maintaining components of one's cultural background and preference for contact and participation with individuals of other cultural groups. Acculturation is development to the extent that individuals progressively acquire and express behavioral and cognitive strategies to effectively navigate the demands of intercultural contact. The particular behaviors and cognitive approaches needed to be expressed will vary in accordance with the nature of the situation encountered. Further, as noted above, acculturative strategies exhibited will also depend on an individual's relative preference for retaining one's cultural background and preference for intercultural exchange (Berry, 2003; Cueller, Arnold, & Maldonado, 1995; Padilla & Perez, 2003).

Unidimensional vs. bidimensional acculturation models. Acculturation conceptualization has shifted since its inception to encompass cognitive, behavioral, and affective changes at the individual level, as well as individual-level changes in domains related to the heritage and majority cultures (Kim & Abreu, 2001). Earliest acculturation conceptualizations were based on a unidimensional continuum wherein one extreme represented high assimilation to the majority culture – typically European-American culture – and the other extreme represented high retention of the heritage culture (e.g., Latino culture; Rogler, Cortes, & Malgady, 1991). Unidimensional models framed acculturative change in a “zero-sum” manner such that acquisition of characteristics associated with the majority culture corresponded to a proportional loss of heritage-culture characteristics (Miranda, Bilot, Peluso, Berman, & Van Meek, 2006; Rogler et al., 1991). Acculturation as measured in accordance with this model was determined by assessing participants’ preference for behaviors, practices, values, and cognitions associated with the majority culture *relative to* that of the heritage culture.

Researchers proposed bidimensional acculturation models as an alternative to unidimensional acculturation models. Bidimensional models differ from unidimensional models in that they contain no assumptions regarding acculturation as a “zero-sum” process. Therefore, acculturation to the majority culture does not necessarily entail a proportional loss of heritage-culture characteristics (Rogler et al., 1991). One dimension refers to behaviors, knowledge, and values that correspond to individuals’ cultural heritage; a second dimension refers to behaviors, knowledge, and values that correspond to the majority culture. Rather than referring to individuals as more or less acculturated

relative to the majority culture, bidimensional models refer to *acculturative style* by assessing acculturation on separate bipolar continua (Berry, 2003; Rogler et al., 1991).

Berry (2003; 2006) theorized that acculturating individuals adopt one of four acculturative strategies based on preference for involvement with the heritage and the majority cultures. Individuals low in heritage-culture acculturation and high in acculturation to the majority culture exhibit an *Assimilation* acculturative strategy. Individuals high in heritage-culture acculturation and low in acculturation to the majority culture exhibit a *Separation* acculturative strategy. Individuals who exhibit low acculturation with respect to both their heritage culture and the majority culture adopt *Marginalization* as an acculturative strategy. Lastly, individuals highly acculturated to their heritage culture *and* to the majority culture are considered to exhibit an *Integration* or *Bicultural* acculturative strategy.

Differences between unidimensional and bidimensional acculturation models influence Latino mental health research in two important ways. First, the type of acculturation model employed influences the assessment of biculturalism. Measurements based on unidimensional acculturation models conceptualize acculturation to the majority culture on one extreme of the continuum and acculturation to the heritage culture at the opposite extreme; biculturalism is the midpoint between mainstream acculturation and heritage culture (Rogler et al., 1991). Neither characteristics of the majority culture nor the heritage culture dominate behaviors, knowledge, and values exhibited by the individual. Evidence that this truly reflects acculturation processes is limited. No *a priori* reason exists to assume that bicultural acculturation constitutes acquisition of mainstream cultural characteristics at the expense of heritage-culture characteristics. Furthermore,

biculturalism as measured by unidimensional models may inaccurately assess later generation individuals, such as third- and fourth-generation Latinos, because they may not acculturate in the sense that they necessarily *acquire* characteristics of the majority culture (Zane & Mak, 2003). Bidimensional acculturation models, in contrast, operationalize biculturalism as evidenced by high acculturation on both heritage culture and majority culture dimensions (Berry, 2003; Birman, 1998). As assessed in this manner, the conceptualization of biculturalism shifts from equal preference for heritage and majority cultures to high behavioral involvement in both assessed cultures. Second, bidimensional acculturation models allow for the assessment of acculturation strategies used by members of minority ethnic groups to adapt to the majority culture. Implicit in this idea is that acculturating individuals play a role in choosing their acculturative strategy (Padilla & Perez, 2003).

Much of the literature assumes that bicultural acculturation is associated with optimal mental health. Presumably, bicultural acculturation strategies present the lowest stress to acculturating individuals as biculturalism permits the acquisition of functional intercultural behaviors while retaining components of one's heritage culture (Berry, 2003; Moyerman & Forman, 1992). Empirical evidence, however, fails to consistently support this assumption. For example, Thoman and Surís (2004) found that although low levels of bicultural acculturation predicted greater psychological distress functioning among adult Latino psychiatric patients, assimilation acculturation predicted better self-reported mental health-related quality of life. Similarly, Birman (1998) found that bicultural acculturation was not associated with self-reported global self-worth. It has also been found that second-generation Latinos, who typically report higher bicultural

acculturation, exhibit greater rates of psychiatric disorders relative to immigrant Latinos (Alegria, Canino, Shrout, Woo, Duan, Vila et al., 2008). Thus, the degree to which bicultural acculturation positively or negatively influences Latino mental health is unclear.

Review of acculturation and mental health outcomes. A significant body of research has investigated the relationship between acculturation and a variety of mental health outcomes. However, it is unclear whether acculturation contributes to or buffers against major depressive disorder. In a seminal meta-analysis of acculturation research, Moyerman and Forman (1992) found that the relationship between acculturation and psychological adjustment varied depending on the class of adjustment employed in a particular study. For example, a weak but significant and positive relationship was found for acculturation and affective and impulse control disorders, and a significant, negative association was found for acculturation and anxiety disorders. Similarly, a review of acculturation research by Rogler and colleagues (1991) found substantial inconsistency with respect to the predictive relationship between acculturation and mental health. Twelve of the studies reviewed by Rogler et al. (1991) found a positive relationship between Latino acculturation and mental health, whereas 13 studies found a negative relationship between Latino acculturation and mental health. It is, however, unlikely that acculturation alone exerts a direct influence of Latino mental health (Miranda et al., 2006). Rather, acculturation influences adjustment through contextual, environmental, and situational factors. For example, Birman (1998) found that, among recently-immigrated Latino adolescents, heritage-culture acculturation significantly predicted perceived acceptance by Latino peers, whereas majority-culture acculturation

significantly predicted perceived acceptance by non-Latino peers, suggesting that the degree of fit between acculturation and environmental context is important to “maximize” the benefit of acculturative behaviors. In support of this conceptualization, Birman (1998) also found that acculturation to the majority culture, but not heritage culture, significantly predicted participants’ perceived competence in contributing to the well-being of their family, further indicating that acculturation to the majority culture was congruent with environmental demands that capitalized upon and reinforced assimilation acculturation strategies rather than separation or bicultural acculturation strategies.

Previous research has investigated the relationship between acculturation and depression and has found inconsistent results. Masten, Asidao, Jerome, and colleagues (2004) compared acculturation, measured unidimensionally, and depression among Mexican-American and European-American women. A greater proportion of Mexican-American than European-American participants met criteria for clinically significant depressive symptoms as defined by a score of 16 or greater on the Center for Epidemiological Studies – Depression Scale (CES-D), but there was no significant difference between groups’ CES-D depressive symptomatology. Acculturation was unrelated to self-reported depressive symptoms. Thus, the results of Masten and colleagues (2004) suggest that acculturation may be unrelated to depression. In contrast, additional research suggests acculturation may influence depressive symptom structure among Latinos. Among Mexican-American elders (e.g., greater than 64-years-old) it has been found that depression symptoms as assessed by the CES-D load onto different Principal Components Analysis (PCA) factor solutions for those with high acculturation

and those with low acculturation (Chiriboga, Jang, Banks, & Kim, 2007). The first CES-D factor corresponded to depressive affect (e.g., “I felt depressed”) for individuals with high acculturation, whereas the first CES-D factor corresponded to social alienation and sadness for those who reported low acculturation (e.g., “I had crying spells”). In contrast, the second CES-D factor solution reflected social alienation and loss of interpersonal relationships for individuals with high acculturation (e.g., “People were unfriendly”) and general malaise and low affect for individuals who reported low acculturation (e.g., “Bothered by things”). Comparisons between high- and low-acculturation groups’ covariance matrices and error variances indicated significant differences, suggesting that, among Latinos, depression as a syndrome may alter such that clusters of symptoms are primary and others are secondary as acculturative changes occur.

Other researchers have examined the acculturation-depression relationship as a function of moderating variables. For example, Torres and Rollock (2007) found that acculturation significantly interacted with intercultural competence to predict self-reported depression severity. Low acculturation predicted high self-reported depression, however intercultural competence moderated the acculturation-depression relationship such that individuals with high intercultural competence and low acculturation reported significantly greater levels of depression symptomatology relative to individuals with high intercultural competence and high acculturation. The results suggest that individuals who perceive that they possess abilities to interface between two different cultures (e.g., intercultural competency) but lack the cognitive or behavioral capacity to adequately do so places stressors on the individual. These stressors, in turn, may place individuals at risk for development of psychopathology such as depression.

Empirical investigation of the relationship between acculturation and mental health outcomes, and of acculturation and depression in particular, is hampered by inconsistency among findings. Wide variability in acculturation measurement partially accounts for lack of consistent findings between acculturation and mental health outcomes (Rogler et al., 1991). A further limitation of the extant research is substantial variability amongst sample groups employed in research, which significantly reduces generalizability of results, replication efforts, and homogeneity of findings across studies (Moyerman & Forman, 1992). Moreover, the absence of measurement consistency across studies obviates meta-analyses in many cases due to lack of convergent methodology and, when meta-analyses are possible, decreases the chances of identification of a true statistical effect due to across-study error variance (Rogler, et al., 1991).

Acculturative Stress

As noted above, acculturative stress refers to stress reactions that are secondary to and arise out of the process of acculturation (Berry, 2006). Acculturative stress is considered separate but related to acculturation in that behavioral and cognitive adaptations associated with acculturation place demands on the acculturating individual (Berry, 2006). In particular, cultural stressors place significant demands on individuals to respond adaptively at behavioral, emotional, cognitive, and social levels. Indeed, for those individuals adjusting to the new cultural context, stressors experienced while acculturating have been found to significantly predict depression (Rahman & Rollock, 2004). For example, depressive symptoms among Mexican-American adults are significantly predicted by discrimination and language conflicts (Finch et al., 2000). Moreover, if the severity of the cultural stressor exceeds the current behavioral or

cognitive acculturative capacity of the individual, demands are experienced as acculturative stress (Berry, 2006). Yet, the degree to which one perceives an event as severe is partially influenced by coping strategies employed by the individual in response to an event (Monroe, 2008). Thus, individuals' capacity to successfully cope with possible culturally-stressful demands should negatively predict acculturative stress (Miranda & Matheny, 2000; Torres & Rollock, 2007).

This is not to suggest, however, that acculturative stress is unrelated to acculturation. Rather, it has been theorized that acculturation strategies (Separation, Assimilation, Integration, and Marginalization) are associated with acculturative stress. Berry (2006) argues that Integration acculturation strategies are associated with the least acculturative stress, whereas Marginalization acculturation strategies are associated with the most acculturative stress. In terms of risk for psychopathology development, acculturative stress may constitute a proximal risk factor relative to acculturation. For example, in a sample of Asian Americans, lower acculturation to the majority culture significantly predicted self-reported psychological distress, and acculturative stress significantly predicted self-reported psychological distress above and beyond acculturation (Hwang & Ting, 2008). In this same sample, acculturative stress significantly predicted classification as clinically depressed as assessed by the Hamilton Depression Inventory (HDI) and significantly increased the likelihood of depression above and beyond acculturation.

Research suggests acculturative stress contributes to psychopathology development. For example, acculturative stress significantly predicted self-reported psychological distress among a sample of Latino psychiatric patients and accounted for

significant variance in the predictive relationship above and beyond age, gender, and SES (Thoman & Surís, 2004). Similar findings were reported for a sample of Mexican American college students (Crockett et al., 2007). Acculturative stress significantly interacted with coping strategies to predict self-reported depressive symptomatology such that participants with high acculturative stress and low active coping styles reported significantly higher depressive symptoms than participants with high acculturative stress and high levels of active coping styles. Clearly, stressors experienced during cultural adaptation influences psychological adjustment.

The importance of the relationship between acculturation and acculturative stress is supported by evidence that acculturative stress can moderate the relationship between acculturation and mental health, including depression and suicidal ideation (Walker, Wingate, Obasi, & Joiner, 2008). For example, acculturative stress is significantly higher and self-esteem is significantly lower among first-generation individuals compared to individuals of later generations (Mena et al., 1987; Padilla, Alvarez, & Lindholm, 1986). Significant generational differences have been reported for acculturative stress, with first-generation individuals generally reporting the most acculturative stress, followed by individuals of mixed generation (e.g., one parent born immigrated to the United States, one parent second generation or later), followed by second- and third-generation individuals (Mena et al., 1987; Padilla et al., 1986). Findings also suggest that country of residence interacts with acculturative stress to predict depression; relative to Latinos born in the United States, immigrant Latinos (e.g., born in another country but currently residing in the United States) and migrant Latinos (e.g., born in another country and only temporarily reside in the United States) who report high levels of acculturative stress are

at *lower* risk for depressive symptoms (Finch et al., 2000). Possibly, early immigration status or temporary residence in the United States may facilitate access to culturally based coping resources (e.g., family members, religion) that mitigate the adverse influence of acculturative stress. An important qualifier to the aforementioned results, however, is that generation level and immigration status are proxy variables for acculturation. Although proxy variables in this context are suggestive of the moderating role of acculturative stress relative to acculturation and depression, they are limited in that they are not direct measurements of acculturation.

Intercultural Competence

Intercultural competence refers to group specific skills that assist in individuals' ability to interface with others whose worldview may be at variance with their own due to a different cultural background (Torres & Rollock, 2007). Intercultural competence extends research on acculturation and acculturative stress to incorporate contextual information related to acculturative demands placed on individuals and the acculturative skills used to navigate acculturative demands (Birman, 1998). Acculturative demands may originate from the majority or heritage culture. Intercultural competence is not identical to acculturation. Indeed, empirical research has largely found that intercultural competence is not statistically correlated with acculturation (e.g., Torres & Rollock, 2004; Wilton & Constantine, 2003). Intercultural competence may facilitate acculturation, however, in that intercultural competence may contribute to the acquisition and expression of culturally-specific adaptation and coping responses. This has important implications for the study of depression among Latinos because previous research suggests that the types of coping responses employed by individuals to negotiate stressors

significantly predict depressive symptoms (Holahan, Moos, Holahan, Brennan, & Schutte, 2005; Nezu & Ronan, 1975; Potthoff, Holahan, & Joiner, 1995; Torres & Rollock, 2007). In a review of the literature on psychosocial skills considered important to intercultural competence, Matsumoto, Hiramasa, and LeRoux (2006) identified knowledge of the majority culture and knowledge of one's heritage culture and language proficiency. Thus, intercultural competence may partially mediate the relationship between Latinos' coping responses and subsequent psychosocial adjustment (Matsumoto et al., 2006).

Although only a small body of empirical research explicitly investigates the relationship among intercultural competence and Latino mental health outcomes, the extant literature suggests a significant relationship between the two. With respect to the relationship between intercultural competence and other culturally-relevant variables, research suggests that intercultural competence is negatively associated with acculturative stress (Torres & Rollock, 2004). No research to date suggests that intercultural competence is significantly associated with acculturation. However, this research is limited in that these findings rely on cross-sectional designs and fail to consider whether short-term gains in intercultural competency may also entail adverse long-term impact on interpersonal relationships among other individuals of one's cultural background. Indeed, Alegría and colleagues (2007) suggested that intercultural competencies may facilitate successful interaction with individuals of the mainstream cultural background and provide opportunities for social mobility while simultaneously eroding ties with other individuals of the same cultural background such as family and friends. Indirectly, greater concerns about intercultural competence – and thus lower

intercultural competence – were found to significantly predict self-reported general psychological distress among a group of Latino and Asian-American college students (Wilton & Constantine, 2003). Conclusive findings for this study, however, were limited because separate analyses were not conducted for Asian-American and Latino samples and because of a biased sample of only English-speaking participants.

More direct findings of the relationship among intercultural competence and mental health outcomes were provided by Torres and Rollock (2004), who found that greater intercultural competence concerns significantly predicted acculturative stress and that this relationship was the best predictor of acculturative stress above and beyond acculturation and general active coping strategies. Furthermore, among a community sample of Latinos intercultural competence interacted with acculturation such that among individuals with high intercultural competence, high acculturation buffered self-reported depression symptoms, whereas low acculturation was associated with greater depression symptoms (Torres & Rollock, 2007). Thus, preliminary evidence does suggest a relationship between intercultural competency and mental health outcomes.

An implication of the above research is that intercultural competence influences person-environment fit. Thus, in order for intercultural competencies to contribute to adaptive functioning, and by extension adjustment, the behaviors and skills exhibited by the individual must fit within the environmental context in which the individual is embedded (Ogbu, 1981). As demonstrated by Torres and Rollock (2007), in the absence of a fit between intercultural competence and acculturation a disparity between the environment and the individual may result. This disparity may impact the environmental context in which the individual is ensconced. The environmental context may be

receptive (e.g., flexible and willing to adapt or accommodate) or rejecting (e.g., rejecting, inflexible, demanding change, exhibiting prejudice or discrimination) to the individual (Berry, 2003; Berry, 2006). Behavioral skills and knowledge appropriate to the environmental context (e.g., bicultural or assimilation acculturation strategies if the environment reflects the majority culture, or separation strategies if the environment reflects the heritage culture) may maintain positive psychosocial adjustment or ameliorate negative psychosocial adjustment. Behavioral skills and knowledge at variance with the cultural environment (e.g., marginalization or separation acculturation strategies if the environment reflects the majority culture, or assimilation strategies if the environment reflects the heritage culture) may contribute to negative psychosocial adjustment or psychopathology development. Extending this consideration to the present study, intercultural competencies may contribute to the prediction of future depressive episodes to the extent that they buffer or otherwise attenuate the influence of stressful life events on depression *vis-à-vis* individuals' adaptation functioning in their environment.

Stress-Generation Processes in Depressive Disorders

Several comprehensive theoretical reviews of the stress and depression literature converge on the point that onset of depression can, in some cases, be partially accounted for the experience of a significantly stressful event (e.g., Hammen, 2005; Monroe, 2008; Monroe & Hadjiyannakis, 2002; Monroe & Harkness, 2005). It has been estimated that 70% of first depressive episodes are preceded by a recent severely stressful life event (Monroe & Harkness, 2005). Much of the research on stressful life events and psychopathology development, however, consider the relationship between stressful life events and psychopathology development from the perspective of single episode onset.

Yet, 80% of individuals who experience a first depressive episode will develop depressive recurrences (Kessler, 2002). Classic diathesis-stress theories posit the onset of an event of sufficient magnitude that an individual subjectively evaluates as stressful interacts with a preexisting diathesis, such as a premorbid biological vulnerability, to facilitate the development of a psychological disorder (Monroe & Simons, 1991). However, stressful life events transact with individuals over time (Lazarus & Folkman, 1984; Monroe, 2008). Consequently, the relationship between stressful life events and depression onset and course most likely changes over time. For example, specific types of stressors have been found to be predictive of particular psychological disorders. For example, stressful life events that confer losses have been found to be associated with depressive disorders (Brown & Harris, 1989; Chun, Cronkite, & Moos, 2004). Stressors and stressful life events may be categorized according to the objective threat presented to one's well-being as a result of events within the environment, and according to the subjective meaning one ascribes to an event given one's personal history and biography (Brown, 1989). At a more fundamental level, life events refer to an occurrence that signifies either change or loss to an individual (Lazarus & Folkman, 1984). Subjective evaluation of the life event is required in order for the individual to appraise it as distressing. Thus, the designation of a particular life event as stressful or not is an outcome of transactional processes between individual and environment over time (Brown, 1989; Lazarus & Folkman, 1984; Monroe, 2008).

Stress generation provides a compelling theoretical framework by which to investigate the stress-depression relationship. Stress generation refers to the adverse influence of depressive symptoms on individuals' interpersonal functioning such that

additional stressors are created (Hammen, 1991; Hammen, 2005; Hammen, 2006).

Depression is associated with significant impairment in interpersonal processes. Studies have consistently found that, relative to non-depressed individuals, persons with depression evaluate themselves as having poorer interpersonal functioning with respect to social skills, slowed rate and decreased volume of speech, dysphoric content of speech, poor eye contact, and restricted facial expressiveness (see Joiner, 2002 for review).

Further, objective raters corroborate depressed persons' self-evaluations of interpersonal functioning, suggesting that perceived impairment is not an artifact of depressive self-perceptions. Depressed individuals are more likely to experience interpersonal rejection by their peers (Star & Davila, 2008). Declination of interpersonal functioning is an important facet of the behavioral expression of depressive syndrome because it is suggestive of psychopathology's potential to adversely impact one's social and environmental context. This implicates the crucial point that individuals are active participants in the creation of their environment and not passive respondents whose manifest symptoms are an outcome of diathesis-stress processes (Hammen, 2006). Rather, individual expression of depressive symptoms may interact with situational context, suggestive of a transactional relationship between depression, stressors, and one's environment.

Stress generation suggests that depression predicts those stressful life events that are at least partially dependent on depressed individuals' actions (Hammen, 2005). Thus, stress-generation research distinguishes between *independent stressors* – stressors typically unrelated to individuals' actions such as illness or death – and *dependent stressors* – stressors that typically occur partially as a result of one's actions, such as job

loss, divorce, or interpersonal conflict (Chun et al., 2004; Hammen, 1991). Several studies have provided evidence for stress generation in relation to dependent stressors. In the initial report on stress generation, Hammen (1991) found that women with unipolar depression and bipolar disorder reported significantly more dependent stressful life events than medically ill women and women controls (i.e., no current medical or psychiatric disorder). Specifically, women with unipolar depression reported significantly more severe and more frequent interpersonal conflict than all other groups assessed. Since the initial study, evidence for stress generation has been found in samples of men (Cui & Vaillant, 1997) and women (Hammen & Brennan, 2002; Harkness & Luther, 2001), and in clinical (Chun et al., 2004; Holahan, Moos, Holahan, Brennan, & Schutte, 2005) and non-clinical samples (Joiner, Wingate, Gencoz, & Gencoz, 2005; Joiner, Wingate, & Otamendi, 2005; Potthoff, Holahan, & Joiner, 1995).

Although stress generation most typically occurs among depressed samples, research suggests stress generation is not an outcome of depressive disorders in and of itself. In a 10-year longitudinal study, depressed individuals reported significantly more dependent stressors (e.g., conflict with family members and friends, financial problems, and exit/loss events; Chun et al., 2004). Among participants diagnosed as depressed who had also experienced exit/loss events in the form of a divorce or separation, self-reported symptoms at one-year follow-up significantly *negatively* predicted family conflict. In contrast, for participants not diagnosed as depressed, self-reported depression symptoms at one-year follow-up significantly positively predicted family conflict; depression symptoms were unrelated to exit/loss events. The finding that individuals not diagnosed as depressed experience some form of stress generation in the presence of self-reported

dysphoria suggests stress generation is less likely an emergent property of depressive psychopathology, per se, than an artifact of interpersonal style of persons who are more likely to become depressed (Cui & Vaillant, 1997; Hammen, 2005; Joiner, Wingate, & Otamendi, 2005; Joiner, Wingate, Gencoz et al., 2005). For example, poor interpersonal solving predicts interpersonal stressors, which in turn predicts severity of depression symptoms (Davila, Hammen, Burge, Parley, & Daley, 1995). Yet, Chun and colleagues' (2004) finding that the strength and direction of the stress generation relationship differs for depressed compared to non-depressed persons suggests a distinct relationship between dysphoric mood and dependent stressors specific to depressed individuals.

The mechanism by which stress generation occurs is unclear. Stress generation findings may be spurious given that outcome measures of stress generation (e.g., self-reported interpersonal conflict) may be conflated with depression symptoms such as irritability and low energy (Hammen, 2005), depressive styles such as hopelessness, pessimism (Joiner, 2002), or reassurance-seeking behaviors (Potthoff, Holahan, & Joiner, 1995; Star & Davila, 2008). It is conceivable that adversely impacted social networks reflect an immediate consequence of depressive reassurance seeking behaviors. Yet, interpersonal conflict has been found to be greater for women with unipolar depression even during periods of remission (Hammen, 1991), suggesting stress generation is an outcome of depression and not an artifact of symptoms. In contrast, depressive cognitive styles may selectively bias participant recall of self-reported interpersonal conflict (Brown & Harris, 1989), thus falsely inflating measures of stress generation. However, findings by Joiner and colleagues (2005) that depression predicts self-reported interpersonal conflict *and* other-reported interpersonal rejection refute the interpretation

that stress generation findings reflect biased recall. Some research suggests stress generation occurs through depressive cognitive styles such as hopelessness (Joiner, Wingate, Gencoz et al., 2005; Joiner et al., 2005). Thus, stress generation research suggests that negative cognitive appraisal of events may adversely influence individuals' behaviors, possibly facilitating the expression of maladaptive coping strategies (Lazarus & Folkman 1984), further perpetuating stressful life events.

Studies of coping strategies and behaviors provide a more compelling mechanism of stress generation as they suggest behavioral, tangible constructs by which evaluate interpersonal strain. Holahan and colleagues (2005) integrated depression, avoidant coping behaviors, and stress generation in a prospective, 10-year longitudinal study of a large sample of individuals seeking treatment at a medical facility. Depression and avoidance coping measured at baseline predicted life stressors measured at four-year follow-up; importantly, baseline depression symptoms and baseline avoidance coping indirectly predicted depression symptoms at ten-year follow-up via life stress at four-year follow-up. Thus, maladaptive coping responses suggest a behavioral mechanism for stress generation and subsequent depression symptoms. Findings such as these are consistent with studies that implicate depression symptoms as predicted by other maladaptive coping strategies such as poor interpersonal problem solving (Davila et al., 1995), or excessive and habitual reassurance-seeking behaviors (Potthoff et al., 1995; Star & Davila, 2008).

Present Study

The literature reviewed above suggests depressive symptoms are significantly related to the generation of interpersonal stressful life events. Further, the research

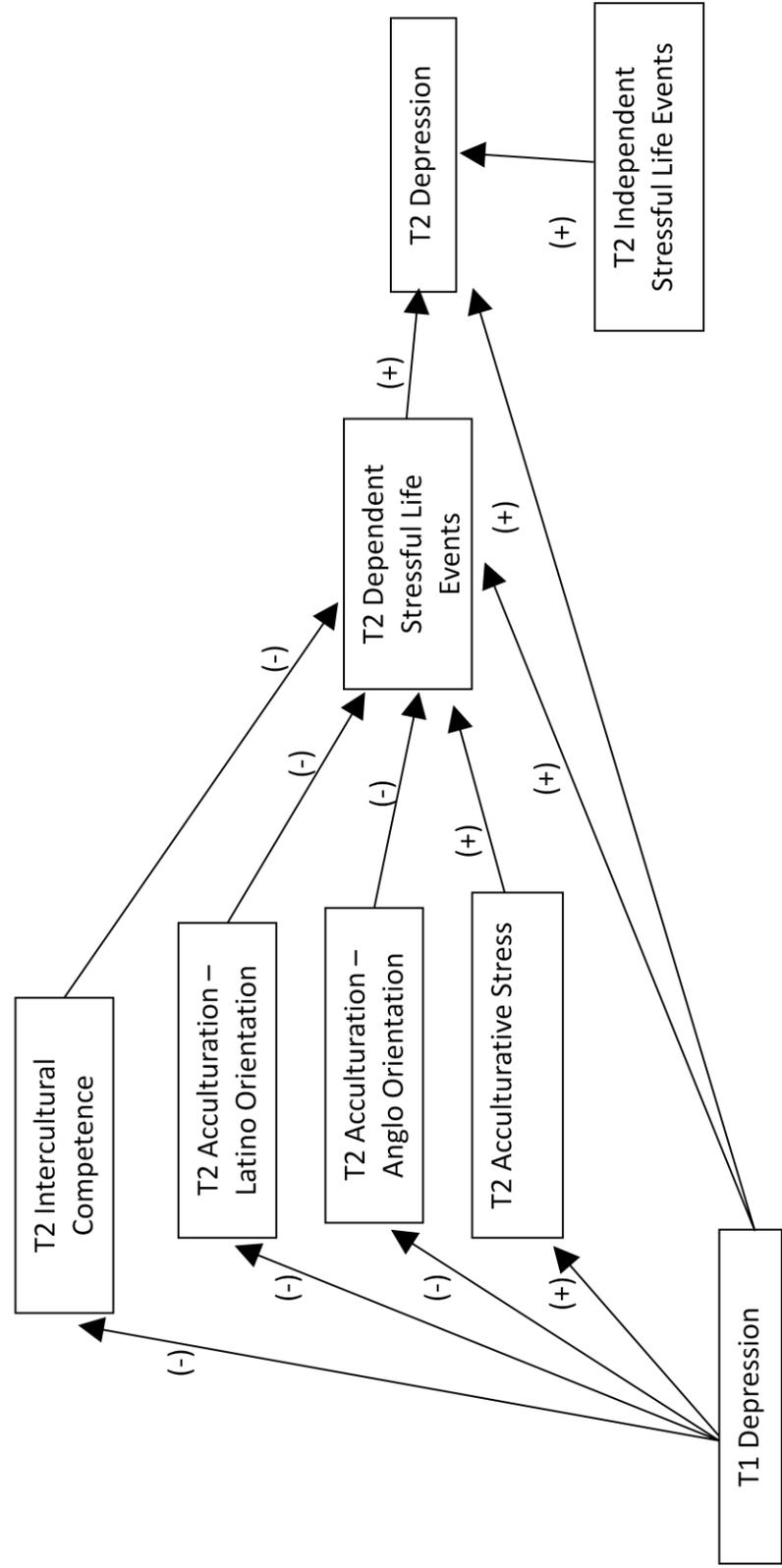
reviewed suggests a variety of mechanisms that may mediate the relationship between depression and later stress. Stress generation processes have yet to be investigated in the context of Latino samples. In particular, the role of cultural adaptation processes, in the context of stress generation research, has not been examined. Consistent with previous stress-generation findings regarding the influence of depression on avoidant coping and poor interpersonal problems solving, depression symptoms may be adversely related acculturation to the majority culture as well as heritage culture acculturation, acculturative stress, and intercultural competence. Poor functioning with respect to cultural adaptation processes, may, in turn, facilitate the generation of dependent stressful life events. These life events, in turn, may predict later depression symptoms. The present study tests these proposed series of relationships in a brief longitudinal study.

The hypothesized relationships among depression symptoms, heritage culture acculturation (Latino acculturation), majority culture acculturation (Anglo acculturation), acculturative stress, intercultural competence, and stressful dependent and independent life events are depicted as a theoretical model in Figure 1. Four main hypotheses are proposed:

1. Greater severity of depression symptoms assessed at baseline (T1) will significantly predict lower Latino acculturation, lower Anglo acculturation, greater acculturative stress, and lower intercultural competence at six-month follow-up (T2);
2. Lower T2 Latino acculturation, lower T2 Anglo acculturation, lower T2 intercultural competence, and greater T2 acculturative stress will significantly predict more severe and more frequent T2 dependent stressful life events;

Figure 1

Theoretical Model among Major Study Variables



Note. The sign that presented next to each arrow refers to the theorized direction of the relationship between two variables, where a negative sign (-) represents a negative association and a positive sign (+) represents a positive association.

3. Consistent with the stress-generation model, greater severity of T1 depression symptoms will predict more severe and more frequent T2 dependent stressful life events. However, the indirect relationship of severity of depression symptoms to dependent stressful life events will be mediated by lower Latino acculturation, lower Anglo acculturation, lower intercultural competence, and greater acculturative stress at T2;
4. T2 depression symptoms will be significantly related to T2 independent stressful life events and T2 cultural variables. With regard to cultural variables, greater severity of T2 depression symptoms will significantly related to lower T2 Latino acculturation, lower T2 Anglo acculturation, lower T2 intercultural competence, and greater T2 acculturative stress. The relationship between Latino acculturation, Anglo acculturation, acculturative stress, intercultural competence and depression will be mediated by T2 dependent stressful life events.

Method

Participant Recruitment

Participants constituted a convenience sample of self-identified adult Latino/as (i.e., at least 18 years old) who were recruited from national e-mail listings and organizations with a predominant Latino cultural base. No minimum generation level was required for study participation. Participants were able to complete study measures in either in Spanish or in English. The principal investigator (PI) identified national organizations with a significant Latino membership using the internet search engine, Google (www.google.com). Following identification, the PI e-mailed the president of each organization requesting permission to contact organization members via e-mail to solicit study participation. Organizations that granted approval were predominantly professional networking listservs in medical, social services, college professional, and social work domains. Upon organization approval, a request to participate in the proposed study was e-mailed to organization members from the organizations' contact person. A link to the web site containing the survey materials for the proposed study was embedded in the e-mail sent to organization members.

Procedure

Individuals interested in volunteering to participate in the proposed study were referred to a URL link for the internet-based survey service provider, Survey Monkey (www.surveymonkey.com). Survey Monkey is a secure website. All data collected, stored, and transferred on Survey Monkey is encrypted (Verisign, 2009). Furthermore, the website has been evaluated as in compliance with online standards of privacy and

security by Better Business Bureau (Council of Better Business Bureau, 2009), and by the United States Department of Commerce (Department of Commerce, 2009). On the study's homepage, participants were provided with a description of study purpose and procedures, risks and benefits, and compensation for completing measures. To document informed consent, participants checked a box next to a statement indicating they read had and understood the study description and agreed to participate in the proposed study. Participants were unable to advance toward completing the remaining survey materials until checking the aforementioned box. Upon completing the survey, participants were instructed to enter their e-mail address. This information was requested so the PI could provide participants with compensation via an electronic gift card to Amazon or Target; additionally, the provided e-mail address was used to contact participants to invite them to complete study measures at six-month follow-up. Six months from individual baseline, the principal investigator sent participants an e-mail to invite them to complete follow-up study measures. In order to ensure that participants did not complete study measures prior to 6 months, the URL to access six-month follow-up measures was available only via the e-mail provided to participants from the principal investigator.

Participants received an electronic gift card to the online shopping site Amazon (www.amazon.com) or Target (www.target.com) worth \$10 as compensation at both measurement occasions. In addition, participants who completed both measurement occasions were entered in a raffle to win one of two electronic gift certificates to Amazon worth 50 dollars.

Measures

Demographic information. The following demographic information was collected from study participants at T1: age, gender, current marital status, number of children living in participants' household, number of adults living in the participants' household, self-identified cultural heritage (Mexican, Mexican American, Chicano, Puerto Rican, Cuban, write-in option for South/Central American, write-in option for other), nativity status coded as a dichotomous variable (born in the United States vs. born in another country), self-identified country of birth if the participant was not born in the United States, participant generation level determined by participant self-reported of (1) whether they were born in the United States and (2) identification of the first member of the participants' family to immigrate to the United States, personal and household income, whether participants were currently a student and the total number of years they had attended school, and current occupation.

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

Acculturation at baseline and six-month follow-up was measured with the *Acculturation Rating Scale for Mexican Americans-II (ARSMA-II)*; Cueller et al., 1995), a 30-item, self-report questionnaire based on Berry's (2003) model of acculturation strategies (e.g., Biculturalism, Assimilation, Separation, and Marginalization). The ARSMA-II assesses behavioral and affective components of acculturation for Latino and United States' culture. Specifically, the ARSMA-II measures participant language use and preference, ethnic identity and attitudes toward self-classification, participation in culturally-related behaviors, and social interaction with individuals of Anglo and Latino cultural background. Participants indicate the degree to which they engage in behaviors and activities that correspond to the previously mentioned domains of acculturation measured

on a five-point scale ranging from 1 (*not at all*) to 5 (*extremely often or almost always*). The ARSMA-II contains two orthogonally developed subscales that correspond to acculturation to Latino culture (*Latino Orientation Scale – LOS*) and United States' culture (*American Orientation Scale – AOS*). Thus, the ARSMA-II measures acculturation with regard to cultural continuity, as assessed by the LOS score, and cultural contact, as assessed by the AOS score. LOS and AOS scores are derived by calculating the mean of all items for each scale.

The ARSMA-II has consistently been found to be a reliable and valid measure of acculturation. For example, Cuellar et al.'s (1995) initial study of the ARSMA-II's psychometric properties found Cronbach's alphas greater than .80 for both LOS and AOS subscales; participant generation level was negatively correlated with LOS scores and was positively correlated with AOS scores. The ARSMA-II was developed and validated for administration in Spanish and English, and as such both language formats were available to participants. At T1, internal consistency was acceptable for LOS and AOS subscales, Cronbach's alpha = .79 and .71, respectively. Similarly, T2 reliability estimates found evidence of acceptable internal consistency for LOS and AOS subscales, Cronbach's alpha = .71 and .83, respectively.

Multidimensional Acculturation Stress Inventory (MASI). Acculturative stress at baseline and six-month follow-up was measured with the *Multidimensional Acculturative Stress Inventory (MASI)*; Rodriguez, Myers, Mira, Flores, & Garcia-Hernandez, 2002). The MASI is a 36-item instrument that assesses acculturative stress along a bidimensional model. That is, the MASI measures acculturative stress that originates from European-American (e.g., "It bothers me that I speak English with an

accent”) and Latino sources (e.g., “I feel pressure to learn Spanish”). Respondents rate measure items according to the perceived acculturative stress amount of experienced during the previous three months on a six-point scale ranging from 0 (*does not apply*) to 5 (*extremely stressful*). Higher MASI scores reflect greater acculturative stress. Principal components analysis suggests the MASI measures four individual factors: (1) Spanish Competency Pressures (e.g., “I feel uncomfortable being around people who speak only Spanish”), (2) English Competency Pressures (e.g., “I don’t speak English or don’t speak it well”), (3) Pressure to Acculturate (e.g., “It bothers me when people pressure me to assimilate to the American ways of doing things”), and (4) Pressure Against Acculturation (e.g., “People look down upon me if I practice American customs;” Rodriguez et al., 2002). Either an overall score of acculturative stress or individual subscales may be employed (c.f., Rodriguez, 2002; Torres, 2010). In the present study, acculturative stress was assessed by the MASI total score.

Tests of reliability suggest the MASI has good internal consistency with respect to the overall scale and corresponding subscales (Cronbach’s alpha ranges from .77 to .90) as well as test-retest reliability (Rodriguez et al., 2002). Schwartz and Zamboanga (2008) found Cronbach’s alphas greater than .79 for all subscales among a sample of Latinos living in Miami, further supporting the MASI’s reliability. Evidence of excellent internal consistency for the MASI was found at both T1 and T2, Cronbach’s alpha = .89 and .88, respectively. With respect to criterion validity, Rodriguez et al. (2002) reported that the Pressure to Acculturate subscale significantly predicted greater psychological distress and lower well-being above and beyond sociodemographic variables. The MASI was

developed in English and Spanish. Both English and Spanish versions of the MASI were available for completion by study participants.

Latino Intercultural Competence – Importance (IC19I). Latino intercultural competence at baseline and six-month follow-up was measured with the Intercultural Competence Scale – Importance (IC19I) scale (Torres, 2009). The IC19I is a 19-item self-report questionnaire that assesses the degree to which Latinos value skills necessary to successfully interact with individuals of the majority cultural background and other Latinos. More specifically, the IC19I assesses competence in terms of mastery of skills necessary to adapt to contextual demands imposed by a particular situation; as such, the competencies assessed by the IC19P function to assist individuals in fulfilling societal roles effectively. To assess intercultural competence, respondent rate statements on degree to which they agree or disagree with behaviors that facilitate successful interpersonal interaction in a variety of intercultural contexts (e.g., “Being motivated to help or give back to the Latino/Hispanic community,” “Understanding Latino cultural values like respect”). Participants respond on a five-point scale that ranges from 0 (*Not at all important or Not at all a description of me*) to 4 (*Very important or Very accurate description of me*). Scale responses are summed and the mean of responses is computed to determine participants’ self-reported intercultural competence. The IC19I was developed using a two-stage process. Phase 1 entailed development of scale items through focus groups. Phase 2 consisted of scale development through cultural consensus analysis (Torres, 2009). Cronbach’s alphas at baseline and T2 were .86 and .83, respectively, indicating good internal consistency at both measurement occasions.

Social Readjustment Rating Scale (SRRS) Holmes and Rahe's (1967) Social Readjustment Rating Scale (SRRS) assessed dependent and independent stressful life events at baseline and at T2 six-month follow-up. The SRRS is a 43-item self-report checklist that measures the presence stressful life events of varying levels of severity. It is a forced-choice measure, where in participants complete the SRRS by responding "yes" or "no" to indicate whether each scale item had occurred in the previous six months. The corresponding stressfulness of scale items was defined by Holmes and Rahe in the initial publication of the SRRS as the amount of change in terms of intensity and length of time on the part of the respondent to accommodate each event's sequela, regardless of its desirability. In developing the SRRS, the authors arbitrarily assigned "Marriage" a weight of 50. The weight assigned to the additional scale items range from 100 for "Death of a spouse" to 11 for "Minor violations of the law." The SRRS is scored by summing the weights of life events participants indicate have occurred within the previous six months. The SRRS is a widely used stressful life events checklists (see Dohrenwend, 2006 for review).

To test the relationship of stress-generation processes for depressive symptoms on later dependent stressful life events, SRRS items were categorized as either *dependent* or *independent* life events. Previous researchers have defined dependent life events as those at least partly due to behavior or characteristics of the respondent or the focus of the event is the respondent, and independent life events as those that occur almost certainly independently of the participants' behavior or the focus of the event is other individuals (Ebberhart & Hammen, 2009; Harkness, et al., 1999; Harkness & Stewart, 2009; Holahan, et al., 2005). To classify SRRS items into dependent and independent stressful

life event categories, scale items were independently rated by a team of five raters. The rating team was comprised of four females and one male. Three of the raters were of a Latino cultural background, while the remaining two raters were European American. Each SRRS item was evaluated according to the degree to which each rater perceived the corresponding stressful life event as resultant of an individual's actions. Items were scored by raters on a Likert scale that ranged from 1 to 5, where a rating of 1 referred to *"the event's occurrence was entirely independent of the individual's actions,"* a rating of 3 referred to *"the event was at least partially due to the individual's actions,"* and a rating of 5 referred to *"the event was entirely due to the individual's actions."* SRRS scale item ratings were averaged across the five raters. Based on procedures used by Eberhart and Hammen (2009; 2010), items with an average rating of three or greater were classified as dependent stressful life events, whereas items with an average rating of less than three were classified as independent stressful life events. Of the 43 SRRS items, 29 were classified as dependent stressful life events and 14 were classified as independent stressful life events. The intraclass coefficient for SRRS rating items was .92, indicating excellent rater agreement. Examples of SRRS items that were classified as dependent stressful life events included "divorce," "marital reconciliation," "fired at work," "change to a different line of work," and "change in residence." Examples of SRRS items that were classified as independent stressful life events included "death of spouse," "death of close family member," "personal injury or illness," "son or daughter leaving home," and "change in financial state."

The SRRS was developed in English. Therefore, for the present study, the SRRS was adapted to Spanish language using a back-translation technique (Marín & VanOss

Marín, 1991). Specifically, two Latinas who were fluent in Spanish and English translated the SRRS from English to Spanish. A third Latina who was also fluent in English and Spanish individual then translated the Spanish version of the SRRS back to English. The subsequent English translation of the SRRS was then compared to evaluate measurement equivalency. Discrepancies among translated versions were resolved in a group meeting to derive culturally equivalent meanings between SRRS English and Spanish versions.

Center for Epidemiological Studies – Depression Scale (CES-D). The Center for Epidemiological Studies – Depression scale (CES-D; Radloff, 1977), a 20-item self-report questionnaire, assessed participants' severity of depressive symptoms at both measurement occasions. The CESD has been used extensively with Latinos (e.g., Crockett et al., 2007; Torres, 2009; Torres & Rollock, 2007). CES-D items instruct respondents to indicate how frequently they have experienced depression symptoms during the past week rated on a Likert scale from 0 (*rarely or none of the time, less than 1 day*) to 3 (*most of the time – 5 to 7 days*). Ratings are summed to obtain a total score ranging from 0 to 60. Although not designed as a diagnostic instrument, the CES-D is sensitive to clinically severe depression symptoms. A CES-D total score of 16 or greater is considered to reflect clinical significance, with higher scores reflecting more severe pathology (Nezu, Maguth Nezu, McClure, & Zwick, 2002; Radloff, 1977). The CES-D has been translated into Spanish, and both Spanish- and English-language versions of this measure were available to participants. Psychometric studies of the CES-D suggest that use of this scale with Latino samples reduces contaminating effects of physical health symptoms found in other measures of depression symptoms (Vega & Rumbaut, 1991),

and has demonstrated functional and scalar equivalence in cross-ethnic comparisons between Latino and Caucasian adolescents (Crockett et al., 2005). Reliability estimates indicated that the CES-D had excellent internal consistency at T1 and T2, Cronbach's $\alpha = .89$ and $.89$, respectively.

Results

Participants

At baseline (T1), 136 participants completed study measures. Of those participants who completed T1, 98 participated in the T2 six-month follow-up assessment. This yielded a 72% retention rate for participants from T1 to T2. All descriptive statistics below refer to information for participants who completed T1 and T2 measurement occasions. Due to attrition from T1 to T2, participants who completed both measurement occasions were compared to participants who completed measures collected at T1 only. One-way analysis of variance (ANOVA) tests for significant differences between completed and non-completed participants found no significant differences for age and number of years lived in the United States. Chi-square tests also found no significant differences between completed and non-completed participants for gender distribution, marital status, income, education level, and nativity status. One-way ANOVA tests indicated no significant differences between completed and non-completed participants with regard to Latino and Anglo acculturation, acculturative stress, intercultural competence, dependent and independent stressful life events, and depression.

Participant demographic characteristics are presented in Table 1. The participants' mean age was 33.35 ($SD = 11.04$), with an age range of 18 to 67. The majority of participants were female. The three most commonly reported marital statuses were, in order of descending frequency, single, married, and unmarried but cohabitating with a partner (see Table 1). With regard to family structure, most participants reported they had

Table 1

Descriptive Statistics for Participant Demographic Characteristics (N = 98)

Variable	N	%	M	SD
Age	94	--	33.35	11.04
Gender	79	80.60	--	--
Marital Status				
Single	49	50.00	--	--
Married	31	31.60	--	--
Divorced	2	2.00	--	--
Separated	3	3.10	--	--
Living with a Significant Other	11	11.20	--	--
Other	2	2.00	--	--
Number of Children				
None	66	67.30	--	--
One	20	20.40	--	--
Two	9	9.20	--	--
Three or More	3	3.00	--	--
Household Income				
Less than \$20,000	7	7.20	--	--
\$20,000 - \$50,000	26	26.80	--	--
\$50,000 - \$75,000	21	21.60	--	--
Greater than \$75,000	43	44.30	--	--
Education Level				
Less than 12 Years	7	7.10	--	--
High School Diploma	2	2.00	--	--
Some College	14	14.30	--	--
Bachelor's Degree or Higher	75	76.50	--	--

no children living at home or had only one child. Overall, participants were well-educated. Most had obtained a bachelor's degree or higher, while a comparatively smaller proportions of participants had attended at least one year of college, only had a high school diploma, or had 11 years or fewer of education. The most commonly reported total household income for the present sample was \$75,000 or greater ($n = 43, 44.8\%$). The range of total household income reported by participants was from less than \$10,000 per year ($n = 2, 2.1\%$) to greater than \$75,000 per year. The greatest proportion of participants identified their cultural background as Mexican, Mexican-American, or Chicano ($n = 48, 48.9\%$); however, participants of Puerto Rican ($n = 12, 12.2\%$), Central/South American ($n = 24, 24.5\%$), Cuban ($n = 2, 2.0\%$), and individuals who identified as having a cultural background other than the above (e.g., multiethnic background, Dominican) were also represented in this sample ($n = 12, 12.2\%$).

Approximately one-third of participants reported that they had been born in a country other than the United States ($n = 31, 31.6\%$). The average number of years lived in the United States was 27.94 ($SD = 11.41$); however, the mean percentage of years lived in the United States, defined as the quotient of years lived in the United States divided by participants' age, was 86.06% ($SD = 25.02\%$).

Descriptive Statistics and Bivariate Correlations

Means and standard deviations for major study variables at T1 and T2 for the 98 completed participants are shown in Table 2. Participants reported moderate levels of Anglo acculturation as well as Latino acculturation, suggesting that participants typically reported bicultural acculturation. Participants' AOS and LOS scores were similar to those reported in the initial ARSMA-II development and validation study (Cueller et al., 1995),

Table 2

Descriptive Statistics for Major Study Variables at T1 and T2 (N = 98)

Variable	T1		T2		Range
	M	SD	M	SD	
Acculturation - Latino Orientation	3.62	0.56	3.85	0.55	1 - 5
Acculturation - Anglo Orientation	3.84	0.40	3.51	0.58	1 - 5
Acculturative Stress	0.80	0.53	0.91	0.6	0 - 5
Intercultural Competence	3.46	0.38	2.99	0.41	0 - 4
Dependent Stressful Life Events	123.46	90.01	108.79	69.29	0 - 908
Independent Stressful Life Events	85.66	73.12	75.50	62.30	0 - 529
Depression	12.60	8.53	15.76	10.74	0 - 60

which was a sample of university students whose generation level ranged from immigrant to fifth generation. Given that approximately two-thirds of the present sample was born in the United States and that the average percentage of years lived in the United States for participants was 86%, it would appear that moderately high levels of Anglo and Latino acculturation are reflective of exposure to Anglo cultural behaviors as well as retention of Latino cultural characteristics. Indeed, participants' AOS and LOS scores were somewhat higher and lower, respectively, compared to another study that employed a sample of mostly immigrant Latinos (Torres, 2010). Participants similarly endorsed a moderately high degree of intercultural competence at both measurement occasions. At baseline as well as six-month follow-up, participants reported low levels acculturative stress. These scores are comparable to prior research that has used the MASI (Torres, 2010).

Participants reported an average depression symptom severity score of 12.60 at T1 and an average depression symptom severity score of 13.23 when measured at T2. The mean depression symptom scores found in the present study are within the range of those reported in other studies that have used the CES-D (Finch et al., 2000; Grzywacz, Hovey, Seligman, Arcury, & Quant, 2006). Furthermore, approximately one-third of participants endorsed significantly severe depression symptoms at T1 and T2 (31.6% and 30.6%, respectively) as defined by obtaining a score 16 or greater on the CES-D (Nezu et al., 2002; Radloff, 1977).

Participants' average SRRS scores at T1 were 85.66 for independent stressful life events and 123.47 for dependent stressful life events. SRRS scores were similar at T2 for independent as well as dependent stressful life events were similar to scores obtained at T1 (see Table 2). The most frequently reported independent stressful life events were

“change in work hours or conditions” ($n = 45, 45.9\%$), and “change in financial state” ($n = 44, 44.9\%$) at T1. Change in work hours and change in financial state remained the most frequently reported independent stressful life events at six-month follow-up ($n = 50, 51\%$, and $n = 38, 38.8\%$, respectively). With regard to dependent stressful life events, the most frequently reported items at T1 were “vacation” ($n = 52, 53.1\%$), “revision of personal habits” ($n = 48, 49\%$), and “change in eating habits” ($n = 37, 37.8\%$). At six-month follow-up, the most frequently reported dependent stressful life events were again “vacation” ($n = 41, 41.8\%$) and “change in eating habits” ($n = 41, 41.8\%$), as well as “change in responsibilities at work” ($n = 42, 42.9\%$). The median number of dependent and independent stressful life events reported at T1 were, respectively, 5 ($M = 5.21, SD = 3.58$) and 2 ($M = 2.83, SD = 2.20$). At T2, participants’ median number of dependent stressful life events was 4 ($M = 5.61, SD = 5.01$) and the median number of independent stressful life events was 3 ($M = 3.18, SD = 2.54$).

Correlations among demographics and major study variables are presented in Table 3. Age was related to years lived in the United States such that older participants reported that they had lived in the United States for longer. Higher education level was significantly associated with greater number of years lived in the United States, lower T1 acculturative stress, and lower T1 depression. Greater T1 Anglo acculturation was significantly associated with greater intercultural competence at both measurement occasions. T1 Latino acculturation was significantly associated with lower T1 and T2 acculturative stress, greater T1 and T2 intercultural competence, and lower T1 depression. T1 acculturative stress was associated with greater dependent and independent stressful life events at T1, but not at T2. Greater T1 acculturative stress was

Table 3

Correlations among Demographics and Major Study Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Years Lived in the U.S.	.52**	--									
3. Household income	.14	.09	--								
4. Education Level	.09	.21*	.10	--							
5. Acculturation - Anglo Orientation	-.07	.10	.09	-.001	--						
6. Acculturation - Latino Orientation	.07	-.20	.07	.05	.01	--					
7. Acculturative Stress	-.15	.10	-.03	-.25*	-.08	-.32**	--				
8. Intercultural Competence	-.11	-.07	.12	.06	.31**	.30**	-.04	--			
9. Dependent Stressful Life Events	-.18	-.04	-.19†	-.05	.03	-.26**	.23*	.03	--		
10. Independent Stressful Life Events	-.04	.18	-.10	.03	-.003	.09	.20*	.02	.51***	--	
11. Depression	-.10	-.06	-.20	-.22*	-.15	-.23*	.44**	-.05	.29**	.34***	--
12. T2 Acculturation - Anglo Orientation	.01	.16	-.02	-.11	.74**	-.02	-.08	.12	.03	.10	-.17
13. T2 Acculturation - Latino Orientation	.13	-.12	.08	-.05	-.04	.84**	-.23*	.26*	-.17	.05	-.17
14. T2 Acculturative Stress	-.14	.12	-.12	-.01	-.13	-.23*	.64**	-.04	.26**	.27**	.35**
15. T2 Intercultural Competence	.06	.08	.12	.14	.26**	.22*	-.08	.60**	-.003	.12	-.04
16. T2 Dependent Stressful Life Events	-.21*	-.01	-.11	-.02	.002	-.08	.13	.07	.61***	.48***	.15
17. T2 Independent Stressful Life Events	-.09	.12	-.10	-.03	-.02	.02	.17	.01	.34***	.42***	.15
18. T2 Depression	-.06	.04	-.15	-.12	-.04	-.17	.24*	-.06	.25*	.33***	.63**

Note. Spearman correlations are reported for household income and education level. All other correlations are Pearson correlations.

† $p = .06$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 3 (Continued)

Correlations among Demographics and Major Study Variables

	12	13	14	15	16	17	18
1. Age							
2. Years Lived in the U.S.							
3. Household income							
4. Education Level							
5. Acculturation - Anglo Orientation							
6. Acculturation - Latino Orientation							
7. Acculturative Stress							
8. Intercultural Competence							
9. Dependent Stressful Life Events							
10. Independent Stressful Life Events							
11. Depression							
12. T2 Acculturation - Anglo Orientation	--						
13. T2 Acculturation - Latino Orientation	.04	--					
14. T2 Acculturative Stress	-.06	-.18	--				
15. T2 Intercultural Competence	.14	.23*	-.01	--			
16. T2 Dependent Stressful Life Events	.06	-.10	.15	.01	--		
17. T2 Independent Stressful Life Events	.01	.02	.19	.10	.61***	--	
18. T2 Depression	-.02	-.09	.28**	.02	.26**	.29**	--

Note. Spearman correlations are reported for household income and education level. All other correlations are Pearson correlations.

† $p = .06$, * $p < .05$, ** $p < .01$, *** $p < .001$

also significantly associated with lower T2 Latino acculturation and greater T2 depression. Greater T1 intercultural competence was significantly related to greater T2 Latino acculturation. Greater T1 depression was significantly associated with greater T2 acculturative stress.

A somewhat different pattern of relationships was found for correlations among T2 variables. Participant demographics were not significantly correlated with most study variables at T2, with the exception that participant age at T1 was negatively related to T2 dependent stressful life events. T2 Latino acculturation was related to greater T2 intercultural competence. T2 depression was significantly correlated with greater T2 acculturative stress, T2 dependent stressful life events, and T2 independent stressful life events. No other T2 variables were significantly correlated.

Previous research suggests that women typically score higher than men on continuous measures of depression symptom severity scores (Nolen-Hoeksema, 2002), and that gender moderates severity of depression symptoms among Latino cultural subgroups (Mendelson et al., 2008). In addition, epidemiological research has found variability among Latino cultural subgroups with regard to prevalence rates of depressive episodes (Alegría et al., 2007), suggesting that the unique experiences, migratory patterns, and acculturative histories of each Latino cultural subgroup may significantly influence cultural adaptation and mental health (Balls Organista et al., 2003). Therefore, preliminary exploratory analyses were conducted to screen for significant differences with regard to gender and participant cultural background. Specifically, independent samples t-tests were conducted to test for gender differences in Anglo and Latino acculturation, acculturative stress, intercultural competence, independent and dependent

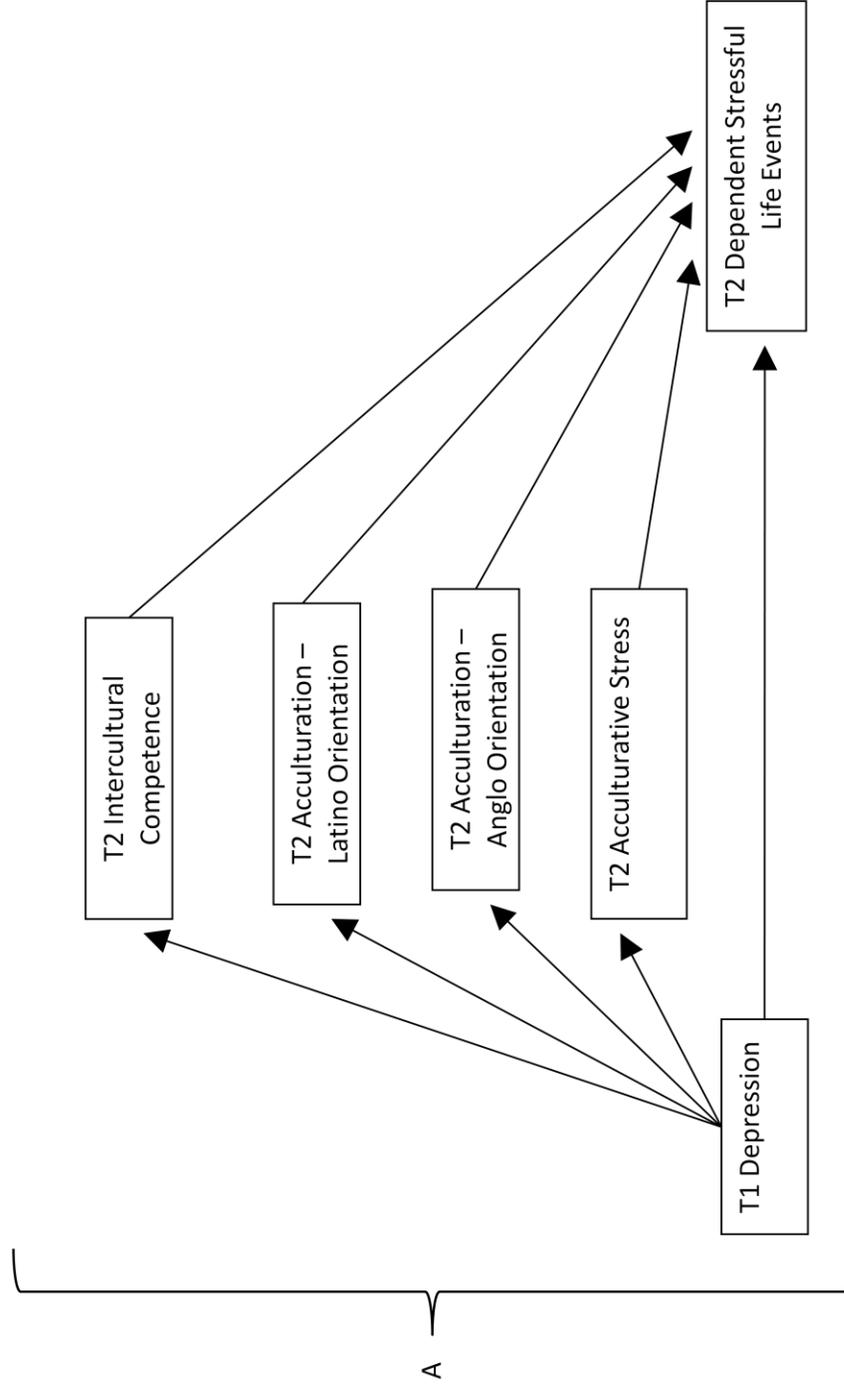
stressful life events, and depression at both measurement occasions. T1 Anglo acculturation was significantly higher for Latinas ($M = 3.88$, $SD = 0.38$) than for Latinos ($M = 3.67$, $SD = 0.43$), $t(96) = -2.12$, $p = .03$. T1 intercultural competence was also significantly greater for Latinas ($M = 3.52$, $SD = 0.37$) than for Latinos ($M = 3.21$, $SD = 0.33$), $t(96) = -3.30$, $p = .001$. No other significant gender differences were found. One-way ANOVAs were conducted to test for significant differences in participant cultural background for among the same variables described above. No significant differences among Latino cultural subgroups were found.

Mediational Analyses

The present sample size for completed participants is below the recommended sample size for sufficient power to detect true effects using Structural Equation Modeling techniques (SEM; Kline, 2005; Tabachnick & Fidell, 2001). Due to sample size, study hypotheses were instead analyzed using separate hierarchical multiple regression analyses. To control for the influence of demographic characteristics on dependent variables, participant age, years lived in the United States, nativity status (born in a country other than the United States vs. United States-born), total household income, and education level were entered in the first step of each regression. To test Hypotheses 1, 2, 3, hierarchical multiple regressions were conducted to test the ability of T2 cultural variables to mediate the longitudinal relationship of T1 depression to T2 dependent stressful life events (see Figure 2, part A). To test Hypothesis 4, hierarchical multiple regression analyses were conducted to test the ability of T2 dependent stressful life events to mediate the relationship of T2 cultural variables to T2 depression (see Figure 2, part B).

Figure 2

Medational Model among Major Study Variables



Note. Participant age, number of years living in the United States, nativity status, total household income, and education level were covaried in all analyses.

To test the Hypothesis 1, that T1 depression is significantly related to cultural variables at six-month follow-up, and as a first step of mediational analyses, four separate hierarchical multiple regressions analyses were conducted with T1 depression entered as the predictor variable and T2 Latino acculturation, T2 Anglo acculturation, T2 acculturative stress, and T2 intercultural competence entered as criterion variables (see Figure 2, part A). The overall regression model for T2 acculturative stress was significant, $F(6, 90) = 3.66, p = .003, R^2 = .19$, and indicated that greater T1 severity of depression symptoms was significantly associated with greater T2 acculturative stress, $\beta = .33, SE = 0.007, t = 3.38, p = .001, \Delta R^2 = .10$. Although the overall regression model for T2 Anglo acculturation predicted by T1 depression was significant, $F(6, 90) = 2.49, p = .03, R^2 = .14$, the simple slope of the relationship between T1 depression and T2 Anglo acculturation was not significant, $\beta = -.17, SE = 0.005, t = -1.68, p = .09, \Delta R^2 = .03$, indicating that T1 depression was not related to T2 Anglo acculturation. Finally, T1 depression was not significantly related to T2 Latino acculturation, $F(6, 90) = 1.87, p = .09, R^2 = .11, \beta = -.20, SE = 0.007, t = -1.92, p = .05, \Delta R^2 = .04$, and T2 intercultural competence, $F(6, 90) = 0.55, p = .77, R^2 = .03, \beta = -.01, SE = 0.005, t = -0.08, p = .93, \Delta R^2 < .001$.

Hypothesis 2 predicted that T2 Latino acculturation, T2 Anglo acculturation, T2 acculturative stress, and T2 intercultural competence would be related to more severe and more frequent T2 dependent stressful life events (see Figure 2, part A). Hypothesis 3 predicted that T1 depression would be related to T2 dependent stressful life events, and that the T1 depression and T2 dependent stressful life events would be related indirectly through T2 Latino acculturation, T2 Anglo acculturation, T2 acculturative stress, and T2

intercultural competence (see Figure 2, part A). To test Hypotheses 2 and 3, a series of hierarchical multiple regression analyses were conducted to test for mediation as recommended by Baron and Kenny (1986) where the hypothesized mediator is first regressed onto the independent variable (the *A* pathway), then the hypothesized dependent variable is then regressed onto the predictor variable (the *C* pathway), and finally the dependent variable is regressed onto the hypothesized mediator (the *B* pathway) and independent variable simultaneously. Barron and Kenny (1986) argued that evidence of mediation is shown by a significant reduction in the relationship of the dependent variable to the independent variable after accounting for the effects of the hypothesized mediator (the *C'* pathway). This has been further advanced by Shrout and Bolger (2002), who showed that an indirect effect, or the influence of the independent variable on the dependent variable through their mutual relationship with a hypothesized mediator is equivalent to the product of the simple regression slopes of the *A* and *B* pathways, derived through hierarchical multiple regression analysis. Although mediation as discussed by Barron and Kenny (1986) indicates a significant *C* pathway is necessary for mediation to occur, recent work by Preacher and Hayes (2004) indicates that a significant indirect effect may occur in the absence of a significant total effect, or significant *C* pathway. Additionally, Shrout and Bolger (2002) have noted that when the measurement of two variables hypothesized to be have a common mediator are distally related in time, the resultant effect sizes may be small and therefore fail to detect a significant total effect.

To test Hypothesis 2, that lower T2 Latino acculturation, lower T2 Anglo acculturation, greater T2 acculturative stress, and lower T2 intercultural competence

would significantly predict T2 dependent stressful life events, and to test the B pathway in mediation, separate hierarchical multiple regression analyses were conducted entering T2 cultural variables as predictors after covarying for the influence of T1 depression and entering T2 dependent stressful life events as the criterion variable (B pathway). Results of hierarchical multiple regressions are shown in Table 4. As shown in Table 4, none of the regression models were significant, indicating that T2 dependent stressful life events were not predicted by T2 Latino acculturation, T2 Anglo acculturation, T2 intercultural competence, and T2 acculturative stress. To test Hypothesis 3, that T1 depression is significantly associated with later dependent stressful life events (see Figure 2, part A), hierarchical multiple regression analyses was conducted entering participant age, number of years lived in the United States, nativity status, total household income, and education level in the first step, and T1 depression in the second step. The overall model for T2 dependent stressful life events was not significant, $F(6, 90) = 1.59, p = .15, R^2 = .09$, and indicated that after controlling for participant demographics, T1 depression was not related to T2 dependent stressful life events, $\beta = .12, SE = 1.04, t = 1.14, p = .25$. To test the ability of T2 Anglo acculturation, T2 Latino acculturation, T2 acculturative stress, and T2 intercultural competence to mediate the relationship of T1 to T2 dependent stressful life events, separate hierarchical multiple regression analyses were conducted entering T2 cultural variables as the predictor variables after covarying T1 depression and entering T2 dependent stressful life events as the criterion. The results of the separate hierarchical multiple regression analyses testing the relationship between T2 cultural variables and T2 dependent stressful life events (B pathway) are presented in Table 4. As shown in Table 4, none of the regression models were significant, indicating that T2

Table 4

Direct and Indirect Effects from Hierarchical Multiple Regression Analyses Predicting Time 2 Dependent Stressful Life Events

Predictor	Direct Effects			Indirect Effects			Bootstrap 95% CI	
	β	SE	t	β	SE	z	Lower Bound	Upper Bound
T2 Acculturation - Anglo Orientation	.07	22.11	0.70	-.01	0.19	-0.64	-.0552	.0174
	$F(7, 89) = 1.42, R^2 = .10, \Delta R^2 = .02$							
T2 Acculturation - Latino Orientation	-.04	16.33	-0.35	.007	0.21	0.35	-.0208	.0610
	$F(7, 89) = 1.36, R^2 = .10, \Delta R^2 = .01$							
T2 Intercultural Competence	.02	23.22	0.23	-.0002	0.03	0.02	-.0235	.0195
	$F(7, 89) = 1.36, R^2 = .09, \Delta R^2 = .01$							
T2 Acculturative Stress	.05	16.56	0.43	.02	0.38	0.42	-.0398	.1297
	$F(7, 89) = 1.38, R^2 = .10, \Delta R^2 = .01$							

$N = 98$

Note. Dependent variable for shown direct effects corresponds to T2 dependent stressful life events after accounting for baseline depression. Indirect effects correspond to the indirect effect of baseline depression on T2 dependent stressful life events through the corresponding variable listed in the *Predictor* column. Bootstrap estimates are for 5,000 samples.

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

dependent stressful life events were not predicted by T2 Anglo acculturation, T2 Latino acculturation, T2 intercultural competence, and T2 acculturative stress. Indirect effects are also presented in Table 4. Sobel z -tests indicated that the indirect effect of T1 depression symptoms on T2 dependent stressful life events through all T2 cultural variables was not significant.

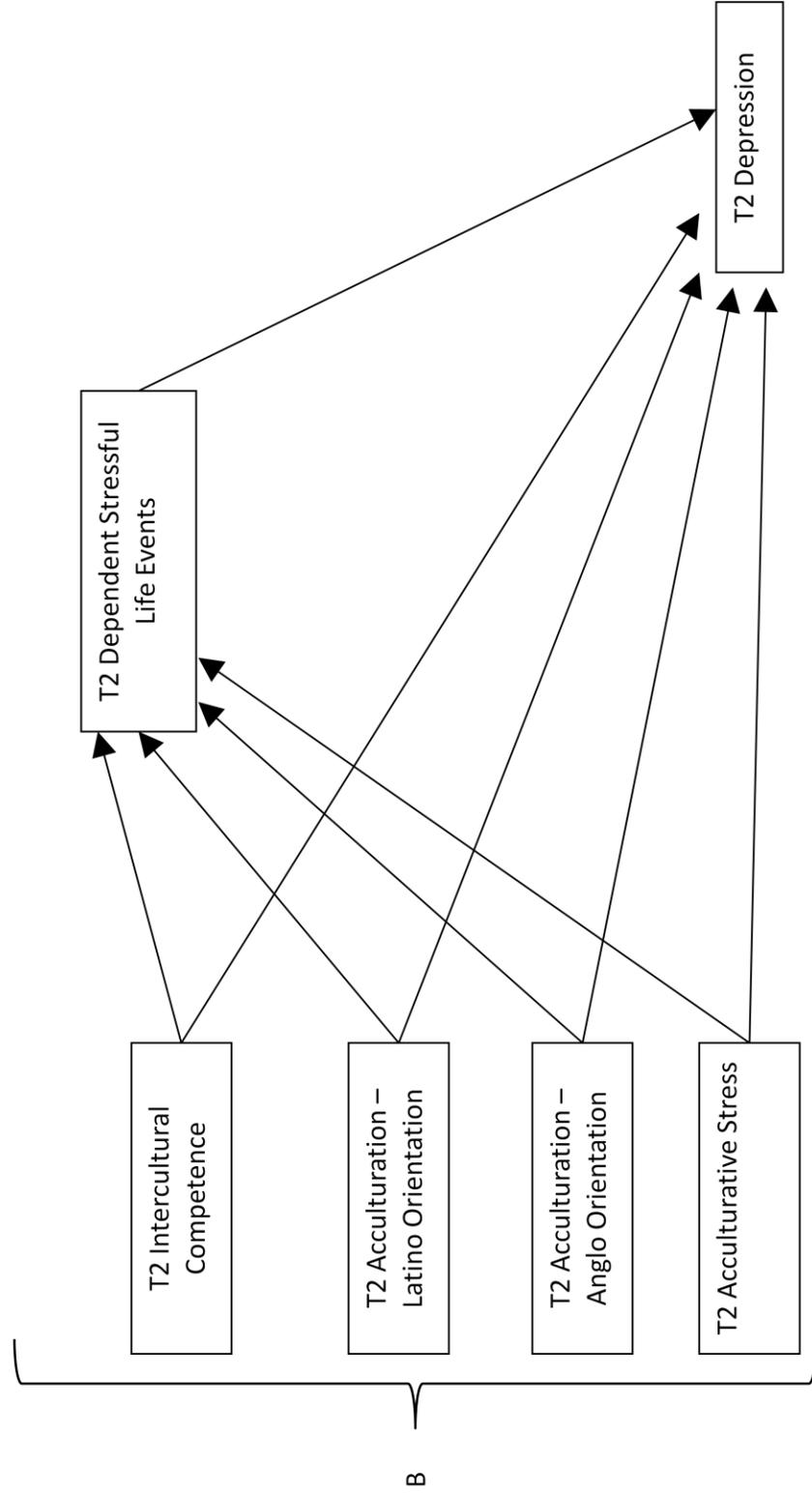
Research suggests that the Sobel z -test suffers from reduced power in relation to detecting significant indirect effects in small samples where the distribution of variables is non-normal (Preacher & Hayes, 2004; Shrout & Bolger, 2002). Bootstrap estimates for 95% confidence intervals of indirect effects have been suggested as alternatives to normal theory tests, as bootstrap estimates impose no assumptions on variables' distributions. Therefore, bootstrap estimates of 95% confidence intervals for the indirect effect of T1 depression on T2 dependent stressful life events through T2 cultural variables were conducted as recommended in Preacher and Hayes (2004). The resultant 95% confidence intervals of the estimated indirect effect for 5,000 samples are shown in Table 4. Shrout and Bolger (2002) suggest that if the confidence interval of the bootstrap estimates procedure contains zero, then the indirect effect is to be interpreted as nonsignificant. As shown in Table 4, all bootstrap estimates of the 95% confidence intervals contain 0.0000, suggesting nonsignificant indirect effects. Thus, T2 Anglo acculturation, T2 Latino acculturation, T2 intercultural competence, and T2 acculturative stress all failed to mediate the relationship between T1 depression and later dependent stressful life events.

To test the first part of Hypothesis 4, that T2 independent stressful life events would significantly predict T2 depression symptoms, hierarchical multiple regression was conducted entering T2 independent stressful life events as the predictor and T2

depression as the criterion variable. T2 independent stressful life events was significantly related to T2 depression, $F(6, 90) = 2.33, p = .04, R^2 = .13$, and indicated that greater T2 independent stressful life events was significantly associated with greater T2 depression symptoms, $\beta = .27, SE = 0.01, t = 2.71, p = .008, \Delta R^2 = .07$. Hypothesis 4 also stated that the relationship between T2 Latino acculturation, T2 Anglo acculturation, T2 intercultural competence, and T2 acculturative stress and T2 depression would be mediated by T2 dependent stressful life events (see Figure 2, part B). As above, series of hierarchical multiple regression analyses were conducted to test the hypothesized relationships after covarying participant age, years living in the United States, nativity status, income, and education level by entering them in the first step of the regression. The results of the multiple regression analyses are presented in Table 5. T2 dependent stressful life events was not associated with T2 Anglo acculturation, T2 Latino acculturation, T2 intercultural competence, and T2 acculturative stress. Similarly, T2 Anglo acculturation, T2 Latino acculturation, and T2 intercultural competence were not significantly related to T2 depression, although T2 acculturative stress was related to T2 depression at the trend level, $p = .06$. T2 dependent stressful life events was not related to T2 depression after controlling for T2 cultural variables. In addition, the relationship of T2 cultural variables to T2 depression was not significantly reduced after including T2 dependent stressful life events in the regression model. Table 6 presents indirect effects of the relationships between T2 cultural variables and T2 depression through T2 dependent stressful life events, Sobel z -tests for significant reduction in the relationship between the T2 cultural variables and T2 dependent stressful life events, and bootstrap estimates of the 95% confidence interval of indirect effects are presented in Table 6. As

Figure 2

Medational Model among Major Study Variables



Note. Participant age, number of years living in the United States, nativity status, total household income, and education level were covaried in all analyses.

Table 5

Results of Mediation Analyses for T2 Cultural Variables, T2 Dependent Stressful Life Events, and T2 Depression

T2 Cultural Variable	β	SE	t
T2 Acculturation - Anglo Orientation			
A: $F(6, 90) = 1.14, R^2 = .07, \Delta R^2 = .002$	-.05	2.82	-0.47
B: $F(7, 89) = 1.63, R^2 = .11, \Delta R^2 = .05$	.23	0.01	2.23*
C: $F(6, 90) = 1.02, R^2 = .06, \Delta R^2 < .001$	-.02	2.35	-0.18
C': $F(7, 89) = 0.14, R^2 = .11, \Delta R^2 = .05$	-.03	2.30	-.30
T2 Acculturation - Latino Orientation			
A: $F(6, 90) = 1.11, R^2 = .07, \Delta R^2 < .001$	.01	0.77	-0.13
B: $F(7, 89) = 1.68, R^2 = .12, \Delta R^2 = .05$	.23	0.01	2.18*
C: $F(6, 90) = 1.13, R^2 = .07, \Delta R^2 = .006$	-.08	1.72	-0.78
C': $F(7, 89) = 1.68, R^2 = .12, \Delta R^2 = .05$	-.07	1.69	-0.67
T2 Intercultural Competence			
A: $F(6, 90) = 1.23, R^2 = .07, \Delta R^2 = .007$	-.08	4.34	-0.84
B: $F(7, 89) = 1.20, R^2 = .10, \Delta R^2 = .04$	.21	0.01	2.02*
C: $F(6, 90) = 1.02, R^2 = .06, \Delta R^2 < .001$	.01	2.50	-0.13
C': $F(7, 89) = 1.20, R^2 = .10, \Delta R^2 = .04$	-.02	0.33	-0.19
T2 Acculturative Stress			
A: $F(6, 90) = 1.17, R^2 = .07, \Delta R^2 = .004$	.06	3.53	0.58
B: $F(7, 89) = 2.45, R^2 = .16, \Delta R^2 = .10$	.21	0.01	2.09*
C: $F(6, 90) = 2.05^\dagger, R^2 = .12, \Delta R^2 = .06$	.25	1.63	2.41*
C': $F(7, 89) = 2.45^*, R^2 = .16, \Delta R^2 = .10^{**}$	.23	1.60	2.27*

$N = 98$

Note. A, B, C, and C' are regression model summary statistics for the following mediated pathways: A - T2 cultural variables and T2 dependent stressful life events; B - T2 dependent stressful life events and T2 depression; C - T2 cultural variables and T2 depression; C' - T2 cultural variables and T2 depression accounting for T2 dependent stressful life events.

Table 6

Sobel Test and Bootstrap Estimate of Indirect Effects of T2 Cultural Variables on T2 Depresison Through T2 Dependent Stressful Life Events

Predictor	Indirect Effects			Bootstrap 95% CI	
	β	SE	z	Lower Bound	Upper Bound
T2 Acculturation - Anglo Orientation	-0.01	0.68	-0.60	-.0264	.0836
T2 Acculturation - Latino Orientation	-0.0002	0.15	-0.01	-.0972	.0209
T2 Intercultural Competence	-0.002	0.14	-0.21	-.0544	.0681
T2 Acculturative Stress	0.012	1.16	0.36	-.0151	.1270

N = 98

Note. Bootstrap estimates are for 5,000 samples.

indicated by Sobel z -tests shown in Table 6, the relationship between all T2 cultural variables and T2 severity of depression symptoms was not significantly reduced by the inclusion of T2 dependent stressful life events, indicating that T2 dependent stressful life events did not mediate the T2 cultural variables-T2 depression relationship. In addition, all bootstrap 95% confidence intervals contain a value of 0.000, further indicating that, accounting for non-normal distributions participant scores, the relationship between T2 cultural variables and T2 depression was not mediated by T2 dependent stressful life events after.

Supplementary Analyses

Due to the above nonsignificant results with regard to study hypotheses, supplementary exploratory analysis of study data was conducted. Multiple regression analysis from the above main hypothesis tests indicated a significant predictive relationship between T1 depression and T2 acculturative stress. Prior research suggests depressive stress-generation processes are of particular relevance for stressors that are interpersonal in nature (Davila et al., 1995; Hammen & Brennan, 2002). Acculturative stress among Latinos has been found to be significantly associated with greater interpersonal conflict within one's cultural group and family (Castilo et al., 2008; Miranda & Matheny, 2000). In addition, greater acculturative stress has been found to be significantly related to lower acculturation (Castillo et al., 2008; Hovey, 2000). It is possible that the influence of acculturation on acculturative stress may be partially accounted for by the influence of acculturation on depression. A significant relationship between acculturation and later acculturative stress through depression may constitute a culturally-specific form of stress-generation processes. Therefore, supplementary

analyses were conducted to test the ability of T1 depression to mediate the relationship of T1 Latino acculturation and T1 Anglo acculturation to T2 acculturative stress. Additional supplementary analyses were also conducted to test the ability of T1 depression to mediate the relationship between T1 dependent stressful life events and T2 acculturative stress, as prior research has suggested that initial stressful life events, or *primary stressors*, may be associated with the generation of additional stressful life events, or *secondary stressors* (Bolger & Zuckerman, 1995). The role of primary and secondary stress processes within a cultural context was demonstrated by Ong et al. (2009), who found that the relationship between chronic discrimination and psychological distress was fully mediated by daily negative events. Similarly, the experience of a dependent stressful life event for Latinos may have a stress-generative “spill-over” effect into increased acculturative stress indirectly through increased depression.

To test these relationships, mediational analyses were conducted using series of hierarchical multiple regressions as suggested by Kenny and Baron (1986). Specifically, series of hierarchical multiple regression equations were conducted regressing T1 depression onto T1 Latino acculturation (A pathway), then T2 acculturative stress regressed onto T1 Latino acculturation (C pathway), and finally T2 acculturative stress regressed onto T1 depression (B pathway). Participant age, nativity status, number of years lived in the United States, household income, and education level were covaried in all analyses. This analytic procedure was repeated for T1 Anglo acculturation and T1 dependent stressful life events, with T1 Anglo acculturation and T1 dependent stressful life events replacing T1 Latino acculturation in their respective A, B, and C pathways.

Results from the multiple regression analyses are presented in Table 7. As shown, the overall regression model testing the relationship between T1 Latino acculturation and T1 depression was significant at the trend level, $p = .057$. Specifically, lower T1 Latino acculturation was significantly associated with greater T1 depression. Multiple regression testing the relationship between T1 depression and T2 acculturative stress indicated that greater T1 depression was significantly associated with greater acculturative stress at T2 (see Table 7). In contrast, the regression model that tested the relationship between T1 Latino acculturation and T2 acculturative stress was not significant, indicating that there was a nonsignificant total effect of T1 Latino acculturation on T2 acculturative stress. As noted earlier, a significant indirect effect may be present even in the absence of a significant total effect (Shrout & Bolger, 2002). The indirect effect of T1 Latino acculturation on T2 acculturative stress through T1 depression was $-.07$. The indirect effect indicated that a one-point increase in T1 Latino acculturation was associated with a $.07$ decrease in T2 acculturative stress through T1 depression. A Sobel z -test indicated that the relationship between T1 Latino acculturation and T2 acculturative stress was attenuated by the indirect relationship of T1 Latino acculturation on T2 acculturative stress through T1 depression at the trend level, $z = -1.86$, $p = .06$. Due to skewed distribution of variables used to test the above mediation analyses, bootstrap procedures were implemented to estimate the 95% confidence interval of the indirect effect of T1 Latino acculturation on T2 acculturative stress through T1 depression for 5,000 samples (Preacher & Hayes, 2004; Shrout & Bolger, 2002). The 95% confidence interval of the indirect effect ranged from $-.1653$ to $.0009$. The bootstrapped 95% confidence interval

contains 0.000, suggesting that the effect of T1 Latino acculturation on T2 acculturative stress is not mediated by T2 depression.

The results of multiple regression analyses testing the relationship of Anglo acculturation to T2 acculturative stress are presented in Table 7. The relationship of Anglo acculturation to T1 depression was not significant. Anglo acculturation was also not significantly related to T2 acculturative stress. However, as with the above analysis, T1 depression was significantly related to T2 acculturative stress. The indirect effect was $-.04$, indicating that a one-point increase in Anglo acculturation was associated with a $.04$ decrease in T2 acculturative stress through depression. A Sobel z -test indicated that the relationship between T1 Anglo acculturation and T2 acculturative stress was not significantly reduced by the indirect relationship of T1 Anglo acculturation on T2 acculturative stress through T1 depression, $z = -1.15$, $p = .24$. Bootstrap procedures for 5,000 samples were conducted to estimate the 95% confidence interval of the indirect effect of T1 Anglo acculturation on T2 acculturative stress through T1 depression. The bootstrap estimate of the 95% confidence interval for the indirect effect ranged from $-.1766$ to $.0008$. The estimated 95% confidence interval contains zero, suggesting a nonsignificant indirect effect for T1 Anglo acculturation on T2 acculturative stress through T1 depression.

To test the ability of T1 depression to mediate the relationship between T1 dependent stressful life events and T2 acculturative stress, hierarchical multiple regression analyses were conducted as above. The results indicated that greater T1 dependent stressful life events were significantly related to greater T1 depression as well as greater T2 acculturative stress (see Table 7). The relationship between T1 depression

Table 7

Results of Mediatational Analyses for Latino Acculturation, Anglo Acculturation, Depression, and Acculturative Stress

Predictor	β	SE	t
Acculturation - Latino Orientation			
A: $F(6, 90) = 2.13^\dagger, R^2 = .12, \Delta R^2 = .05^*$	-.24	1.58	-2.38*
B: $F(7, 89) = 3.24^{**}, R^2 = .20, \Delta R^2 = .11^{**}$	.31	0.01	3.06^{**}
C: $F(6, 90) = 2.03, R^2 = .12, \Delta R^2 = .02$	-.17	0.11	-1.61
C': $F(7, 89) = 3.24^{**}, R^2 = .20, \Delta R^2 = .11^{**}$	-.09	0.11	-.89
Acculturation - Anglo Orientation			
A: $F(6, 90) = 1.39, R^2 = .08, \Delta R^2 = .01$	-.13	2.22	-1.25
B: $F(7, 89) = 3.43^{**}, R^2 = .21, \Delta R^2 = .12^{**}$	.31	0.007	3.19^{**}
C: $F(6, 90) = 2.09, R^2 = .12, \Delta R^2 = .03$	-.17	0.15	-1.71
C': $F(7, 89) = 3.43^{**}, R^2 = .21, \Delta R^2 = .12^{**}$	-.13	0.14	-1.36
Dependent Stressful Life Events			
A: $F(6, 90) = 2.46^*, R^2 = .14, \Delta R^2 = .07^{**}$	.28	0.77	2.73^{**}
B: $F(7, 89) = 3.38^{**}, R^2 = .21, \Delta R^2 = .12^{**}$	.23	0.01	2.18*
C: $F(6, 90) = 2.35^*, R^2 = .13, \Delta R^2 = .04^*$	.21	0.001	2.08*
C': $F(7, 89) = 3.38^{**}, R^2 = .21, \Delta R^2 = .12^{**}$	.13	0.001	1.27

$N = 98$

Note. A, B, C, and C' are regression model summary statistics for the following mediated pathways: A - Latino acculturation/Anglo acculturation/dependent stressful life events and baseline depression; B - baseline depression and T2 acculturative stress; C - Latino acculturation/Anglo acculturation/dependent stressful life events and T2 acculturative stress; C' -Latino acculturation/Anglo acculturation/dependent stressful life events and T2 acculturative stress accounting for baseline depression.

$^\dagger p < .06$ * $p < .05$ ** $p < .01$ *** $p < .001$

and T2 acculturative stress was significant such that greater T1 depression was associated with greater T2 acculturative stress. The relationship between T1 dependent stressful life events and T2 acculturative stress was nonsignificant after accounting for the influence of T1 depression. The indirect effect was .08, indicating that a one-point increase in T1 dependent stressful life events was associated with a .08 increase in T2 acculturative stress through T1 depression. A Sobel z -test indicated a significant attenuation in the T1 dependent stressful life events-T2 acculturative stress relationship after accounting for their indirect relationship through T1 depression, $z = 2.24$, $p = .02$. Bootstrap procedures for 5,000 samples were conducted to estimate the 95% confidence interval of the indirect effect of T1 dependent stressful life events on T2 acculturative stress through T1 depression. The bootstrap estimate of the 95% confidence interval for the indirect effect ranged from .0073 to .1924. The estimated 95% confidence interval does not include zero, suggesting a significant indirect effect for T1 dependent stressful life events on T2 acculturative stress through T1 depression.

Discussion

The purpose of the present study was to test the role of cultural adaptation variables, specifically Latino and Anglo acculturation, acculturative stress, and intercultural competence, as variables that confer an indirect influence on the stress-generation process of depression on later dependent stressful life events. Based on previous research that has found a relationship among depression and later dependent life stress (Holahan et al., 2005; Joiner et al., 2005; Flynn, Kecmanovic, & Alloy, 2010) as well as research suggesting a relationship between acculturation and depression (Torres, 2010; Torres & Rollock, 2007), acculturative stress and depression (Crockett et al., 2007; Torres, 2010), and intercultural competence and depression (Torres, 2009) four main hypotheses were proposed. First, it was hypothesized that depression would be significantly related to Latino acculturation, Anglo acculturation, acculturative stress, and intercultural competence when measured at six-month follow-up. Second, it was hypothesized that Latino acculturation, Anglo acculturation, acculturative stress, and intercultural competence measured at six-month follow-up would be related to greater dependent stressful life events. Third, it was hypothesized that depression would be significantly associated with dependent stressful life events measured at six-month follow-up, and that this relationship would be mediated by their indirect relationships through six-month follow-up Latino acculturation, Anglo acculturation, acculturative stress, and intercultural competence. Finally, it was hypothesized that six-month follow-up dependent stressful life events would be significantly related six-month follow-up depression.

Overall, results of the present study did not support the stress-generative roles of Latino acculturation, Anglo acculturation, acculturative stress, and intercultural competence in the indirect relationship of depression to later dependent stressful life events. Although depression was significantly related to greater acculturative stress at six-month follow-up, depression was not related to six-month follow-up Latino acculturation, Anglo acculturation, and intercultural competence. None of the cultural variables measured at six-month follow-up were related to dependent stressful life events. Baseline depression was not significantly related to later dependent stressful life events, and the relationship between depression and six-month follow-up dependent stressful life events was not significantly mediated by six-month follow-up Anglo acculturation, Latino acculturation, acculturative stress, and intercultural competence. Dependent stressful life events at six-month follow-up were unrelated to six-month follow-up depression; however, six-month depression was related to six-month follow-up independent stressful life events.

Supplementary analyses were conducted to further examine the relationship between depression, dependent stressful life events, and acculturation as culturally-specific stress-generation processes. Supplementary analyses found support of a significant indirect relationship between baseline dependent stressful life events and acculturative stress measured at six-month follow-up mediated by greater baseline depression. Lower baseline Latino acculturation was associated with greater baseline depression at the trend level of significance, and baseline depression was significantly related to greater T2 acculturative stress. Although the direct relationship of Latino acculturation to T2 acculturative stress was not significant, the results suggested a

possible indirect relationship such that lower Latino acculturation was associated with greater levels of later acculturative stress through an increase in baseline levels of depression. In contrast, supplementary analysis failed to support a direct relationship between Anglo acculturation and acculturative stress at six-month follow-up, and did not support depression as a mediator of the indirect effect of Anglo acculturation on later acculturative stress. These findings from supplemental analyses suggest support for 1) a possible culturally-specific stress-generation processes which is mediated by depression and 2) evidence for the potential role of heritage culture-based behavior in Latino stress-generation.

Stressful Life Events and Depression

Although the main hypotheses of the present study were generally unsupported by the results, the findings from this study partially replicated findings from prior depressive stress-generation research as well as research regarding Latino mental health, and suggest a possible process by which depression could be associated with Latino psychosocial functioning. The results suggest that depression severity is unrelated to later culturally-relevant behaviors and coping competencies. Latino acculturation measured at baseline was, however, found to be related to baseline depression at the trend level of statistical significance. Thus, although the present results are consistent with prior research suggesting that knowledge of and engagement in cultural behaviors based in one's heritage culture may be related to intensity of depressive symptoms among Latinos, depression itself may not predict acculturation and intercultural competence over time. In relation to stress-generation processes, among this sample of Latinos depression was unrelated to later dependent stressful life events. In addition, the changes in cultural

variables did not influence the presence of life events that are at least in part due to individuals' actions. The findings that depression was unrelated to later dependent stressful life events through cultural variables, and that six-month follow-up dependent stressful life events was unrelated to six-month follow-up depression suggest a possible cultural variation in stress-generation process. That is, among Latinos, depression appears to be unrelated to later dependent stressful life events.

Overall, little evidence was found for depressive stress-generation among Latinos as described by Hammen (1991). Although this study found support for a significant relationship between baseline depression and later acculturative stress, there was no support for a relationship among baseline depression and later dependent stressful life events as mediated by acculturative stress. Cultural adaptation processes, with regard to acculturation and intercultural competence, are therefore robust against the longitudinal influence of depressive symptom severity. Furthermore, the severity of dependent stressful life events that participants experienced was not influenced by participants' level of depression as assessed at baseline. This finding was surprising given the body of research suggesting a prospective relationship between depression and later dependent stressful life events (Davila et al., 1995; Hammen, 1991; Holahan et al., 2005).

Consequently, it may be that previous research on stress-generation processes is specific to predominantly European American samples and does not generalize to Latino samples. It is also worth note that the most commonly endorsed stressful life events in the present study, such as vacation and change in personal habits, may not necessarily constitute negative stressful life events, and as such may be more likely to be associated with

positive mental health outcomes such as life satisfaction and well-being, rather than depression.

The finding that dependent as well as independent stressful life events were significantly related to greater depression is consistent with a substantial research body that has found that greater levels of stressful life events adversely influence mental health (Kendler, Thornton, & Gardner, 2000; Monroe & Hadjiyannakis, 2002; Monroe, Torres, Guillamont, Harkness, Roberts, Frank et al., 2006; Monroe, Slavich, Torres & Gotlib, 2007). However, in this study dependent stressful life events were related to depression only at baseline and not at six-month follow-up. Only independent stressful life events at six-month follow-up were significantly related to six-month follow-up depression. The finding that dependent stressful life events did not predict later depression was unexpected, especially in light of previous research suggests that dependent stressful life events prospectively predicts depression (Eberhart & Hammen, 2010; Pettit, Lewinsohn, Seeley, Roberts, & Yaroslavsky, 2010; Potthoff et al., 1995). It is possible that among Latinos the association between stressful life events and psychological functioning may be more immediate in terms of its effects. Indeed, the particular dependent stressful life events as assessed in this study represent more acute, as opposed to chronic, life events. Thus, with regard to the relationship between stressful life events and depression, the immediate influence of stressful life events on mental health may be quite strong, but if a particular event is not sustained the association with depression may decrease. Indeed, research suggests that earlier depressive episodes are more strongly associated with acute, severely stressful life events (Monroe & Harkness, 2002; Kendler, 2000) after which the strength of association between stressful life events and depression significantly

diminishes. In contrast, depressive relapses and history of greater number of depressive episodes are more strongly associated with chronic stressors and strains (Monroe et al., 2005; Monroe et al., 2006). Given that the present sample of participants represented a community sample of Latinos, it is possible they had experienced fewer episodes of depression relative a clinical sample of depressed individuals. Thus, it is understandable that independent stressful life events – which tend to be more severe than dependent stressful life events (Monroe & Harkness, 2002) – may have a stronger influence on Latino depression than dependent stressful life events.

Depression as Mediator for Later Acculturative Stress

Dependent stressful life events and acculturative stress. Significant findings from supplementary analyses of the present study suggest that depression may influence stress associated with cultural change and adaptation. In particular, dependent stressful life events measured at baseline are associated with greater depression, and depression in turn is associated with greater acculturative stress six months later. The indirect effect of dependent stressful life events on later acculturative stress through depression suggests that, among Latinos, the influence of dependent stressful life events on later cultural stress is partially transmitted through depression. These findings are congruent with previous research that has found that dependent stressful life events are associated with depression (Eberhart & Hammen, 2010; Pettit, Lewinsohn, Seeley, Roberts, & Yaroslavsky, 2010; Potthoff et al., 1995), as well as previous cross-sectional research suggesting a relationship between acculturative stress and Latino depression (Thoman & Surís, 2004; Torres, 2010). Stressful life events that are, at least in part, due to the

behavior of an individual influences the severity of depression symptoms reported by an individual which, in turn, may influence participants' acculturative stress.

The significant indirect relationship of stressful life events to later acculturative stress through depression suggests a potential mechanism by which acculturative stress is influenced. The significant mediated relationship suggests that Latino depression severity is implicated as influencing the relationship between stressful life events and later acculturative stress. Of note for this relationship is that it is suggestive of a transactional relationship between contextual and environmental stressors, individual depression, and later subsequent cultural stressors. Specifically, the presence of dependent stressful life events from within the individuals' environment influences depression severity. The findings also suggest that increases in depression associated with dependent stressful life events influences the environment to develop later acculturative stress.

The present stress-generation findings are congruent with previous research related to stress-proliferation processes (e.g., Bolger & Zuckerman, 1995; Ong, Fuller-Rowell, & Burrow, 2009) which suggests that the experience of an initial stressor, or primary stressor, is associated with the development of additional stress, or secondary stressors. The experience of an initial dependent stressful life event is associated with the creation of additional stressors longitudinally. Moreover, the finding that depression significantly mediates the relationship of dependent stressful life events to later acculturative stress, in conjunction with the nonsignificant total effect for the relationship between dependent stressful life events and later acculturative stress, suggests that experiencing a dependent stressful life event may not be sufficient to generate later acculturative stress. Rather, the results show that the experience of dependent stressful

life events influences Latino psychological functioning such that greater depression is experienced. Greater depression, in turn, is associated with greater acculturative stress. This series of relationships suggests that contextual and environment stress is related to Latino psychological functioning *vis-à-vis* dependent stressful life events, and this in turn may influence the environment through later increased acculturative stress.

Acculturation and acculturative stress. Supplementary analyses found a statistical trend between Latino acculturation and later acculturative stress that was mediated by depression. This finding is suggestive of a possible culturally-specific stress generation relationship wherein lower retention of behaviors and characteristics associated with Latino culture are associated with elevated depression, which in turn is associated with greater additional cultural stressors. The association between lower Latino acculturation and greater depression is congruent with prior epidemiological research that has found greater rates of psychiatric disorder among later generation Latinos compared to Latino immigrants (Alegría et al., 2008). Further, prior research suggests that decreased Latino acculturation differentiates low-depressed from moderately-depressed Latinos, and that Latino acculturation may buffer against depression (Torres, 2010). Thus, the finding in the present study that lower Latino acculturation is associated with greater depression adds to a body of research suggesting that the lower engagement in and preference for behaviors associated with Latino heritage culture may contribute to poorer psychosocial functioning such as greater depression symptom severity.

The association of decreased levels of Latino acculturation to greater levels of depression symptom severity among Latinos in the present study is also consistent with

previous research indicating that U.S.-born Latinos exhibit significantly greater rates of depressive disorders compared to foreign-born Latinos (Alegría et al., 2008). The possible relationship of Latinos' nativity status to psychological functioning has been termed "the immigrant paradox," because this research suggests that exposure to mainstream European American culture has an adverse influence on Latino mental health. Further investigation by prior researchers into the specific factors that contribute to the exacerbation of psychopathology among U.S.-Latinos have provided findings that contribute to the explanation of the relationship between lower Latino acculturation and depression found in the present study. In particular, evidence of the immigrant paradox has been most consistently supported among individuals of Mexican or Mexican American cultural background (Alegría et al., 2008), among individuals who are recent immigrants to the United States (i.e., have lived in the United States for 5 years or fewer; Alegría et al., 2007), among individuals who immigrated to the United States between ages of 13 and 34 (Alegría et al., 2007), and among third-generation Latinos compared to first- and second-generation Latinos (Alegría et al., 2008).

These prior research findings suggest that the variables associated with the "immigrant paradox" may be more complex than simple demographic variables such as one's nativity and generational status. In relation to the findings of the present study, findings of factors related to the immigrant paradox suggest that variation in cultural characteristics and behaviors may be significantly related to Latino mental health. For example, among those Latinos who are more recent immigrants, retention of heritage-culture behaviors and characteristics may help establish social connections among other Latinos who are living in the United States, whereas acculturation related to the

acquisition of receiving-culture behaviors may help facilitate effective navigation through one's environment and achieve functional goals such as employment. It is important to emphasize that two-thirds of the participants in the present study were U.S.-born Latinos, and that those Latinos who were foreign-born had resided for a substantial portion of their lives in the United States. Previous research suggests that depression is less likely among immigrant Latinos who have lived less than five years in the United States, whereas there is no difference between U.S.-born Latinos and immigrant Latinos who have lived in the United States for longer than five years with regard to likelihood for meeting criteria for depression (Alegría et al., 2007). The present samples' acculturation scores suggested a highly bicultural sample. The result of the present study, when considered in conjunction with previous research regard the immigrant paradox, suggest that Latino acculturation, may possibly play a crucial role for Latino mental health with regard to mitigating depression among biculturally-accultured individuals. Perhaps for those Latinos who engage in a higher level of mainstream cultural behaviors that help accomplish functional or "basic" tasks, greater participation in behaviors associated with one's cultural background helps maintain a sense of connection and social engagement with other Latinos and thus lower depression. Nonetheless, at minimum the results of the present study are consistent with the findings of the immigrant paradox and further suggest cultural adaptation variables— rather than exclusively the amount of time one has resided in the United States – may contribute to previously documented relationship between Latino individuals' nativity status and depression.

Acculturative stress has typically been conceptualized as stress reactions that are secondary to the process of acculturative change and adaptation (Berry, 2006). The

finding of the present study that lower Latino acculturation was indirectly related to acculturative stress through greater depression suggests that acculturative stress may, perhaps, encompass broader cultural stress phenomena than has initially been theorized. Berry (2006) argued that acculturative stress arises when the culturally-based behavioral or cognitive demands of a situation exceed the current cultural competencies of the acculturating individual. Building on this conceptualization, other researchers have noted that sources of acculturative stress may manifest from within the Latino culture and the majority cultural group (Rodriguez et al., 2002). Consequently, poorer psychological outcomes such as elevated acculturative stress may not necessarily arise of culturally-based adaptation demands, but rather from a disparity between one's culturally-based behavior and the environmental context in which an individual is embedded (Ogbu, 1981). The present study's finding of a potential relationship of Latino acculturation to later acculturative stress as mediated by depression may suggest that not only are lower levels of Latino cultural behavior associated with later culturally-based stressors, as has been found in previous research, but that Latino psychological functioning may play a potential role in the propagation of acculturative stress.

Depression as potential contributor to cultural stress generation. Two possible explanations may account for the relationship between depression and later acculturative stress. First, depression may influence how Latinos subjectively perceive and evaluate the process of cultural adaptation. That is, Latinos who report greater depression may be more likely to negatively evaluate themselves and perceive themselves as belonging to neither their own cultural group nor mainstream American culture and thus experience greater acculturative stress. Indeed, neuroticism and negative

emotionality, a personality component associated with depression (Klein, Durbin, Shakman, & Santiago, 2002), has been found to be related to acculturative stress (Mangold, Veraza, Kinkler, & Kinney, 2007). Similarly, cognitive components of depression such as depressive rumination are associated with negative perception of one's social support (Flynn et al., 2010). Second, depression may also adversely influence Latinos' interpersonal relationships through impairment in social functioning. Depressive cognitions such as hopelessness and rumination have been found to be associated with later stressful life events (Joiner et al., 2005), and in particular the stressor of interpersonal rejection (Flynn et al., 2010; Joiner, 2002; Segrin & Dillard, 1992). Taken together, the dependent stressful life events-depression-acculturative stress relationship may reflect that greater depression places significant strain – perceived or actual – on Latinos' interpersonal relationships. Possible interpersonal rejection and other ruptures in social relationships, some of which may originate from members of the mainstream American culture as well as critical members of Latino culture such as family members, may in turn contribute to the increases in later acculturative stress. For example, decreased Latino family cohesion and increased family conflict has been found to be related to greater acculturative stress (Castillo, Cano, Chen, Blucker, & Olds, 2008; Hovey, 2000). It is important to emphasize that the present study highlights what may constitute a form of cultural stress generation that may be distinct from stress generation as originally described by Hammen (1991), as baseline depression was unrelated to later dependent stressful life events. Thus, depression among Latinos appears to be associated with subsequent stress related to cultural adaptation but may not contribute significantly to the onset of additional dependent life stress. These results expand upon the traditional

conceptualization of acculturative stress as a stress response to culturally-based demands that exceed the cultural behavioral, cognitive, or emotional competencies of the adapting individual (Berry, 2006). The results suggest levels of acculturative stress also may be influenced by internal mood states. Depression may not directly place specific demands for cultural adaptation on Latinos but may adversely influence the cultural context of which the individual is embedded such that greater pressures to maintain continuity with one's heritage culture as well as assimilate to the mainstream culture are either perceived or experienced.

Limitations and Future Directions

The findings of the present study should be considered in the context of methodological limitations. First, the measure of stressful life events employed in the study was a checklist procedure. Researchers have noted the limitations of using checklist measures of stressful life events in research (Dohrenwend, 2006; Monroe, 2008), as checklists have the potential to conflate a stressor's occurrence – that is, whether the event occurred – with the impact of the event on the respondent – that is, how stressful the event was. Checklists further assume an equivalent impact of all stressors across respondents. This assumption may not necessarily be true, as research that implements stress-and-coping frameworks has demonstrated the ability of coping strategies to moderate the impact of the event on an individuals' psychological functioning. The present study addressed this limitation by using one of the most widely established stressful life events checklists that has current evidence of predictive validity for individuals' psychological functioning as well as strong associations with perceived stress (Utsey, Giesbrecht, Hook, & Stanard, 2008). The present study also differentiated

between stressful life events that were due to participants' actions and those events that were independent of participants' behavior. To reduce the confounds presented by checklists, researchers have recommended implementing semi-structured interview procedures that are later coded by an independent rating team for objective stressfulness, or threat, of event as well as the event's independence (Brown, 1989; Monroe, 2008). Although practical limitations precluded the use of interviews in the present study, future research on stress-generation processes among Latinos may benefit from interview measures, as these may permit more culturally relevant stressors than those identified in standard checklist procedures and would reduce the conflation between event occurrence and objective event threat.

Second, the present study is limited with regard to the range of stressful life events assessed. Specifically, it is possible that the types of items denoted as dependent failed to reflect the full spectrum of stressful life events that may be most strongly influenced by severity of depression. Although the stressful life events measure contained items such as "Fired at work," "Divorce," and "Separation," a growing body of research suggests that interpersonal conflict may be of critical importance in further clarifying the role of depression in stress-generation (Eberhart & Hammen, 2010; Flynn et al., 2010). Given that the results provide evidence of a longitudinal relationship between depression and later acculturative stress among Latinos, future research should investigate the role of interpersonal stressors (e.g., romantic conflict stress, interpersonal rejection, family cohesion) as variables that may influence the relationship between depression and later acculturative stress. Furthermore, it is important to note that most of the SRRS items were not endorsed by participants. As noted above, out of a possible 29 items the median

number of dependent stressful life events endorsed by participants at baseline and six-month follow-up was 5 and 4, respectively. For independent stressful life events, the median at baseline and six-month follow-up was 2 and 3, respectively, out of 14. The relatively infrequent endorsement of scale items may have produced a ceiling effect on dependent and independent stressful life event scores, thus diminishing the strength of associations among variables. Therefore, in addition to measures of relationship and interpersonal stress, the association of depression to stressful life events among Latinos may be more evident if measures of everyday hassles were used. Consequently, measures of stressful life events specific to interpersonal stress, relationship stress, romantic stress, and everyday hassles should be considered in future research endeavors.

A final limitation to the present study is the number Latina compared to Latino participants. Nearly four times as many Latinas than Latinos completed study measures. The large representation of Latinas in this study is important to bear in mind when considering this study's results because greater rates of depression as well as higher scores on continuous depression measures have been noted for women in the general population (Nolen-Hoeksema, 2002), and in particular significantly greater odds ratios for rates of depression diagnoses have been found for Latinas compared to Latinos (Blazer, Kessler, McGonagle, & Swartz, 1994; Oquendo, Ellis, Greenwald, Malone, Weissman, & Mann, 2001). The tendency for women to score higher on measures of depression is significant in light of the fact that CES-D scores in the present study were close to the cut off score of 16 for significantly severe depression symptoms at baseline and six-month follow-up. Thus, depression symptom severity scores may be somewhat inflated by the large number of Latinas in the present study sample. However, an

important distinction between this study compared to prior studies investigating the relationship of gender to depression with Latino samples is that a significant relationship has been found for prevalence rates depressive episodes only (i.e., whether a participant meets diagnostic criteria for a Major Depressive Episode; Blazer et al., 1994; Oquendo et al., 2001), whereas the present study assessed severity of depressive symptoms.

Additionally, preliminary data analysis in the present study found that Latinas and Latinos did not significantly differ in their depression symptom severity scores, and this is congruent with additional research that has found no difference between Latinas and Latinos on continuous depression instruments (Crocket et al., 2007). Although preliminary data analysis found no differences between Latina and Latino participants' depression scores, the small sample size of the present study precluded analysis of the influence of gender as a moderating variable. Thus, the findings of this study should be considered provisional and further investigation with regard to the possible transactional, stress-generation relationship between cultural adaptation variables, depression symptoms, and stressful life events with a larger sample of Latino men is recommended.

The present study also supports evidence of a transactional relationship between stress and depression, where the presence of initial stressors influences the development of depression, which in turn is related to later cultural stress. Future research should endeavor to examine the role variables that serve as coping resources among Latinos. For example, ethnic identity commitment has been found to buffer the relationship of stressor such as discrimination on later depression among Latinos (Torres & Ong, 2010).

Similarly, active coping, which has been shown to moderate the longitudinal relationship

of stressors on depression among African Americans (Torres, Driscoll, & Burrow, 2010), may be important with respect to the influence of stressful life events on depression.

Summary

The goal of the present study was to investigate the role of cultural variables – acculturation, acculturative stress, and intercultural competence – in the longitudinal relationship of depression to stressful life events. The initial hypotheses that depression would be related to later dependent stressful life events, and subsequent later depression, through cultural variables were not supported. Supplementary analyses provided support for a transactional stress and depression relationship where dependent stressful life events and, possibly, Latino acculturation, were related to later acculturative stress through depression. This study is among the first to test the longitudinal relationship among culturally-relevant variables and Latino mental health. By extension, the present study is similarly among the first to investigate a longitudinal, transactional relationship between depression and cultural variables among Latinos. The present study found that dependent stressful life events significantly contribute to greater depression, and that this in turn influences greater acculturative stress at six-month follow-up. The results suggest depression may adversely influence the social environment Latinos, thus generating additional acculturative stress. As such, future research into the impact of depression on the interpersonal relationships of Latinos, as well as further investigation of coping mechanisms that buffer the stress-depression relationship, is indicated in order to identify the interaction of stress, depression, and cultural adaptation in the context of Latinos living in the United States.

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APPENDIX A

MARQUETTE UNIVERSITY
 AGREEMENT OF CONSENT FOR RESEARCH PARTICIPANTS
 Survey of Latino Cultural Experiences, Stressful Life Events, and Mental Health
 Mark W. Driscoll, M.S., Principal Investigator
 Department of Psychology

You have been invited to participate in this research study. Before you agree to participate, it is important that you read and understand the following information. Participation is completely voluntary. You may ask questions about anything you do not understand before deciding whether or not to participate by contacting the Principal Investigator, Mark Driscoll, at mark.driscoll@marquette.edu.

PURPOSE: The purpose of this research study is to examine how the experiences of Latinos/as living in the United States influence mental health and cope with stressful life events. You will be one of approximately 300 participants in this research study.

PROCEDURES: You will be asked to complete a survey that will ask about your experiences as a Latino/a living in the United States. This survey will ask about mood, cultural behaviors and preferences, and possible stressful life events that may have happened to you recently. After six months, you will receive an email that will invite you to complete this survey again.

DURATION: You will be asked to complete this survey two times: now, and the same survey in approximately six months. It is expected that each survey will take 30 – 40 minutes of your time.

RISKS: There are no anticipated risks associated with your participation in this study. Any risks presented by participation are no more than what you would encounter in everyday life. If you become uncomfortable at any point you are free to discontinue your participation.

BENEFITS: Although there are no direct benefits to you for participation in this study, potential benefits include gaining greater insight into your experiences as a Latinos living in the United States and a better understanding of psychological research. The information you provide may also be used to improve the health of Latinos who live in the United States.

CONFIDENTIALITY: All information you reveal in this study will be kept confidential. All your data will be assigned a random code number rather than using your name or other information that could identify you as an individual. When the results of the study are published, you will not be identified by name. All information that could identify you personally as a participant will be stored in a locked filing cabinet. Only the principal investigator and individuals associated with this study will have access to this

information. Your name and email address are only recorded for purposes of providing compensation to you and to contact you to participate in the next survey six months from now. Electronic data will be stored indefinitely. Your research records may be inspected by the Marquette University Institutional Review Board or its designees, and (as allowable by law) state and federal agencies.

COMPENSATION: You will receive a ten dollar electronic gift certificate to either Target (www.target.com) or Amazon (www.amazon.com) when you finish this survey. If you complete the next survey in six months, you will receive another ten dollar gift certificate to either Target or Amazon. Additionally, if you complete both surveys you will be entered into a raffle to win one of two gift certificates worth \$50 for Amazon.

VOLUNTARY PARTICIPATION: Participating in this study is completely voluntary and you may withdraw from the study and stop participating at any time. If you decide to withdraw from participation after completing this questionnaire, you can email the Principal Investigator and ask that your data be destroyed. Any data that you decide to withdraw from this study will be destroyed electronically.

CONTACT INFORMATION: If you have any questions about this research project, you can contact the Principal Investigator, Mark Driscoll, by email at mark.driscoll@marquette.edu, or at (414) 288-3565. If you have questions or concerns about your rights as a research participant, you can contact Marquette University's Office of Research Compliance by email at orc@marquette.edu, or at (414) 288-7570.

- I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE RESEARCH PROJECT AND AM PREPARED TO PARTICIPATE IN THIS PROJECT.

Participant's Email Address

Date

APPENDIX B

MARQUETTE UNIVERSITY
 ACUERDO DE CONSENTIMIENTO PARA PARTICIPANTES
 Encuesta de Experiencias Culturales Latinas, Eventos Estresantes de la Vida, y Salud
 Mental
 Mark W. Driscoll, M.S., Investigador Principal
 Departamento de Psicología

Ha sido invitado a participar en un estudio de investigación. Antes de que acceda a participar, es importante que lea e entienda la siguiente información. Participación es completamente voluntaria. Si tiene alguna pregunta sobre algo que no entiende antes de decidir a participar o no, puede ponerse en contacto con el Investigador Principal, Mark Driscoll, en mark.driscoll@marquette.edu.

PROPOSITO: El propósito de este estudio de investigación es examinar como las experiencias de Latino/as viviendo en los Estados Unidos influyen la salud mental y la manera que hacen frente con eventos estresantes de la vida. Usted será uno/a de aproximadamente 300 participantes en este estudio de investigación.

PROCEDIMIENTOS: Se le pedirá que complete una encuesta que le preguntara sobre sus experiencias como un/a Latino/a viviendo en los Estados Unidos. Esta encuesta le hará preguntas acerca de su estado de ánimo, comportamientos y preferencias culturales, y posibles eventos estresantes de la vida que le podrán haber ocurrido recientemente. Después de seis meses, recibirá un correo electrónico que le invitara a completar la encuesta de nuevo.

DURACION: Se le pedirá completar esta encuesta dos veces: ahora, y la misma encuesta en aproximadamente seis meses. Es esperado que cada encuesta tomará 30 – 40 minutos de su tiempo.

RIESGOS: No hay riesgos anticipados asociados con su participación en este estudio. Cualquier riesgo presentado por su participación no es más de lo que encontraría en la vida cotidiana. Si se siente incomodo en cualquier momento usted es libre a discontinuar su participación.

BENEFICIOS: Aunque no hay beneficios directos para usted por participar en este estudio, beneficios potenciales incluyen obteniendo un mejor conocimiento de sus experiencias como Latino/a viviendo en los Estados Unidos y un mejor entendimiento de la investigación psicológica. La información que usted provee también podrá ayudar mejorar la salud de los Latinos viviendo en los Estados Unidos.

CONFIDENCIALIDAD: Toda información que revela en este estudio será confidencial. Todos los datos serán asignados un número de código al azar en lugar de usar su nombre

u otra información que podrá identificarlo como individuo. Cuando los resultados de este estudio son publicados, usted no será identificado por nombre. Toda la información que pueda identificarlo personalmente como participante será guardado en un archivador bajo llave. Solo el investigador principal y los individuos asociados con este estudio tendrán acceso a esta información. Su nombre y dirección de correo electrónico solo son documentados para poder proveerle compensación y para contactarle para participar en la siguiente encuesta en seis meses. Datos electrónicos serán guardados indefinidamente. Sus registros de investigación podrán ser inspeccionados por el Institutional Review Board de la Universidad de Marquette o sus designados, y (como permitido por ley) agencias estatales y federales.

COMPENSACIÓN: Recibirá un certificado de regalo electrónico de \$10 para Target (www.target.com) o Amazon (www.amazon.com) cuando termine esta encuesta. Si completa la próxima encuesta en seis meses, recibirá otro certificado de regalo electrónico de \$10 para Target o Amazon. Además, si usted completa las dos encuestas será entrado/a en una rifa para ganar uno de dos certificados de regalo valorizados a\$50 para Amazon.

PARTICIPACIÓN VOLUNTARIA: La participación en este estudio es completamente voluntaria y puede retirarse del estudio y dejar de participar en cualquier momento. Si decide retirarse de participar después de completar este cuestionario, puede enviarle un correo electrónico al Investigador Principal y solicitar que sus datos sean destruidos. Cualquier datos que usted decide retirar del estudio serán destruidos por medios electrónicos.

INFORMACION DE CONTACTO: Si tiene alguna pregunta acerca de este proyecto de investigación, puede contactarse con el Investigador Principal, Mark Driscoll, por correo electrónico en mark.driscoll@marquette.edu, o al (414) 288-3565. Si tiene preguntas o inquietadas acerca de sus derechos como un participante de una investigación, puede contactar la Oficina de Cumplimiento de Investigación de la Universidad de Marquette por correo electrónico en orc@marquette.edu, o al (414) 288-7570.

- HE TENIDO LA OPURTUNIDAD DE LEER ESTE FORMULARIO DE CONSENTAMIENTO, HACER PREGUNTAS SOBRE EL ESTUDIO, Y ESTOY DISPUESTO A PARTICIPAR EN ESTE PROYECTO.

Dirección de Correo Electrónico del Participante

Fecha

APPENDIX C

Demographics Information

Date of birth: _____ / _____ / _____
MM DD YYYY

Gender: Male Female

Marital status:

Single Married Separated Divorced Widowed

Living with significant other Other (specify) _____

Number of children in household: _____

Number of adults in household (including self): _____

Cultural heritage (please select one):

Mexican Mexican-American Chicano Puerto Rican Cuban

Central/South American (specify) _____

Other (specify) _____

Were you born in the United States?

Yes _____

No _____

Country of birth (please specify): _____

Demographic Information

How long have you lived in the U.S. (in years)? _____

Who was the first member of your family to immigrate to the United States (specify relationship)? _____

Annual Family / Household Income:

- _____ Under \$10,000
 _____ More than \$10,000, but less than \$20,000
 _____ More than \$20,000, but less than \$35,000
 _____ More than \$35,000, but less than \$50,000
 _____ More than \$50,000, but less than \$75,000
 _____ Over \$75,000

Personal Annual Income:

- _____ Under \$10,000
 _____ More than \$10,000, but less than \$20,000
 _____ More than \$20,000, but less than \$35,000
 _____ More than \$35,000, but less than \$50,000
 _____ More than \$50,000, but less than \$75,000
 _____ Over \$75,000

How many total years have you attended school? _____

Are you currently a student? Yes No

If no, what is your occupation? _____

ARSMA-II

For each item, circle a number between 1 – 5 that best applies.

	1	2	3	4	5
	Not at all	Very little or not often	Moderately	Much or very often	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/Americans	1	2	3	4	5
5. I associate with Latinos	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 books in Spanish	1	2	3	4	5
13. I enjoy reading books in English	1	2	3	4	5
14. I write letters in Spanish	1	2	3	4	5
15. I write 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 Mexico 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	1	2	3	4	5
21. My mother identifies or identified herself as Latina	1	2	3	4	5
22. My friends, while I was growing up, were of Latino 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 Latino food	1	2	3	4	5
25. My friends are now of Anglo origin	1	2	3	4	5
26. My friends are now of Latino origin	1	2	3	4	5
27. I like to identify myself as Anglo American	1	2	3	4	5
28. I like to identify myself as Latino American	1	2	3	4	5
29. I like to identify myself as Latino	1	2	3	4	5
30. I like to identify myself as American	1	2	3	4	5

MASI

Below is a list of situations that as a Latino/Hispanic you may have experienced. Read each item carefully and determine if it has occurred in the PAST 3 MONTHS. If so, please rate how stressful that event was based on the provided scale. If not, please click on the "0" in the options provided.

	0	1	2	3	4	5
	Does not apply	Not at all stressful	Slightly stressful	Somewhat stressful	Moderately stressful	Extremely stressful
1. I have a hard time understanding others when they speak English.	0	1	2	3	4	5
2. I have a hard time understanding others when they speak Spanish.	0	1	2	3	4	5
3. I feel pressure to learn Spanish.	0	1	2	3	4	5
4. It bothers me that I speak English with an accent.	0	1	2	3	4	5
5. It bothers me that I speak Spanish with an accent.	0	1	2	3	4	5
6. Since I don't speak English well, people have treated me rudely or unfairly.	0	1	2	3	4	5
7. I have been discriminated against because I have difficulty speaking English.	0	1	2	3	4	5
8. I don't speak English or don't speak it well.	0	1	2	3	4	5
9. I don't speak Spanish or don't speak it well.	0	1	2	3	4	5
10. I feel pressure to learn English.	0	1	2	3	4	5
11. I feel uncomfortable being around people who only speak English.	0	1	2	3	4	5
12. I feel uncomfortable being around people who only speak Spanish.	0	1	2	3	4	5
13. It bothers me when people assume that I speak English.	0	1	2	3	4	5
14. It bothers me when people assume that I speak Spanish.	0	1	2	3	4	5
15. Since I don't speak Spanish well, people have treated me rudely or unfairly.	0	1	2	3	4	5
16. I have been discriminated against because I have difficulty speaking Spanish.	0	1	2	3	4	5
17. It bothers me when people pressure me to assimilate to the American ways of doing things.	0	1	2	3	4	5
18. It bothers me when people don't respect my Latino values (e.g., family).	0	1	2	3	4	5
19. It bothers me when people don't respect my American values (e.g., independence).	0	1	2	3	4	5
20. I am self-conscious about my Latino background.	0	1	2	3	4	5
21. I am self-conscious about my American background.	0	1	2	3	4	5

22. Because of my cultural background, I have a hard time fitting in with Americans. 0 1 2 3 4 5
23. Because of my cultural background, I have a hard time fitting in with Latinos. 0 1 2 3 4 5
24. I don't feel accepted by Latinos. 0 1 2 3 4 5
25. I don't feel accepted by Americans. 0 1 2 3 4 5
26. I have had conflicts with others because I prefer American customs (e.g., celebrating Halloween, Thanksgiving) over Latino ones (e.g., celebrating Dia de los Muertos, Quinceañeras). 0 1 2 3 4 5
27. I have had conflicts with others because I prefer Latino customs (e.g., celebrating Dia de los Muertos, Quinceañeras) over American ones (e.g., celebrating Halloween, Thanksgiving). 0 1 2 3 4 5
28. People look down upon me if I practice Latino customs. 0 1 2 3 4 5
29. People look down upon me if I practice American customs. 0 1 2 3 4 5
30. I feel uncomfortable when I have to choose between Latino and American ways of doing things. 0 1 2 3 4 5
31. I feel uncomfortable because my family does not know American ways of doing things. 0 1 2 3 4 5
32. I feel uncomfortable because my family does not know Latino ways of doing things. 0 1 2 3 4 5
33. I feel uncomfortable when others expect me to know American ways of doing things. 0 1 2 3 4 5
34. I feel uncomfortable when others expect me to know Latino ways of doing things. 0 1 2 3 4 5
35. At times, I wish that I were more American. 0 1 2 3 4 5
36. At times, I wish that I were more Latino. 0 1 2 3 4 5

IC-19-I

Please read the following list and rate the importance of each item for Latinos to succeed in BOTH the mainstream U.S. society and the Latino community living in the U.S. Please indicate the importance of each item, as it is generally believed in the Latino community, based on the following scale:

	0	1	2	3	4
	Not at all important	Slightly important	Somewhat important	Moderately important	Very important
1. Being able to communicate well in English	0	1	2	3	4
2. Being able to express yourself in English and Spanish	0	1	2	3	4
3. Being able to relate to all sorts of people	0	1	2	3	4
4. Getting along with family	0	1	2	3	4
5. Creating networks or connections with others	0	1	2	3	4
6. Meeting new people and seeing how those people can help you	0	1	2	3	4
7. Connecting with people so you can help them and they can help you	0	1	2	3	4
8. Networking with people who have been successful	0	1	2	3	4
9. Having a strong desire to be successful	0	1	2	3	4
10. Knowing, deep down, that you're going to make it	0	1	2	3	4
11. Striving for more, always looking to be more successful	0	1	2	3	4
12. Not giving up or quitting even when things are not going the way you are expecting	0	1	2	3	4
13. Having strong will power or determination	0	1	2	3	4
14. To continue to do the that extra work, even though circumstances are against you	0	1	2	3	4
15. Embracing your culture for motivation	0	1	2	3	4
16. Identification with one's past or roots	0	1	2	3	4
17. Maintaining the cultural practices, holidays, and/or language of your country	0	1	2	3	4
18. Keeping in touch with everyone in the family	0	1	2	3	4
19. Having strong family values	0	1	2	3	4

SRRS

Please indicate which of the following have occurred to you **in the past six months.**

1. Death of spouse	Yes	No
2. Divorce	Yes	No
3. Marital separation	Yes	No
4. Jail term	Yes	No
5. Death of close family	Yes	No
6. Personal injury or illness	Yes	No
7. Marriage	Yes	No
8. Fired at work	Yes	No
9. Marital reconciliation	Yes	No
10. Retirement	Yes	No
11. Change in health of family	Yes	No
12. Pregnancy	Yes	No
13. Sex difficulties	Yes	No
14. Gain of new family member	Yes	No
15. Business readjustment	Yes	No
16. Change in financial state	Yes	No
17. Death of close friend	Yes	No
18. Change to a different line of work	Yes	No
19. Change in number of argument with spouse	Yes	No
20. Mortgage over \$10,000	Yes	No
21. Foreclosure of mortgage or loan	Yes	No
22. Change in responsibilities at work	Yes	No
23. Son or daughter leaving home	Yes	No
24. Trouble with in-laws	Yes	No
25. Outstanding personal achievement	Yes	No
26. Spouse begins or stops work	Yes	No
27. Begin or end school	Yes	No
28. Change in living conditions	Yes	No
29. Revision of personal habits	Yes	No
30. Trouble with boss	Yes	No
31. Change in work hours or conditions	Yes	No
32. Change in residence	Yes	No
33. Change in schools	Yes	No
34. Change in recreation	Yes	No
35. Change in church activities	Yes	No
36. Change in social activities	Yes	No
37. Mortgage or loan less than \$10,000	Yes	No
38. Change in sleeping habits	Yes	No
39. Change in number of family get-togethers	Yes	No
40. Change in eating habits	Yes	No
41. Vacation	Yes	No
42. Christmas	Yes	No
43. Minor violations of the law	Yes	No

CES-D

Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way DURING THE PAST WEEK.

	1	2	3	4
	Rarely or none of the time (less than 1day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me	1	2	3	4
2. I did not feel like eating: my appetite was poor	1	2	3	4
3. I felt that I could not shake off the blues even with help from my family or friends	1	2	3	4
4. I felt that I was just as good as other people	1	2	3	4
5. I had trouble keeping my mind on what I was doing	1	2	3	4
6. I felt depressed	1	2	3	4
7. I felt that everything I did was an effort	1	2	3	4
8. I felt hopeful of the future	1	2	3	4
9. I thought my life had been a failure	1	2	3	4
10. I felt fearful	1	2	3	4
11. My sleep was restless	1	2	3	4
12. I was happy	1	2	3	4
13. I talked less than usual	1	2	3	4
14. I felt lonely	1	2	3	4
15. People were unfriendly	1	2	3	4
16. I enjoyed life	1	2	3	4
17. I had crying spells	1	2	3	4
18. I felt sad	1	2	3	4
19. I felt that people dislike me	1	2	3	4
20. I could not get going	1	2	3	4

APPENDIX D

Información Demográfica

Fecha de nacimiento: ____ / ____ / ____
MM DD AAAA

Género: Masculino Femenino

Estado civil:

Soltero/a Casado/a Separado/a Divorciado/a Viudo/a

Viviendo con persona significativa Otro (especifique) _____

Numero de niños en la casa: _____

Numero de adultos en el hogar (incluido usted): _____

Herencia cultural (seleccione una):

Mexicano Chicano Mexicano-Americano Puerto Riqueño Cubano

Centroamericano o Suramérica (especifique por favor) _____

Otra cultura (especifique por favor) _____

¿Nació en los Estados Unidos?

Sí _____

No _____

País de nacimiento (especifique por favor): _____

¿Cuántos años ha vivido en los Estados Unidos? _____

Información Demográfica

¿Quién era el primer miembro de su familia que inmigro o se mudo a los EEUU (especifique la relación)?

Sueldo anual de la familia:

- _____ Menos de \$10,000
 _____ Más de \$10,000, pero menos de \$20,000
 _____ Más de \$20,000, pero menos de \$35,000
 _____ Más de \$35,000, pero menos de \$50,000
 _____ Más de \$50,000, pero menos de \$75,000
 _____ Más de \$75,000

Sueldo anual personal:

- _____ Menos de \$10,000
 _____ Más de \$10,000, pero menos de \$20,000
 _____ Más de \$20,000, pero menos de \$35,000
 _____ Más de \$35,000, pero menos de \$50,000
 _____ Más de \$50,000, pero menos de \$75,000
 _____ Más de \$75,000

¿Es usted un estudiante? Sí No

Si no, ¿cuál es su ocupación o trabajo? _____

¿Cuántos años de educación, en total, ha completado usted? _____

ARSMA-II

Para cada tema, por favor, seleccione un número entre 1 - 5 que mejor se aplica.

	1	2	3	4	5
	Nada	Un poquito o a veces	Moderado	Mucho o muy frecuente	Muchísimo o casi todo el tiempo
1. Yo hablo español.	1	2	3	4	5
2. Yo hablo Inglés.	1	2	3	4	5
3. Me gusta hablar en español.	1	2	3	4	5
4. Me asocio con americanos.	1	2	3	4	5
5. Yo me asocio con mexicanos.	1	2	3	4	5
6. Me gusta la música mexicana (música en idioma español).	1	2	3	4	5
7. Me gusta la música de idioma Inglés.	1	2	3	4	5
8. Me gusta ver programas en televisión que sean en español.	1	2	3	4	5
9. Me gusta ver programas en televisión que sean en Inglés.	1	2	3	4	5
10. Me gusta ver películas en Inglés.	1	2	3	4	5
11. Me gusta ver películas en español.	1	2	3	4	5
12. Me gusta leer libros en español.	1	2	3	4	5
13. Me gusta leer libro en Inglés.	1	2	3	4	5
14. Escribo cartas en español.	1	2	3	4	5
15. Escribo cartas en Inglés.	1	2	3	4	5
16. Mis pensamientos ocurren en Inglés.	1	2	3	4	5
17. Mis pensamientos ocurren en español.	1	2	3	4	5
18. Mi contacto con México ha sido....	1	2	3	4	5
19. Mi contacto con los Estados Unidos Americanos ha sido...	1	2	3	4	5
20. Mi padre se identifica (o se identificaba) como Mexicano.	1	2	3	4	5
21. Mi madre se identifica (o se identificaba) como Mexicana.	1	2	3	4	5
22. Mis amigos(as) de mí niñez eran de origen Mexicano.	1	2	3	4	5
23. Mis amigos(as) de mí niñez eran de origen americano.	1	2	3	4	5
24. Mi familia cocina comidas mexicanas.	1	2	3	4	5
25. Mis amigos recientes son americanos.	1	2	3	4	5
26. Mis amigos recientes son mexicanos.	1	2	3	4	5
27. Me gusta identificarme como Anglo Americano.	1	2	3	4	5
28. Me gusta identificarme como México-Americano.	1	2	3	4	5
29. Me gusta identificarme como mexicano.	1	2	3	4	5
30. Me gusta identificarme como un(a) americano.	1	2	3	4	5

MASI

Abajo hay una lista de situaciones que como latino quizás usted haya experimentado. Lea cada frase cuidadosamente y primero decide si ha experimentado la situación EN LOS ULTIMOS 3 MESES. Si ha experimentado la situación en los últimos 3 meses ponga el numero que mejor representa CUÁNTO ESTRÉS ha tenido en esa situación. Si no ha experimentado la situación en los últimos 3 meses, ponga el numero 0 y sigue a la próxima frase.

	0	1	2	3	4	5
	No se aplica	Nada de estrés	Un poco de estrés	Algo de estrés	Mucho de estrés	Muchísimo estrés
1. Tengo dificultad entendiendo a la gente cuando hablan en inglés.					0	1 2 3 4 5
2. Tengo dificultad entendiendo a la gente cuando hablan en español.					0	1 2 3 4 5
3. Me siento presionado/a al aprender español.					0	1 2 3 4 5
4. Me molesta que hablo ingles con un acento.					0	1 2 3 4 5
5. Me molesta que hablo español con un acento.					0	1 2 3 4 5
6. Como no hablo bien el inglés, la gente me ha tratado rudamente o injustamente.					0	1 2 3 4 5
7. He sido discriminado porque tengo dificultad hablando inglés.					0	1 2 3 4 5
8. No hablo inglés o no lo hablo bien.					0	1 2 3 4 5
9. No hablo español o no lo hablo bien.					0	1 2 3 4 5
10. Me siento presionado/a al aprender ingles.					0	1 2 3 4 5
11. Me siento incómodo/a alrededor de gente que sólo habla inglés.					0	1 2 3 4 5
12. Me siento incómodo/a alrededor de gente que sólo habla español.					0	1 2 3 4 5
13. Me molesta cuando la gente asume que hablo inglés.					0	1 2 3 4 5
14. Me molesta cuando la gente asume que hablo español.					0	1 2 3 4 5
15. Como no hablo bien el español, la gente me ha tratado rudamente o injustamente.					0	1 2 3 4 5
16. He sido discriminado porque tengo dificultad hablando español.					0	1 2 3 4 5
17. Me molesta cuando la gente me presiona a asimilar al modo americano de hacer las cosas.					0	1 2 3 4 5
18. Me molesta cuando la gente no respeta mis valores latinos (por ejemplo, familia).					0	1 2 3 4 5

19. Me molesta cuando la gente no respeta mis valores americanos (por ejemplo, independencia). 0 1 2 3 4 5
20. Estoy consciente de mi mismo/a por mí fondo latino. 0 1 2 3 4 5
21. Estoy consciente de mi mismo/a por mí fondo americano. 0 1 2 3 4 5
22. Por mi origen cultural, tengo dificultad relacionando con americanos. 0 1 2 3 4 5
23. Por mi origen cultural, tengo dificultad relacionando con latinos. 0 1 2 3 4 5
24. No me siento aceptado/a por latinos. 0 1 2 3 4 5
25. No me siento aceptado/a por americanos. 0 1 2 3 4 5
26. He tenido conflictos con otros porque prefiero las costumbres americanos (por ejemplo, celebrando Halloween, Thanksgiving), sobre las costumbres Mexicanas/latinas (por ejemplo, celebrando Dia de los Muertos, Quinceañeras). 0 1 2 3 4 5
27. He tenido conflictos con otros porque prefiero las costumbres latinas,(por ejemplo, celebrando Dia de los Muertos, Quinceañeras), sobre las costumbres americanos(por ejemplo, celebrando Halloween, Thanksgiving). 0 1 2 3 4 5
28. La gente me mira mal si practico costumbres latinas. 0 1 2 3 4 5
29. La gente me mira mal si practico costumbres americanos. 0 1 2 3 4 5
30. Me siento incómodo/a cuando tengo que escoger entre los modos Mexicanos/latinos y los modos americanos de hacer las cosas. 0 1 2 3 4 5
31. Me siento incómodo/a porque mi familia no sabe los modos americanos de hacer las cosas. 0 1 2 3 4 5
32. Me siento incómodo/a porque mi familia no sabe los modos latinos de hacer cosas. 0 1 2 3 4 5
33. Me siento incómodo/a cuando otros esperan que yo sepa el modo americano de hacer las cosas. 0 1 2 3 4 5
34. Me siento incómodo/a cuando otros esperan que yo sepa el modo latino de hacer las cosas. 0 1 2 3 4 5
35. A veces, quisiera ser mas americano/a. 0 1 2 3 4 5
36. A veces, quisiera ser mas latino/a. 0 1 2 3 4 5

IC -26-I

Por favor, lea lo siguiente e indique como cada aspecto afecta al éxito de los latinos para vivir en la sociedad estadounidense y en la comunidad latina dentro de los EEUU. Por favor, ponga el número que indica la importancia de cada aspecto como usted cree que la gente Latina en general piensa, use la escala siguiente.

	0	1	2	3	4
	No es importante	Un poco importante	Más o menos importante	Bastante importante	Muy importante
1. La habilidad de comunicarse bien en inglés	0	1	2	3	4
2. La habilidad de expresarse en español e inglés	0	1	2	3	4
3. Poder relacionarse y interactuar con todo tipo de gente	0	1	2	3	4
4. Llevarse bien con su familia	0	1	2	3	4
5. Crear redes o conexiones con otros	0	1	2	3	4
6. Conocer gente nueva para saber cómo ellos le pueden ayudar	0	1	2	3	4
7. Tener relaciones o conexiones con otros para que se puedan ayudar uno al otro	0	1	2	3	4
8. Interconectar con gente que ha tenido éxito	0	1	2	3	4
9. Tener un deseo fuerte de tener éxito	0	1	2	3	4
10. Saber profundamente que vas a sobresalir o lograr éxito	0	1	2	3	4
11. Luchar por más, siempre queriendo tener más éxito	0	1	2	3	4
12. No darse por vencido cuando las cosas no van como lo esperaba	0	1	2	3	4
13. Tener fuerza de voluntad o determinación	0	1	2	3	4
14. Hacer el trabajo extra, aunque las circunstancias están en contra de usted	0	1	2	3	4
15. Usar y abrazar su cultura para motivación	0	1	2	3	4
16. Identificarse con su pasado o sus raíces	0	1	2	3	4
17. Mantener las tradiciones de la cultura, los festivales, y/o el idioma de su país	0	1	2	3	4
18. Mantener contacto con los miembros de su familia	0	1	2	3	4
19. Tener valores fuertes	0	1	2	3	4

SRRS

Por favor indique a cual de los siguientes le han ocurrido **en los últimos seis meses.**

1. Fallecimiento de un cónyuge	Sí	No
2. Divorcio	Sí	No
3. Separación matrimonial	Sí	No
4. Encarcelación	Sí	No
5. Fallecimiento de un familiar cercano	Sí	No
6. Herida personal o enfermedad	Sí	No
7. Matrimonio	Sí	No
8. Despedido del trabajo	Sí	No
9. Reconciliación matrimonial	Sí	No
10. Jubilación	Sí	No
11. Cambio de salud de un familiar	Sí	No
12. Embarazo	Sí	No
13. Dificultades sexuales	Sí	No
14. Adquirir nuevo miembro en la familia	Sí	No
15. Reajuste de negocio	Sí	No
16. Cambio de estado financiero	Sí	No
17. Fallecimiento de una amistad cercana	Sí	No
18. Cambio de tipo de trabajo	Sí	No
19. Cambio de numero de argumentos con cónyuge	Sí	No
20. Hipoteca mas de \$50,000	Sí	No
21. Ejecución hipotecaria o de préstamo	Sí	No
22. Cambio de responsabilidades en el trabajo	Sí	No
23. Hijo o hija dejando el hogar	Sí	No
24. Problemas con los suegros	Sí	No
25. Logros personales destacados	Sí	No
26. Cónyuge empieza o parar de trabajar	Sí	No
27. Empezar o comenzar la escuela	Sí	No
28. Cambio de condiciones de vivienda	Sí	No
29. Revisión de hábitos personales	Sí	No
30. Problemas con el patrón o patrona	Sí	No
31. Cambio en horas de trabajo o condiciones de trabajo	Sí	No
32. Cambio de residencia	Sí	No
33. Cambio de escuela	Sí	No
34. Cambio en recreación	Sí	No
35. Cambio de actividades de la iglesia	Sí	No
36. Cambio de actividades sociales	Sí	No
37. Hipoteca o préstamo menos de \$50,000	Sí	No
38. Cambio de hábitos para dormir	Sí	No
39. Cambio de numero de reuniones familiares	Sí	No
40. Cambio de hábitos de comer	Sí	No
41. Vacaciones	Sí	No
42. La navidad	Sí	No
43. Violaciones menores de la ley	Sí	No

CESD

Lo siguiente es una lista de maneras que usted pudo haberse sentido o haberse comportado. Por favor indique cómo usted se ha sentido de esta manera indicando cuantas veces cada declaración ha ocurrido DURANTE LA ÚLTIMA SEMANA.

	1	2	3	4
	Rara vez o nunca (menos de un día)	Algunas o pocas veces (1-2 días)	Ocasionalmente o con moderación (3-4 días)	Siempre (5-7 días)
1. Me molestaron cosas que normalmente no me molestan	1	2	3	4
2. No tenía ganas de comer; tenía poco apetito	1	2	3	4
3. Sentí que no podía deshacerme de mis penas aún con la ayuda de mi familia o mis amistades	1	2	3	4
4. Sentí que yo era tan bueno/a como la demás gente	1	2	3	4
5. Tuve dificultad en concentrarme en lo que hacía	1	2	3	4
6. Me sentí deprimido/a	1	2	3	4
7. Sentí que todo lo que hacía tomaba esfuerzo	1	2	3	4
8. Sentí esperanza en cuanto al futuro	1	2	3	4
9. Pensé que mi vida había sido un fracaso	1	2	3	4
10. Sentí miedo	1	2	3	4
11. Dormí mal	1	2	3	4
12. Estuve feliz	1	2	3	4
13. Hablé menos de lo normal	1	2	3	4
14. Me sentí solo/a	1	2	3	4
15. La gente no fue amistosa	1	2	3	4
16. Yo gocé la vida	1	2	3	4
17. Tuve momentos de llanto	1	2	3	4
18. Me sentí triste	1	2	3	4
19. Sentí que yo no le gustaba a la gente	1	2	3	4
20. No pude motivarme	1	2	3	4