Immigration Stress, Exposure to Traumatic Life Experiences, and Problem Drinking Among First-Generation Immigrant Latino Couples

Monica Huerta

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Master of Science
In
Human Development

Mariana K. Falconier, Chair
Edward L. Hendrickson
Angela J. Huebner

December 17, 2013
Falls Church, VA

Keywords: immigration, stress, Latinos, trauma, drinking

Immigration Stress, Exposure to Traumatic Life Experiences, and Problem Drinking Among

First-Generation Immigrant Latino Couples

Monica Huerta

Abstract

This study explored the relationship of each partner's immigration stress and exposure to traumatic life experiences, with both his or her own problem drinking and the partner's problem drinking. The study was guided by Bodenmann's systemic-transactional stress model and used secondary data collected in 2009 from 104 Latino immigrant couples living in the Washington DC area. Results from the path model analysis indicated that even though men's overall immigration stress was not significantly related to their own problem drinking, emotional dimensions of immigration stress were in a positive direction. Men's overall immigration stress was negatively related to their partners' problem drinking. The women's overall immigration stress was significantly and positively related to their own problem drinking, particularly for acculturation related aspects and stress from missing family, but it was not significantly related to their partner's problem drinking. Additionally, men's exposure to traumatic life experiences was significantly, positively associated with problem drinking but it was not significantly associated with their own overall immigration stress. For women, results were different as exposure to traumatic life experiences was not associated with their own problem drinking but it was significantly and positively related to their overall immigration stress in the hypothesized direction. Limitations, research, and clinical implications of the findings are discussed.

TABLE OF CONTENTS

Figures and Tables List

CHAPTER ONE: INTRODUCTION

Problem and Setting

Alcohol is known to cause serious health risks for users; using alcohol can lead to long-term health effects, such as liver disease, heart disease, neurological deficits and death due to overdose (National Institute of Health (NIH), 2013). Even though alcohol can pose serious long-term risks for any user, Latinos tend to be among the population more susceptible to a higher risk for alcohol dependence and abuse (Grant, Dawson, Stinson, Chou, Dufour, & Pickering, 2004). According to the NIH (2013), Latinos who drink tend to consume alcohol at higher volumes than non-Latinos. In addition, Latinos who develop an alcohol dependency report more recurring episodes and/or persistent problems with alcohol, at a rate of 33%, compared to 22.8% for Whites (NIH, 2013).

Latino immigrants are the largest minority group in the United States (U.S. Census Bureau, 2011). In 2010, Latinos accounted for 16.3% of the national population in the United States (U.S. Census Bureau, 2011). According to the U.S. Census Bureau (2011), the Latino population grew by 43% since the last census, making it the fastest growing minority population in the country. The population is predicted to continue growing rapidly during the coming years; therefore, it is important for researchers to continue expanding the knowledge about this population in regards to problem drinking.

Drinking patterns among Latinos are an alarming concern pervasive across different age groups. Studies showed that young college-age Latinos participate in heavier drinking in social situations, particularly true for Mexican-American Latinos (Zamboanga, Raffaelli, & Horton, 2006). Additionally, Latinos report a high rate of binge drinking among the 12–17 age group, and among the 35 or older age group (Ma & Shive, 2000). Research also shows that drinking

patterns among Latinos differ from other ethnic groups and races (NIH, 2013). Latinos between the ages of 18-25 reported heavier alcohol use compared to Blacks of the same age group (Ma & Shive, 2000). When compared to other ethnicities, Latinos in the age group 35 and older, were as likely to report heavy alcohol use as Blacks (5.2%), both reported higher rates of alcohol use than Whites (3.4%) (Ma & Shive, 2000).

Within the Latino community, there is a notable distinction for problem drinking between genders. Latino male adolescents report more drinking and at higher rates than their Latina female counterparts (Corbin, Vaughan, & Fromme, 2008; Wahl & Eitle, 2010). Research consistently demonstrates that Latino males consume alcohol more frequently, and at higher rates than that of Latina females (Grant et al., 2004; Lara, Gamboa, Kahramanian, Morales, Hayes & Bautista, 2005; Slone, Norris, Gutiérrez Rodriguez, Gutiérrez Rodriguez, Murphy, & Perill, 2006; Zemore, 2007). Grant et al., (2004) explored the rates of alcohol dependence and alcohol abuse between males and females across ethnicities; Latinos were among the groups who report higher rates of alcohol abuse and dependence than their female counterparts.

Heavy problem drinking comes with several risks and consequences for Latinos, particularly for Latino males. Across different studies, Latinos report having higher rates of alcohol-related problems, such as health issues (NIH, 2013). Additionally, Latino males report high rates of legal issues, such as incarceration and arrests for driving under the influence (Caetano & Clark, 2000; Galvan & Caetano, 2003; Zemore, Mulia, Ye, Borges, & Greenfield, 2008). Interestingly, Latina women tend not only to drink less than their male counterparts, but they also report less legal trouble relating to problem drinking than Latino males and non-Latina women (Arciniega, Arroyo, Miller, & Tonigan, 1996). This correlation could be due to Latina women drinking less than Latino men.

2

Additionally, individuals with alcohol use disorders tend to also have one or more co-occurring mental disorders (Petrakis, Gonzalez, Rosenheck, & Krystal, 2002; Kessler, Chiu, Demler, & Walters, 2005). In general, alcohol dependence and other co-occurring psychiatric disorder tend to be correlated (Kessler et al., 2005). For example, major depressive disorder, generalized anxiety disorder, social phobias, and PTSD were all correlated with alcohol abuse (Kessler et al., 2005). When researching Latino specifically, lifetime psychiatric disorder were about 28.1% for men and 30.2% for women (Alegria, Mulvaney, Torres, Polo, Cao, & Canino, 2007). Some subgroups of Latinos show higher rates for substance use disorder including alcohol and overall psychiatric disorders, for example, Puerto Ricans had higher rates of co-occurring psychiatric disorders than Cubans (Alegria et al., 2007). Immigrant Latino groups reported lower lifetime rates of substance use disorders than US- born Latinos, this pattern was not seen for depressive or anxiety disorder (Alegria et al., 2007). Overall, cross-generation comparisons demonstrated that third-generation Latinos had higher of psychiatric disorder than first-generation and second-generation Latinos. (Alegria et al., 2007).

One of the most studied consequences of problem drinking in the Latino population is the increase in inter-partner violence (Caetano, Cunradi, Schafer, & Clark 2000a, Caetano, Schafer, & Cunradi, 2001; Klevens, 2007; Kim-Godwin & Fox, 2009). IPV in general is a major public health issue in the U.S. (Caetano et al., 2001). One study demonstrated that during IPV events, regardless of ethnicity, "30-40 percent of men and 27 to 34 percent of women" reported perpetrating violence against their partners while drinking (Caetano et al., 2001). Drinking and alcohol-related problems have been associated with IPV among different ethnicities including Latinos (Caetano et al., 2001). For example, Latino couples reported IPV rates of 17% for MFPV and 21 % for FMPV, lower than White couples who reported 11.5% for MFPV and 15%

for FMPV (Caetano et al., 2001). Black couples, reported 23% for MFPV and 30% for FMPV, higher than Latino and White couples. When researching Latino couples specifically, studies report that inter-partner violence is a problem if one or both partners used alcohol (Caetano, Schafer, Clark, Cunradi, & Rasberry, 2000b; Kim-Godwin & Fox, 2009). Furthermore, research shows that even in instances where the victims of inter-partner violence consumed alcohol, the drinking patterns of inter-partner violence victims were a risk factor for elevation to both female-to-male and male-to-female partner violence among Latino couples (Caetano, Ramisetty-Mikler, Vaeth, & Harris, 2007). In sum, problem drinking has been associated with negative consequences at both the individual and the relational levels.

When examining the relationship of problem drinking and stress, it is commonly accepted that people drink alcohol to reduce tension or stress (Cooper, Russell, & George, 1988; Greeley, & Oei, 1999). A number of studies have explored the relationship between stress and problem drinking and most studies agree people resort to alcohol as a way of cope with stress (Ayer, Harder, Rose, & Hezler, 2010). Research indicates that men, who anticipate positive outcome from alcohol, such as anticipating tension-reduction or social and physical pleasure, drank more on high stress days than on low stress days (Armeli, Carney, Tennen, Affleck & O'Neil, 2000). However, these results were not seen in women (Armeli et al., 2000). Active coping styles have been associated to buffer the relationship between certain stressors and problem drinking for men (Hussong, 2003).

Others studies that have analyzed stress and drinking found that individuals reporting more stressors also reported higher intake of alcohol and drinking more frequently, than those individuals reporting no life stressors (Dawson, Grant, & Ruan, 2005). When comparing individuals who abstained from drinking, moderate drinkers, and heavy drinkers, perceived stress

increased across groups, with heavy drinkers reporting the highest amount of perceived stress from these three groups (Cole, Trucker, & Friedman, 1990). Additionally, individuals lacking coping skills are more likely to drink (Cooper et al., 1988). In a discussion, Cooper and colleagues (1988) used Lazarus and Folkman (1984) stress model to understand the results from their findings regarding stress and drinking to cope; stating that perhaps individuals using avoidant styles of coping, drink more under highly stressful situations. Less is known about how partners' deal with stress and how this stress may lead to problem drinking.

A framework that can help us understand how stress and problem drinking relate, within the couples context, is Bodenmann's Systemic Transactional Model (STM, 1997). The theory explains that one partner's stress and coping cannot be understood without considering the other partner's stress or coping. Stress from the environment can spill over into the relationship and affect the other partner (Bodenmann, 1997). "Thus, stress is no longer a personal affair of one partner but of both of them" (Bodenmann, 1995; p. 35). Stressful events can affect both partners, either in direct or indirect ways and cause the partners' coping efforts (Bodenmann, 2005). This theory considers the couples' coping behaviors as a response to stress. In this study, coping responses, such as problem drinking, will be examined for both partners' immigration stress. Additionally, analyzing the different dimension of immigration stress at the couples' level may help us further understand some of the contradictory findings in relation to acculturative stress. More will be explained in the following sections.

Immigration Stress. Among the many factors that have been linked to drinking, such as past trauma (Stewart, 1996), depression (Slone et al., 2006), and stress (Ayer et al., 2010), acculturation stress has been problematic particularly to Latinos in the U.S. Acculturation refers to the process of adapting to a new set of values from the host country, which often competes

with the set of values from the home country (Berry, 1997). Acculturation stress specifically refers to the stress associated with this process (Berry, 1990; Berry, 2006). The literature on problem drinking and acculturation stress among Latinos includes mixed perspectives and findings. A literature review by Zemore (2007) shows that when it comes to acculturation, Latina females who become more acculturated, thus adopting more acceptable belief systems about drinking, have higher rates of problem drinking than less acculturated women. Therefore, it is assumed that the increased drinking is due to adapting to more acceptable attitudes towards drinking, and not due to increased stress from acculturation (Caetano et al., 2007, Caetano & Medina-Mora, 1988). Conversely, research show inconclusive findings regarding Latino males, some studies show a null relationship (Caetano & Medina-Mora, 1988, Zemore, 2007), others studies indicate positive relationships (Hines & Caetano, 1998, Zemore 2007), and some a negative relationship between drinking and acculturation (Neff, Hoppe, & Perea, 1987; Zemore, 2007). This set of mixed findings indicates that the relationship between immigration-related stress and drinking still needs to be further explored (Caetano et al., 2007).

As previously mentioned, less is known about immigration stress beyond acculturative stress because most studies have focused on acculturation/acculturative stress when examining drinking patterns among Latinos living in the U.S. Immigrants also deal with other stressful situations that are not included in the concept of acculturative stress such as missing one's family, not feeling at home, or experiencing a sense of loss (Aroian, Norris, Tran, & Schappler-Morris, 1998). This distinction is the reason why Aroian and colleagues (1998) began using the concept of immigration stress rather than acculturative stress: to understand the various stressors associated with the experience of being an immigrant. Immigration stress, (Aroian, et al., 1998; Falconier, Nussbeck, & Bodenamnn, 2013) which also includes the concept of acculturative

stress, refers to the stress derived from experiencing a sense of novelty, not feeling at home, loss, discrimination, missing one's family, occupational challenges, language barriers, and legal stress. Novelty refers to the stress that can derive from the newness or unfamiliarity of living in a new country (Aroian et al., 1998). Not feeling at home refers to the stress that derives from feeling alienated from the host country. Sense of loss refers to missing people, places and things back in ones country of origin (Aroian et al., 1998). Another stress of immigration is the sense of discrimination, or the feeling of being treated differently and the sense of not belonging (Aroian et al., 1998; Aroian, Kaskiri, & Templin, 2008). Occupation stress comes from the difficulties of not being able to finding work, status demotion, and the unavailability of job opportunities (Aroian et al., 1998). Immigration stress also includes stress relating to language barriers, such as the difficulties of managing the host language (Aroian et al., 1998). In applying the concept of immigration stress to study Latino immigrant couples, Falconier and colleagues (2013) added missing one's family as another situation that is particularly stressful for Latinos given their strong family orientation. Additionally, legal stress was created to assess stress associated with situations or fears of deportation, which are quite common among Central American immigrants.

Even though much of the available literature has examined the link between drinking and acculturative stress, findings from two different qualitative studies suggest that immigration stress might have a positive association with drinking among Latinos. In one of these studies (Lee, Lopez, Colby, Tejada, Garcia-Coll, & Smith; 2010), participants reported nostalgia and isolation to be among the reasons for drinking. In another study, immigrant Latino males included being unable to visit family, feelings of discrimination, and harsh work environments as the primary motivators for why they turned to alcohol (Rhodes et al., 2009). Despite these

qualitative findings, no quantitative study has examined the association between drinking and immigration stress, as well as its different dimensions among Latino immigrants. The present study will examine the association between problem drinking and immigration stress among first-generation immigrant Latinos.

      Exposure to Traumatic Life Experiences. When studying the immigrant Latino population, one should also consider the influence that exposure to traumatic life experiences may have on immigration stress and problem drinking. Exposure to traumatic life experiences refers to experiencing or witnessing exceedingly distressing experiences, often regarded as extreme and that involve some psychological or physical harm, such as: a natural disaster, a serious accident, a life-threatening medical condition, war, physical and/or sexual violence, etc. (Stamm et al., 1996). In the general population, exposure to traumatic life experiences has been linked with various negative outcomes, such as poor physical health (Holman, Silver, & Waitzkin; 1999), depression (Volpicelli, Balarman, Hahn, Wallace, & Bux, 1999) and other psychiatric disorders, such as anxiety, somatic disorder, phobias (Holman et al., 1999). Increase in drinking is also among the negative outcomes that have been associated with exposure to trauma in the general population (Stewart, 1996). People that have experienced a traumatic event report problem drinking eliminate feelings of irritability, anxiety, depression, and other distressing emotions (Volpicelli et al., 1999).

      Additionally, Latino immigrants, and immigrants in general, are likely to experience life traumas, either from their country of origin, during the migration process, or post-migration (Cervantes, Salgado de Snyder, & Padilla, 1986; Holman et al., 1999; Slone et al., 2006). For instance, many Central American immigrants have experienced civil wars in their countries of original and political persecution and torture. Some women report being raped, physically

abused, or detained during their immigration journey which can be traumatizing (Suarez-Orozco, 2000). Additionally, the constant fear of being deported creates a stressful situation for illegal immigrants, especially if they have to return to a dangerous situation in their homeland (Cervantes et al., 1986; Cavazos-Rehg, Zayas, & Spitznagel, 2007). Statistics on Latinos show that in comparison to U.S. born non-Latino Whites; Central American immigrants were 76% more likely to report having experienced a traumatic life event (Holman, et al., 1999).

Another studied with Latino immigrants noted that participants with a high prevalence of exposure to political violence before immigrating had a lower quality of mental health and a lower health-related quality of life (Eisenman, Gelberg, Liu, & Shapario, 2003). Furthermore, even when Latino immigrants have not experienced a traumatic life event, they may have witnessed a close significant family member or friend experiencing the event (Suarez-Orozco, 2000). Immigrants exposed to trauma suffer from related symptoms long after the trauma, and the symptoms related to the trauma often add to the stresses of immigration (Suarez-Orozco, 2000). Given that immigrant Latinos, particularly from Central America, are likely to have been exposed to some traumatic life experience and that these experiences have been linked to problem drinking in other populations, the present study examined and controlled for the exposure to traumatic life experiences in its analysis of the relationship between immigration stress and problem drinking.

The Couple's Context. As of today there is no published study, either on acculturative or immigration stress or exposure to traumatic life experiences, either quantitative or qualitative, that has explored problem drinking, immigration stress, and exposure to traumatic life experiences within the context of the couple's relationship in the Latino immigrant population. For the most part, factors affecting drinking have been studied at the individual level, often only

focusing on the Latino male population (Kim-Godwin & Fox, 2009). When the immediate relational context of the couple is considered, it has been mostly in relation to inter-partner violence (Caetano et al., 2000; Caetano et al., 2007; Kim-Godwin & Fox, 2009). In the case of immigrant Latino couples, it is unknown if the individuals' stress from immigration and from traumatic experiences may affect not only his or her drinking patterns about also his or her partner's.

Nonetheless, models of couples' stress consider that both partners' stress processes are associated (for a review see Randall & Bodenmann, 2009). One of such models is the Systemic-Transactional Stress Model (STM; Bodenmann, 1997) that argues that one partner's stress always becomes the other partner's stress as well. This study will be guided by STM and will examine the association of each partner's immigration stress and its different dimensions (discrimination, sense of loss, novelty, missing family, isolation, language barriers, occupational challenges, not feeling at home, and legal) with their own and their partner's problem drinking.

Theoretical Framework

Bodenmann's STM (1997) is an adaptation of Lazarus and Folkman's transactional stress theory (1984) to the context of the couple's relationship. According to Lazarus and Folkman (1984), an individual experiences stress when he or she perceives that the demands of a situation exceed the resources that he or she has available to meet such demands. Couple stress theories, such as STM, explain the interdependence between partners' stress processes. According to STM, one partner's stress and coping cannot be understood without considering the other partner's stress and coping for two reasons. First, there is an interdependence between both partners' stress levels. In fact, various studies on stress in the context of couple's relationships have shown interdependence in both partners' stress levels (e.g., Falconier, 2010; Falconier,

10

Nussbeck, Bodenmann, Schneider, & Bradbury, in press). The positive relation between the two partners' stress levels has received various explanations (for a review see Westman & Vinokur, 1998). On one hand, the positive relation between partners' stress levels has been attributed to the fact that partners may share the context in which they experience stress, with some stressors being common ones. On the other hand, the positive association has been viewed as a the result of a direct transmission of stress from one partner to another that is above and beyond the effects of a common stressor.

The second reason to consider both partners' stress levels is that according to STM, an individual responds or copes not only with his or her own stress level, but also his or her partner's stress level. It has been found that one partner's stress is related not only to his or her own behavioral and emotional changes, but also to his or her partner's behavioral and emotional changes (e.g., Falconier & Epstein, 2010; Falconier, Nussbeck, & Bodenmann, 2013).

Therefore, from a STM perspective in a couple's relationship, each partner's immigration stress may contribute to the other partner's stress and will have effects on both partners' behavioral and emotional changes; in this case, it may have effects on both partners' problem drinking. In addition, either partner may activate coping behaviors in response to their own stress or their partner's stress. Each partner's exposure to traumatic life experience may affect the stress they experience from immigration and the problem drinking.

Significance

It is important to understand factors that contribute to problem drinking among this population, given that problem drinking is prevalent among Latinos in the U.S. and problem drinking is associated with negative individual and relational outcomes. Qualitative studies suggest that immigration stress might be one of those factors, but no quantitative studies have

11

examined that possibility thus far. Examining immigration stress will augment understanding of this issue to include important sources of immigration-related stress (e.g., missing family, not feeling at home) that have been left out in studies of acculturative stress in the Latino population. Furthermore, by examining each dimension of immigration stress in relation to problem drinking, the present study might discriminate the individual contributions of each dimension, overcoming perhaps some of the contradictory findings in relation to acculturative stress. In addition, and most importantly, studies on problem drinking and immigration or acculturative stress have focused predominantly on the individual, examining only actor effects. The present study will focus not only on the association between each partner's immigration stress and exposure to traumatic life experiences to his or her own problem drinking (actor effects), but also his or her partner's consumption (partner effects), with the notion that drinking might be a response to one's own immigration stress, as well as one's partner's immigration stress. Understanding if a Latino's stress from immigration experiences contribute to his or her own, as well as his or her partner's problem drinking, while considering each partner's level of exposure to traumatic life experiences might help clinicians tailor a more specific treatment for couples' experiencing alcohol related problems. Clinicians can also address and assess more specific stressors that may be related to the clients' immigration experience and being exposed to trauma. Finally, understanding how immigrant couples experience stress is important because in general "the better the partners *together* are able to cope with stress, the higher their chances for optimal marital satisfaction and stability" (Bodenmann, 2005 p. 46). Likewise, the findings help clinicians develop a better treatment for Latino couples experiencing drinking problems, such as learning more effective coping skills, better communication, etc. Additionally, these finding can

assist for the development of preventative treatment, identifying risk factors and signs leading to problem drinking.

Rationale

A quantitative approach will be used as theoretically, and empirically-driven hypotheses will be tested. In this quantitative approach, data from both partners will be included and analyzed within the same model, so that the actor and partners effects can be analyzed and controlled for. This is consistent with the Actor-Partner Interdependence Model (APIM; Kashy, & Kenny, 1999) that has been advocated for research with couples as partners' data tend to be associated due to interdependence effects.

Purpose of the Study

This study will examine the relationship of each partner's overall immigration stress and its different dimensions with both his or her own problem drinking and the partner's problem drinking while considering the contributions of exposure to traumatic life experiences to immigration stress and problem drinking in first-generation immigrant Latino couples living in the Washington DC metropolitan area. The study will be guided by STM (Bodenmann, 1997), which is a couple's stress theory that considers coping behaviors, such as problem drinking as a response, not only to one's stress but also one partner's stress.

Research Question

Primary

What is the relationship of each partner's overall immigration stress and each of its different dimensions with their own and their partner's problem drinking in Latino immigrant couples?

Secondary

13

What is the contribution of each partner's exposure to traumatic life experiences to their own problem drinking and immigrations stress (overall and its different dimensions) in Latino immigrant couples?

CHAPTER 2: LITERATURE REVIEW

This literature review will describe the current research related to Latinos regarding immigration stress, drinking, and trauma. The literature review will also address current research in the general population on coping and drinking, exposure to trauma and drinking. The section on Latinos and drinking includes the current research with couples, which takes into account research about drinking and inter-partner violence. Additionally, this section will review research on trauma and drinking.

Immigration Stress and Latinos

Stress is a part of the human experience and is a normal occurrence in our lives (Padilla & Borrero, 2006). Latinos, like most immigrants, face numerous challenges when immigrating to the U.S. (Finch & Vega, 2003). Some of these stressors include: stress related to legal status, language conflict, and experiencing discrimination among other challenges (Finch & Vega, 2003). When we focus on stressors specific to Latino immigrant couples, our understanding is that Latino couples experience stressors similar to other couples (Padilla & Borrero, 2006). However, Latino couples can experience an added layer of stress due to acculturation, like the lack of social support (Padilla &Borrero, 2006). Additionally, when the couple's acculturative level intrinsically differs, the couple may experience added marital discord in the relationship (Padilla & Borrero, 2006). Vega, Kolody, and Valle, (1988) found that less acculturated women reported an increase of martial stress.

Most of the research available focuses on acculturation stress, rather than immigration stress. One study by Negy, Hammon, Reig-Ferrer and Carper, (2010) explored the relationship between acculturation stress and martial distress among Latina immigrant women. The sample consisted of 95 Latina immigrant women. Results from this study show that an increase from

acculturative stress also resulted in an increase of marital stress (Negy et al., 2010).

Additionally, this study indicates that social support has an impact on both marital distress and

acculturative stress; Latina women who "felt supported by family members and friends

experienced less acculturative stress and marital distress" (Negy et al., 2010, p 15).

Another study also researched the effects of acculturation stressors and social support to

examine how the stressors affect the health of the individuals (Finch & Vega, 2003). One study

consisted of 3012 participants taken from the Mexican American Prevalence and Services

Survey; about two-thirds of the participants were born in Mexico (Finch & Vega, 2003). The

results from this study indicated that stressors, such as perceived discrimination, had a greater

impact on the health of the participant if social support was low. Poorer health is reported in

Latinos lacking social support and experiencing a higher level of discrimination stress (Finch &

Vega, 2003). Other acculturation stressors, such as legal status stress, have a significant effect on

physical health as well (Finch & Vega, 2003). The researchers in this study purport that those

immigrant families and individuals with high levels of social support benefit because the support

can "buffer" some of the harmful effects that immigration can cause (Finch & Vega, 2003).

However, those individuals without the social support are reported to be more vulnerable to the

stress associated with acculturation (Finch & Vega, 2003).

Additionally, acculturative stress and other factors of immigration have been tied to an

increase in instances of depression and increase in suicidal ideation in Latino immigrants,

specifically Mexican immigrants (Hovey, 2000). Some of these factors that put Latino

immigrants at risk, include losing a connection with one's family and friends from one's country

of origin, language barriers, ineffective coping, lack of access to resources, and feelings of not

belonging (Hovey, 2000). Hovey (2000) studied 114 Mexican immigrant participants, and 56%

reported high levels of depressive symptomology. Women in this study reported higher levels of depression than men in the study (Hovey, 2000). In this study, 11% of the participant reported high levels of suicidal ideation. Acculturation stress was predictive of both depression and suicidal ideation, with individuals reporting higher levels of acculturation stress also subsequently reporting higher levels of depressive symptoms and suicidal ideation (Hovey, 2000).

Bodenmann's STM (1997) sets the foundation for understanding how stress experienced by one partner in the relationship can influences the other partner. He defines dyadic stress as "a specific stressful encounter that affects both partners either directly or indirectly and triggers the coping efforts of both partners within a defined time and a defined geographic location"(Bodenmann, 2005, p. 33). Most of the research available on how couples experience stress, uses the general population; for example, Bodenmann (1997) found that couples experiencing stress showed a decrease in the quality of their marital interactions; along with, long-term stress increasing the likelihood of divorce. Westman and Vinokur (1998) research indicated that there is a direct effect of depression from one partner to the other partner, in other words there was a spill-over of depression from one partner to the other. The data from this study also indicated that common stressors had a negative effect on both partners' depression (Westman & Vinokur, 1998). This framework helps us understand how Latino immigrant couples experience stress and how this can affect their coping efforts; perhaps one partner may resort to drinking as his or her way to cope with the stress.

One study using Argentine couples found that economic strain was indirectly related to both partners' relationship satisfaction (Falconier & Epstien, 2010). However, only the males' economic strain had this effect on relationship satisfaction. Additionally, when the males' were

under economic stress there tends to be more psychological aggression between both partners (Falconier & Epstien, 2010). In a different study, overall immigration stress was negatively related to the females' relationship satisfaction but did not have an effect on the males' relationship satisfaction (Falconier et al., 2013). Additionally, dyadic coping mitigated the negative effects of immigration stress for the female partner (Falconier, et al., 2013). We are beginning to understand how couples cope with stress more but further research still needs to be conducted to have a better understanding (Randall & Bodenmann, 2009).

Drinking Trends among Latinos

One study examined the prevalence of alcohol abuse and dependence between the years 2000-2001 by using a nationally representative sample (Grant et al., 2004). In this study, Latinos were among the groups where males (6.93%) had significantly higher rates than their female counterparts (2.55%), at about a 2.72 ratio from a sample size of 43,093 taken from the National Epidemiologic Survey on Alcohol and Related Conditions (Grant et al., 2004). Latinos had the second highest rates of alcohol abuse at 3.97%, only Whites had a higher rate at 5.10% (Grant et al., 2004). Similar rates were found for alcohol dependence, Latino males had approximately a 2.34 higher ratio of dependence than women (Grant et al., 2004).

Different age groups in the Latino population also have high rates of problem drinking. A study researching the perceived risk and prevalence of alcohol between Latinos, Whites, and Blacks found that Latinos were "more likely to binge drink" and reported a "higher prevalence of heavy alcohol use than Whites and Blacks" (Ma & Shive, 2000 p. 363). When broken down by ages, Latinos between 12-17 years, and 35 years and older, had the highest rates of binge drinking across groups (Ma & Shive, 2000). In this study, males also reported higher rates of alcohol use than females (Ma & Shive, 2000).

Immigration Stress and Problem Drinking

When it comes to immigration stress and drinking, few studies have thoroughly examined this relationship directly. One qualitative study examined risk behaviors of recent Latino immigrant males by exploring the participants' experience (Rhodes et al., 2009). This study explored the immigration experience of nine male participants. While this study focused more specifically at the sexual risk behavior of males, participants quoted that their immigration experiences were among the reasons that they participated in risky drinking behavior, as well as risky sexual behavior (Rhodes et al., 2009). Their "immigration experience" included sacrificing not seeing family, gender role reversal, lack of job opportunities, and poor housing among other factors that were consequences of relocating to the U.S. (Rhodes et al., 2009). This study suggests that a decrease of power for Latino males and the added increase of stress, related to immigrating to the U.S. leads to an increase of engaging in risky behavior, including drinking (Rhodes et al., 2009).

In a qualitative study by Lee et al., (2010) one reason Latino immigrants cited for drinking in the U.S. is that their "social world" changes after immigrating to the U.S. Losing social connections from back home, including missing family and friends, were some of the social changes that participants experienced which led to drinking (Lee et al., 2010). The study interviewed 36 participants to obtain their experience of the social process of acculturation and drinking (Lee et al., (2010). Participants compare the differences between drinking in their native country to drinking in the U.S. Some participants felt that in their countries drinking was a leisure activity, to be part of a group, and for social events. On the contrary, participants noted that drinking in the U.S. was due to feeling isolated, and coping with difficulties adjusting, like not speaking the language and missing family (Lee et al., 2010).

Acculturation and Problem Drinking

The literature on drinking and Latinos has mostly been covered by exploring the effects of acculturation and drinking. Acculturation has been linked with many negative behaviors; among these behaviors is drinking (Galvan & Caetano, 2003). Results from acculturation studies and problem drinking have varied among Latino immigrants. For women, the studies have been more consistent, linking higher acculturation with higher rates of drinking and higher quantities of alcohol consumption (Karriker-Jaffe, & Zemore, 2009; Zemore, 2007). The relationship between acculturation levels and drinking among Latino males is inconclusive. Some studies show a positive relationship between acculturation and drinking; others show no relationship (Zemore, 2007).

In a literature review on acculturation and problem drinking, Zemore (2007) reviewed 24 articles, which examined differences between genders. Research suggests gender reacts to acculturation (Zemore, 2007). Studies show that Latina women with higher acculturation levels have heavier drinking; this finding was true for all but three studies reviewed (Zemore, 2007). One of the articles reviewed shows that Latinas in the higher acculturation category are 6 times more likely to drink than Latinas in the low acculturation category (Zemore, 2007). Results from the 24 articles varied for men: no definite conclusions were found when analyzing the relationships between acculturation and drinking (Zemore, 2007).

The association between acculturation and drinking is still not well defined in the field; many researchers believe that this relationship is a complex relationship which is often oversimplified (Lee et al., 2010; Zamboanga et al., 2006). For example, when different moderators are included to examine acculturation and drinking, different results are observed. A study by Karriker-Jaffe and Zemore (2009) suggests that income levels moderate acculturation

and drinking rates. Latino males in this study report higher drinking when they have high acculturation levels and high income, compared to males with higher acculturation levels with lower income (Karriker-Jaffe & Zemore, 2009).

A quantitative study by Zamboanga et al., (2006) surveyed 126 Mexican-American Latino college students to see whether gender moderates acculturation and heavy drinking. Zamboanga and colleagues (2006), used a global acculturation scale to measure acculturation, along with an ethnic identity scale. The results from this study show that "men who were more ethnically identified also tended to report more frequent heavy alcohol usage"; this association was not seen with females (Zamboanga et al., 2006, p. 2195), suggesting that ethnically identifying with the Mexican culture did not increase drinking for women. This can be due to values from the Latino culture not condoning drinking for women, but do permit drinking for men. As mentioned above Latina females tend to drink less, and at lower quantities than Latino males (Zemore, 2007).

Problem Drinking and Latino Couples

The literature available of Latino couples and alcohol is limited; most focuses on the negative consequence like inter-partner violence and marital distress. A study by Johns, Newcomb, Johnson, and Bradbury (2007) explored the relationship between alcohol-related problems, anger, and marital satisfaction in Latino couples, European-American couples, and bi-ethnic Latino couples. This study was conducted with newlywed couples in the Los Angeles area, and contained a small samples size of foreign-born Latino couples (Johns et al., 2007). Overall, data from the entire sample shows that the husbands' alcohol related problems negatively correlated with both partners' martial satisfaction. Across the different groups, the data shows that European-American couples have similar levels of marital satisfaction in

comparison to the levels of alcohol-related problems (Johns et al., 2007). However, in mono-ethnic Latino couples (both partners being born outside of the U.S.); the male's alcohol related problems have a negative impact on marital satisfaction (Johns et al., 2007). The more alcohol-related problems the husband reported correlated with the lower the marital satisfaction of the couple (Johns et al., 2007).

Studies that have examined inter-partner violence and drinking, indicates that "couples with alcohol-related problems were more likely than those without problems to report intimate partner violence, independent of whether the violence was male or female" (Caetano et al., 2001 p. 62). A study by Caetano and colleagues used data from the National Couples study which surveyed more than 1000 White, Black and Latino couples considering episodes of IPV. Latinos couples reported statistically significant rates of at least one instance of IPV at 17% for MFPV and 21 % for FMPV (Caetano et al., 2001). These rates were higher than Whites which reported 11.5% for MFPV and 15% for FMPV. Rates reported by Latino couples were not as high as those reported by Black couples, who reported 23% for MFPV and 30% for FMPV (Caetano et al., 2001). A considerable amount of the IPV reported occurred when one or both partners were drinking, with men being more likely to drinking during an IPV episode than women, independent of ethnicity (Caetano et al., 2001). Overall the data suggested that couples with problem drinking report more IPV (Caetano et al., 2001).

The literature with inter-partner violence and drinking among Latino couples has produced mixed reports. Kim-Godwin and Fox (2009) surveyed 291 Latino-migrant workers and farm workers to study the relationship between IPV, problem drinking, and gender. In this study, there were significant gender differences reported by both male and female Latino-migrant workers; males reported more problem drinking than females (Kim-Godwin & Fox,

22

2009). Additionally, "respondents with higher IPV tendency were more likely to drink alcohol, indicating a strong relationship between alcohol use and IPV" (Kim-Godwin & Fox, 2009, p.137).

Other research has also linked IPV and problem drinking, reporting a significant positive relationship (Caetano et al., 2000b). One study sampled 527 Latino couples, findings from this study show that among Latino couples with high acculturation, male-perpetrated violence is more prevalent when higher levels of alcohol use is involved (Caetano et al., 2000b) In this same study, "higher rates of female-perpetrated violence are associated with drinking in both medium and high acculturated groups," meaning that females that used alcohol were also likely to report violence against their partner in highly acculturated groups (Caetano et al., 2000b, p 37). Results from this study indicate that heavier amounts of alcohol consumption were risk factors for IPV. The reverse was also true, less drinking by the male and females participants were protective factors against IPV (Caetano et al., 2000b).

On the contrary, a study by Caetano et al., (2007) did not show a relationship between IPV, acculturative stress, and drinking. This study sampled 387 Latino couples. It is possible that there was no association with violence and drinking due to the sample having light drinking and the IPV levels being moderate; other clinical trials have reported association between more severe drinking and IPV levels (Caetano et al., 2007). Another possibility is that the complexity between these three factors is hard to measure.

Coping and Problem Drinking

It is said that "alcohol is often used to cope with distress, but support for this model is inconsistent" (Colder, 2001, p. 237). There are several models that try to explain the relationship between coping and drinking. Research on drinking to cope define "drinking to cope" "as the

tendency to use alcohol to escape, avoid, or otherwise regulate unpleasant emotions" (Cooper et al., 1988, p. 218). Cooper and colleagues (1988) suggest that expecting alcohol to ameliorate effect of negative emotions increases the likelihood of drinking under distress. This pattern was found to be true and had a stronger effect among people with avoidant coping styles, meaning that people with avoidant coping styles with positive expectancy of alcohol may be most likely to use alcohol as a coping mechanism. Drinking to cope was also a strong predictor of alcohol abuse (Cooper et al., 1988). Research suggests that individuals with fewer coping skills were more likely to have abusive alcohol patterns, particularly those individuals lacking inadequate emotion-focused coping (Cooper et al. 1988).

Men tend to report more drinking when they have positive expectancies of alcohol on days that they perceived high stress (Armeli et al., 2000). Research suggests that women who tend to avoid problem focused coping also reported an increase of problem drinking (Breslin, O'Keeffe, Burrell, Ratliff-Crain, & Baum, 1995). However, in certain situations perceived stress has been associated with a decrease of weekly alcohol consumption for women (Breslin et al., 1995), adding to the complexity of the relationship between stress and drinking. Among a college based population, active coping mediated the effects of stress and heavy alcohol use for males (Hussong, 2003). Life stressors like school, relationships, life managements, and social adjustments were associated with heavier drinking (Hussong, 2003).

The literature on alcohol and coping has also studies stress. It is widely agreed that there is a relationship between stress and consuming alcohol, and that people use alcohol to cope with stress (Ayer et al., 2010). However, the "research on the relation of stress to alcohol consumption is inconsistent regarding the direction of effects, and this association has been

shown to vary by sex and type of stress"(Ayer et al., 2010). Stress has been associated with predicting the level of alcohol use more so in men than in women (Ayer et al., 2010).

In a studied by Dawson et al., (2005), the researched studied the relationship between stress and types of past stressful life experience and alcohol consumption within the years of 2000 and 2001. The data was taken from the National Epidemiologic Survey on Alcohol and Related Condition and used 43,093 respondents past drinking, this sample include and ethnically diverse sample (Dawson et al., 2005). Individuals reporting 6 or more life stressors reported a higher average of alcohol consumption and a higher frequency of drinking more than triple, those individuals reporting no life stressors (Dawson et al., 2005). Social, legal, and job-related stressors were linked to higher alcohol consumption but not to a higher frequency of drinking (Dawson et al., 2005). Overall stress and alcohol consumption was greater for men than for women but were significant for both (Dawson et al., 2005). "Frequency of heavy (5+ drinks for men; 4+ drinks for women) drinking increased by 24% with each additional stressor reported by men and by 13% with each additional stressor reported by women" (Dawson et al., 2005, p. 453)

Understanding the relationship between stress and problem drinking is important to this study because according to STM, problem drinking can be one of the individuals' coping responses to deal with stress. Bodenmann's STM would give a better understanding of how couples cope with stress and how this stress can affect their drinking. He explains that stressors that are not coped with effectively are likely to have a negative impact on the other partner and the marriage which can be the case when one partner resorts to drinking as a way to cope (Bodenmann, 2005).

Traumatic Life Experiences and Problem Drinking

Research on psychological trauma and drinking gathered from the general population

supports a link between history of trauma and an increase of problem drinking (Boscarino,

Adams, & Galea, 2006). Additionally, there is a link between chronic trauma and problem

drinking in the general population as well (Kaysen, Dilworth, Simpson, Waldrop, Larimer, &

Resick, 2007). The relationship between problem drinking and past psychological trauma is

complex, with different models explaining why individuals with trauma turn to alcohol

(Boscarino et al., 2006). Research explains that people "self-medicate" after experiencing a

traumatic event attempting to alleviate the stress and symptoms due to the traumatic experience

(Cappell & Greenley, 1987; Stewart, 1996). People that report problem drinking after a traumatic

event often report using alcohol to get rid of feelings of depression, irritability, and anxiety

(Volpicelli et al., 1999). There are many ways that one can experience trauma, such as:

experiencing a horrific event like a natural disaster, assault (physical and sexual), experiencing

war and combat, among other reasons. All of these events can be linked to an increase of

"abusive drinking" patterns (Stewart, 1996).

There is a large amount of research on trauma due to sexual assault. In a recent study by

Kaysen and colleagues (2007), the researchers examined the relationship between alcohol use

and symptoms associated with chronic trauma, using samples from recently battered women.

This study added to the research that people with trauma may use alcohol as a way to cope

(Kaysen et al., 2007). Additionally, the findings in this study suggest heavy episodic drinkers,

reported more traumatic symptomology than women reporting less drinking or abstained from

drinking (Kaysen et al., 2007). "The results support a mediating model, wherein the relationship

between trauma-symptoms and heavy episodic drinking was mediated by drinking to cope (Kaysen et al., 2007, p. 1280).

One study examines the psychological trauma related to the 911 World Trade Center disaster (WTCD). In this study, people with higher exposure to the event were more likely to experience an increase in binge drinking. Alcohol dependence assessed in the years the data was collected shows a positive associated with greater exposure to WTCD (Boscarino et al., 2006). This data adds to the literature of exposure to disasters, trauma related to the disaster, and problem drinking.

The literature on physical and sexual abuse has been better studied when it comes to experienced trauma and drinking. One study researching life-time physical and sexual abuse explored how drinking as a coping mechanism affects trauma in people with severe mental illness (O'Hare, Shen, & Sherrer, 2010). The results from this study show that men reported higher rates of drinking to cope than women (O'Hare et al., 2010). This study also indicates that people with mood disorders have higher tendencies to drink to cope, were more likely to engage in high-risk behavior, and show higher manifestations of PTSD symptoms (O'Hare et al., 2010). Additionally, drinking to cope motives can create a risk for relapse in people with severe mental disorders and mood disorders, which can also increase symptoms of PTSD (O'Hare et al., 2010).

When it comes to Latinos, the research on past trauma and stress due to trauma is limited. Most of the research that is available focuses on trauma due to sexual assault or domestic violence. In a quantitative study conducted in Mexico with Mexican participants, people with a history of PTSD and/or MDD were more likely to report alcohol misuse (Slone et al., 2006). In this study, potential traumatic events as children were also linked to misuse of alcohol, specifically for men (Slone et al., 2006). These findings are consistent with other findings that

suggest that problems with problem drinking can continue even after the traumatic event has occurred (Boscarino et al., 2006). Additionally, it demonstrates that trauma-related experiences can cause problematic drinking in different cultures.

A different study observed the prevalence of traumatic life events in primary care patients in an ethnically diverse sample (Holman et al., 1999). This study sampled 1469 participants in the California, Irvine area. Of this sample, 55% of the participants were women. The purpose of the study was to explore lifetime and recent (previous year) traumatic events, the types of traumatic events, and examine the correlation between psychiatric disorder and traumatic events (Holman et al., 1999). The types of psychiatric disorders that were examined were somatic disorders, mood disorders like depression, general anxiety disorder, panic, and phobia. Overall about 9.6% of the participants reported recent trauma and 57.2% participants experience life-time trauma (Holman et al., 1999). Central American immigrants reported the highest rates of trauma with 72% of the participants reporting trauma. Finally, this data indicates a relationship with between psychiatric disorders and traumatic events where individuals who reported a lifetime or recent traumatic event were twice as likely to meet criteria for a psychiatric disorder (Holman et al., 1999).

Summary

In summary, the information above is relevant to this study because similar to acculturative stress, different levels of immigration stress experienced by the participants may affect their health and affect how they cope. Some of the ways that people cope with stress are through ineffective ways, like drinking. Not only may immigration stress affect the individual, but the issues may also spill over to affect their partner. Additionally, studies suggest that problem drinking among Latinos can change because of stressors related to living in a new

culture, such as: feeling socially isolated, language barriers, and working low-paying jobs (Lee et al., 2006; Rhodes et al., 2009). Acculturative stress has also been linked to depression and suicidal ideation in Latinos, affecting the individuals' wellbeing (Hovey, 2000). Similarly, immigration stress may affect the individuals' well-being and their partners' well-being, which is consistent with Bodemman's STM (1997). STM provides an understanding on how couples experience stress; likewise we can get a better understanding of how Latino immigrants experience stress and possibly influence one or both partners' problem drinking. Experiencing trauma has also been linked to abusive drinking and higher levels of drinking in the general population (Stewart, 1996) and cause symptoms of depression, irritability, and anxiety (Volpicelli et al., 1999). These symptoms can add to the stresses of immigration (Suarez-Orozco, 2000). For these reasons is it also important to explore exposure to traumatic life experiences observing how such exposure to such event may affect one or both partner's problem drinking.

Conceptual Model. Below is the conceptual model that will be examined in the present study. The hypotheses listed below are the associations included in this model.

Hypothesis 1: Each partner's overall immigration stress and each of its dimensions will be positively associated with their own and their partner's problem drinking.

Hypothesis 2: Each partner's exposure to traumatic life experiences will be positively related to their own problem drinking and immigration stress (overall and each dimension).

Hypothesis 3: Both partners' immigration stress (overall and each dimension) will be positively associated.

Hypothesis 4: Both partners' exposure to traumatic life experiences will be positively associated.

29

The inclusion of exposure to traumatic life experiences allows for controlling for this factor that may influence both immigration stress and problem drinking. Similarly, the inclusion of both partners' variables within the same model allows examining for the effect of one partner's stress on problem drinking above and beyond the effects of the other partner's stress on problem drinking.

Figure 1. Conceptual Model.

Male Exposure to
Traumatic Life
Experiences

+

+

E

+

Male Immigration
Stress

+

Male Problem Drinking

E

+

+

+

+

Female Immigration
Stress

+

Female Problem Drinking

E

+

E

→ Direct Effect

+

Female Exposure to
Traumatic Life
Experiences

+

←→ Covariance

31
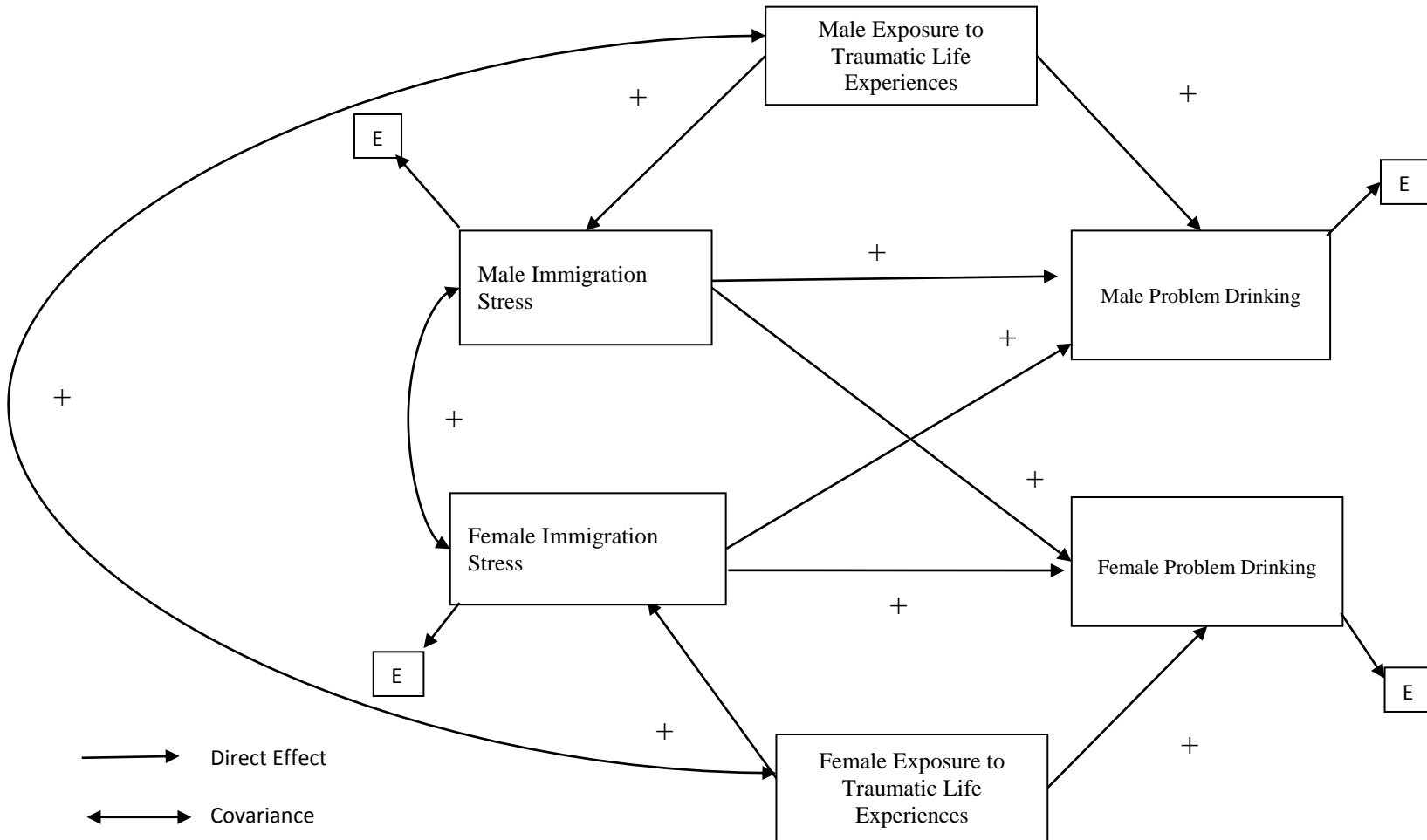
CHAPTER 3: METHODS

Design of the Study

      This study will be analyzing secondary data that was originally collected by Dr. Mariana Falconier at Virginia Tech in 2009 for a study of stress on Latino couples' functioning. Even though the data collected on immigration stress had been analyzed in relation to dyadic coping and relationship satisfaction, the data on problem drinking and trauma-related history have not been analyzed yet.

Study Participants

      Participants in the original study were recruited in the Washington D.C. Metropolitan area. The original data set consisted of 114 self- identified immigrant Latino couples in a heterosexual relationship. Given that the present study will focus on first-generation immigrant couples, seven couples will have to be eliminated from the analyses because one of the partners had either been born in the U.S., or had immigrated into the U.S. prior to the age of 10 and therefore, he or she was less likely to experience immigrations stress. Inclusion criteria for participants in the original study included being in a committed relationship; self-identifying as Latino/a (both partners), being at least 18 years of age, and living with current partner for at least one year. The recruitment process involved reaching out to local community outpatient mental health services, Spanish speaking churches, Latino community agencies, private psychotherapist practices, Latino festivals, medical offices and other agencies that serve the Latino population. Spanish and English fliers were used to attract participants. Couples interested in participating were told to contact the researchers. Snowballing techniques were used to attract other potential couples by asking the couples who participated to distribute fliers to potential couples.

Procedure

Prior to collecting data or recruiting participants, a submission to the Virginia Tech Institutional Review Board was made. The recruitment procedures began after receiving IRB approval from the Virginia Tech Board. Fliers were then left at those agencies that agreed for the material to be distributed at their location. As mentioned earlier, couples were instructed to contact researchers if they were interested in participating in the study.

Those couples who contacted the researchers received a package by mail. Inside the package were research consent forms, a form if the participants wished to receive a copy of the research report, an envelope containing the female questionnaire, an envelope containing the male questionnaire, and return envelopes to place the completed questionnaires. The consent forms informed participants that participation in the study was voluntary and that participants could withdraw from the study at any point without penalty. The participants were instructed to review and sign the consent form if they agreed to participate in the study.

In the packets, the partners were instructed to complete the assessments separately and to not consult with each other. Upon completion of the questionnaires, the partners were instructed to return the material in person or by mail. When both partners returned the signed consent forms and questionnaires to the researchers, a $25 dollar gift card was mailed to each partner, totaling $50 per couple. A three digit number was assigned to each couple to insure confidentially and anonymity. Once the data were collected, they were entered into SPSS and prepared for analysis. The database excluded any identifying contact information about participants.

Instruments

The current study will use data from the demographic form and three of the self-report instruments administered in the original study. All questionnaires were originally in English, with the exception of the demographic from which was originally created in Spanish. The scales that were originally in English were translated into Spanish and then translated back into English. The two English versions were compared and the translations were adjusted accordingly.

Immigration Stress Scale. The Demands of Immigration Scale (DIS; Aroian et al., 1998) will be used to measure immigration stress and its different dimensions. The original DIS includes the following subscales: Novelty, Not Feeling at Home, Loss, Discrimination, Occupation and Language. The Novelty subscale includes experiences of newness and unfamiliarity related to living in the new country (e.g., "*I am always facing new situations and circumstances*"). The Not Feeling at Home subscale lists situations where the respondent has felt alienated from the host country (e.g., "*Even though I live here, it does not feel like my country*"). The Loss subscale includes longing for places and things back in one's country of origin (e.g., *"I feel sad when I think of special places back home"*). The Discrimination subscale lists situations of discrimination, such as the respondent's perception that that he or she is being treated differently than native-born individuals (e.g., "*As an immigrant, I am treated as a second-class citizen*"). The Occupation subscale lists difficulties finding work, status demotion, and fewer opportunities for jobs (e.g., "*I have fewer career opportunities than Americans*"). The Language subscale inquires about the respondent's problems when communicating in another language (e.g., "*I have difficulty doing ordinary things because of a language barrier*"). In addition to the pre-existing scales of the DIS, two new subscales were added. The Missing

Family subscale was created to assess the extent to which the respondent experiences missing the family left behind in his or her country of origin (e.g., "*I wish I could speak with my family in my country more often*"). This subscale was included due to the strong orientation that Latinos have towards their family members (Falconier et al., 2013). The Legal subscale was created to assess the extent to which the respondent fears deportation, a fear that is quite common among Central American immigrants (e.g., "*I am afraid that my family or I might be deported*") living in the Washington DC metropolitan area, where the present sample was recruited. On DIS, respondents were asked to rate the frequency with which they currently experience each of the immigration stressors listed on a three-point Likert type scale, 0 = *never,* 1 = *sometimes*, 2 = *very often.* Total scores for overall immigration stress and each of the subscales were computed by adding each of the response values and then dividing the sum by the number of items that were included in the subscale or total scale for overall immigration stress. Past studies have reported the internal consistency for the original scale ranging from .91 to .94, with a test-retest reliability ranging from .89 to .92 (Aroian et al., 1998).

Exposure to Traumatic Life Experiences. Exposure to traumatic life experiences will be assessed with the Stressful Life Experiences Screening Inventory (SLESI; Stamm et al., 1996). SLESI is a 20-item survey that was developed to assess lifetime exposure (personal experience or witnessing) to traumatic experiences such as death of a significant person (*"I have witnessed or experienced the death of a close friend or family member (other than my spouse or child")*, serious injury ("*I have witnessed or experienced a serious accident or injury"),* unwanted sex ("*As an adult I was forced to have unwanted sexual contact*"), violence ("*As an adult or child, I have witnessed someone else being choked, hit, spanked, or pushed hard enough to cause injury"*), war ("*I have been involved in combat or a war or lived in a war affected*

area),, natural disasters (*"I witnessed or experienced a natural disaster; like a hurricane or an earthquake"*), etc. Respondents are asked whether they have experienced or not each of the traumatic life experiences listed (1 = *yes;* 0 = *no*). A total score is obtained by adding all of the response values. Past studies indicate good internal consistency and discriminant validity among the items (Margiotta, 2000; Sprang, 1999; Stamm et al., 1996).

Problem Drinking. The CAGE questionnaire is used to screen for problem drinking. The CAGE test is one of the oldest and most popular screening tools for alcohol abuse developed by Ewing (1968). The questionnaire is designed to screen whether there is any problematic alcohol use; higher scores indicate there is a greater risk for alcohol abuse (Ewing, 1968). The CAGE questionnaire consist of four 'yes' or 'no' questions: (1) Have you ever felt you needed to cut down on your drinking?; (2) Have people annoyed you by criticizing your drinking?; (3) Have you felt bad or guilty about your drinking?; (4) Have you ever had a drink first thing in the morning to steady your nerves or get rid of your hangover (Eye Opener)? Yes responses are coded as 1; No responses are coded as 0. The respondent can have a score ranging from 0 to 4. Researchers have interpreted a score of 2 or higher to indicate alcoholism or drinking problems (Mayfield, McLeod, & Hall, 1974). The CAGE questionnaire has been validated in different setting including psychiatric, medical inpatient, and ambulatory medical patients (Kitchens, 1994). In a generalization study of the CAGE questionnaire, 22 samples studies were compared to examine the internal consistency: the median internal consistency across studies was .74 ranging from .52 to .90 (Shields & Caruso, 2004).

Analytic Strategy

This study will use secondary data that were entered into a Statistical Package for the Social Sciences (SPSS) data file at Virginia Tech. Responses from each member of the couple

were entered under the same case number, but as a different variable so that the data could be eventually analyzed as couple data. The database did not contain any identifying information such as participants' name, phone number, or address so that confidentiality could be protected.

Demographic Information. The study will report participants': age, marital status, relationship length, number of children, educational level, income level, religious affiliation, and number of years living in the U.S. for males and females separately.

Control Variables. Bivariate correlations will be conducted between the demographic variables of age, marital status, relationship length, number of children, income level, and number of years living in the U.S., as well as the variables of interest in this study (problem drinking, immigration stress and each of its dimensions, and exposure to traumatic experiences) in order to examine if any of those demographic variables is correlated with more than one of the main variables. If any the demographic variables is found correlate with at least two of the main variables in this study, that particular demographic variable will be included in the path model analysis as an exogenous variable affecting directly each of the main variables. Given the limited sample size, this strategy will help not to increase unnecessarily the number of variables included in the path model analysis, which will reduce the likelihood of encountering convergence problems during the analysis. It has been recommended to have at least 5 cases per parameter to be estimated (Byrne, 2006) and the conceptual model to be analyzed currently includes the estimation of at least 13 parameters requiring a total of 65 cases. The inclusion of one demographic variable would require the estimation of at least 6 new parameters and the need for 30 more cases. Consequently, including more than one demographic variable in the analysis, might create estimation problems for the software. Nonetheless, in the event that more demographic variables need to be included, their effects will be partial led out from the main

37

variables and the unstandardized residuals of the main variables will be the data used for the path

model analysis. A strategy from previous studies will be implemented by partialing out the

influence of demographic variables from the main variables through regression analyses and then

conducting further analyses with the unstandardized residuals (e.g., Falconier & Epstein, 2010;

Newcomb & Bentler, 1988).

Main Variables Characteristics. Means and standard deviations of immigration stress

and each of its different dimensions (loss, novelty, occupation, not feeling at home, language,

discrimination, legal, and missing family), exposure to traumatic life experiences, and problem

drinking will be reported. T-tests for paired samples will be used to assess gender differences in

the main variables. Bivariate correlations among the main variables for both men and women

will be calculated.

Multivariate Analysis. The conceptual model of interest will be analyzed through

modern path analysis using EQS (version 6.1) and the maximum likelihood estimation method.

The first model tested will include overall immigration stress and then, due to sample size

limitations, eight different models will be tested with each including each of the eight

dimensions of immigration stress. The fit of the data to the conceptual model will be assessed

through a chi-square test and the three fit indices recommended by Hu and Bentler (1999): the

Comparative Fit Index (CFI >.96), the Standardized Root Mean Square Residual (SRMR <.08),

and the Root Mean Square Error of Approximation (RMSEA <.06) with its 95% confidence

interval. The chi square allows us to determine if what is observed in a distribution of

frequencies is what is expected to occur by chance (Salkind, 2012). In other words, when

comparing data collected, is the variation in the data due to chance or is it due to one of the

variables being tested (Salkind, 2012). The distribution of the data will be examined and in the

event that the data are not multivariately distributed, robust statistics will be used instead. EQS calculates the Yuan-Bentler scaled chi-square (χ_{YB}^{2}), an adjusted chi-square statistic used with non-normal data (Yuan & Bentler, 2000) and robust CFI and RMSEA. Exploratory analyses will be conducted using the Lagrange Multiplier to assess which paths could be added to improve the model fit. Direct and indirect effects calculated by the EQS program will also be reported.

Immigration Stress, Exposure to Traumatic Life Experiences, and Problem Drinking Among

First-Generation Immigrant Latino Couples

Monica Huerta

Virginia Polytechnic Institute and State University

Abstract

This study explored the relationship of each partner's immigration stress and exposure to traumatic life experiences, with both his or her own problem drinking and the partner's problem drinking. The study was guided by Bodenmann's systemic-transactional stress model and used secondary data collected in 2009 from 104 Latino immigrant couples living in the Washington DC area. Results from the path model analysis indicated that even though men's overall immigration stress was not significantly related to their own problem drinking, emotional dimensions of immigration stress were in a positive direction. Men's overall immigration stress was negatively related to their partners' problem drinking. The women's overall immigration stress was significantly and positively related to their own problem drinking, particularly for acculturation related aspects and stress from missing family, but it was not significantly related to their partner's problem drinking. Additionally, men's exposure to traumatic life experiences was significantly, positively associated with problem drinking but it was not significantly associated with their own overall immigration stress. For women, results were different as exposure to traumatic life experiences was not associated with their own problem drinking but it was significantly and positively related to their overall immigration stress in the hypothesized direction. Limitations, research, and clinical implications of the findings are discussed.

Immigration Stress, Exposure to Traumatic Life Experiences, and Problem Drinking Among

First-Generation Immigrant Latino Couples

Excessive drinking can lead to long-term health effects, such as liver disease, heart disease, and neurological deficit (National Institute of Health (NIH), 2013). Within the U.S., Latinos are at a high risk for alcohol dependence and abuse (Grant, Dawson, Stinson, Chou, Dufour, & Pickering, 2004). According to the NIH (2013), Latinos who drink tend to consume alcohol at higher volumes than non-Latinos and this seems to be true across different age groups (NIH, 2013). In addition, Latinos who develop an alcohol dependency report more recurring episodes and/or persistent problems with alcohol at a rate of 33%, compared to 22.8% for Whites (NIH, 2013).

Latino immigrants are the largest minority group and the fastest growing population in the United States (U.S. Census Bureau, 2011). According to the last U.S. Census in 2010, Latinos accounted for 16.3% of the national population in the United States and were found to have grown by 43% since the last census (U.S. Census Bureau, 2011). The population is predicted to continue growing rapidly during the coming years; therefore, it is important for researchers to continue expanding the knowledge about this population in regards to problem drinking.

Within the Latino community, drinking patterns differ by gender. Research consistently indicates that Latino males consume alcohol more frequently and at higher rates than that of Latina females (Grant et al., 2004; Lara, Gamboa, Kahramanian, Morales, Hayes & Bautista, 2005; Slone, Norris, Gutiérrez Rodriguez, Gutiérrez Rodriguez, Murphy, & Perill, 2006; Zemore, 2007), including adolescents (Corbin, Vaughan, & Fromme, 2008; Wahl & Eitle, 2010). In addition, Latino males report having higher rates of alcohol-related problems, ranging from

health problems (NIH, 2013) to legal issues, such as incarceration and arrests for driving under the influence (Caetano & Clark, 2000; Galvan & Caetano, 2003; Zemore, Mulia, Ye, Borges, & Greenfield, 2008). Interestingly, Latina women tend not only to drink less than their male counterparts, but they also report less legal difficulties resulting from problem drinking than Latino males and non-Latina women (Arciniega, Arroyo, Miller, & Tonigan, 1996). This correlation could be due to Latina women drinking less than Latino men.

Excessive drinking tends to be accompanied by mental health issues and relational difficulty issues as well. In the general population, individuals with alcohol use disorders also tend to have co-occurring mental disorders such as major depressive disorder and anxiety disorders (Petrakis, Gonzalez, Rosenheck, & Krystal, 2002) and become involved in inter-partner violence (Caetano, Schafer, & Cunradi, 2001). The situation is no different within the Latino population, for whom the presence of a co-occurring psychiatric disorder is about 28.1% for men and 30.2% for women (Alegria, Mulvaney, Torres, Polo, Cao, & Canino, 2007) and for whom inter-partner violence is usually related to one or both partners' alcohol use (Caetano, Cunradi, Schafer, & Clark 2000a; Caetano, Schafer, Clark, Cunradi, & Rasberry, 2000b; Kim-Godwin & Fox, 2009). Furthermore, research shows that the drinking patterns of inter-partner violence victims are also a risk factor for both female-to-male and male-to-female partner violence among Latino couples (Caetano, Ramisetty-Mikler, Vaeth, & Harris, 2007). In sum, among Latinos, problem drinking is associated with negative consequences at both the individual and the relational levels.

Among the many contributing factors to problem drinking that have been identified, such as past trauma (Stewart, 1996), depression (Slone et al., 2006), and family history (for a review see Matud, 2004), stress has been considered one of them (Dawson, Grant, & Ruan, 2005).

43

Studies examining stress and drinking have found that individuals reporting more stressors also reported higher frequencies of drinking than those individuals reporting no life stressors (Dawson et al., 2005). When comparing individuals who abstained from drinking, moderate drinkers, and heavy drinkers, perceived stress was positively related with drinking patterns, with heavy drinkers reporting the highest amount of perceived stress from these three groups (Cole, Trucker, & Friedman, 1990). Additionally, individuals lacking coping skills are more likely to drink (Cooper, Russell, & George, 1988). In a discussion, Cooper and colleagues (1988) used Lazarus and Folkman (1984) stress model to understand the results from their findings regarding stress and drinking to cope; stating that perhaps individuals using avoiding styles of coping, drink more under highly stressful situations. Less is known on how partners' deal with stress and how this stress may lead to alcohol consumption.

Immigration Stress. Within the various types of stress that can affect Latinos, immigration stress is one of them. Immigration stress (Falconier, Nussbeck, & Bodenmann, 2013) refers to the various types of stress associated with being an immigrant, and therefore, it is not just limited to the stress that comes from adapting to the host culture, commonly known as acculturation stress (Berry, 1997), and that involves language and occupational challenges and experiencing a sense of novelty frequently. In addition to acculturation stress, Aroian and colleagues (1998) view immigration stress as also including the stress that derives from encountering discrimination, not feeling at home, and experiencing a sense of loss. In studying the Latino population, missing one's family and fearing deportation could be added as additional sources of immigration stress (Falconier et al., 2013). Considering Latinos' strong family orientation (Falicov, 1998), it seems that the separation from the extended family might create a significant stress for Latino immigrants. The illegal immigration status of a large proportion of

Latino immigrants might also contribute to fearing deportation (Cavazos-Rehg, Zayas, & Spitznagel, 2007) and therefore, it could be considered another source of immigration stress.

Even though stress has been associated with problem drinking (Ayer, Harder, Rose, & Helzer, 2011), no study has examined whether immigration stress or any of its dimensions in particular are associated with problem drinking. Studies on the relationship between acculturative stress and drinking have resulted in inconsistent findings as some have failed to find an association relationship (Caetano & Medina-Mora, 1988, Zemore, 2007), others have identified a positive relationship (Hines & Caetano, 1998, Zemore 2007), and some others have reported a negative relationship (Neff, Hoppe, & Perea, 1987; Zemore, 2007). Nonetheless, findings from qualitative studies on drinking among Latino suggest that immigration stress and many of its dimensions could be associated with increased problem drinking. In one of these studies (Lee, Lopez, Colby, Tejada, Garcia-Coll, & Smith; 2010), participants reported nostalgia and isolation to be among the reasons for drinking. In another study, immigrant Latino males included being unable to visit family, feelings of discrimination, and harsh work environments as the primary motivators for why they turned to alcohol (Rhodes et al., 2009). Consequently, the present study sought to examine whether there is a positive relationship between immigration stress and problem-drinking among first-generation immigrant Latinos.

Exposure to Traumatic Life Experiences. When studying the immigrant Latino population, one should also consider the influence that exposure to traumatic life experiences may have on immigration stress and problematic drinking. Exposure to traumatic life experiences refers to experiencing or witnessing exceedingly distressing experiences, often regarded as extreme and that involve some psychological or physical harm such as: a natural disaster, a serious accident, a life-threatening medical condition, war, physical and/or sexual

45

violence, etc. (Stamm et al., 1996). In the general population, exposure to traumatic life experiences has been linked with various negative outcomes, such as poor physical health (Holman, Silver, & Waitzkin; 1999), depression (Volpicelli, Balarman, Hahn, Wallace, & Bux, 1999), anxiety, somatic disorder, and phobias, (Holman et al., 1999). Problem drinking is also among the negative outcomes that have been associated with exposure to trauma in the general population (Stewart, 1996). People who have experienced a traumatic event report resorting to drinking as a way to avoid feelings of irritability, anxiety, depression, and other distressing feelings (Volpicelli et al., 1999).

Latino immigrants and immigrants in general, are likely to experience traumatic events either from their country of origin, during the migration process, or post-migration (Cervantes, Salgado de Snyder, & Padilla, 1986; Holman et al., 1999; Slone, et al. 2006). Among Latinos, many Central American immigrants have experienced civil wars in their countries of origin and political persecution and torture (Cervantes et al., 1886, Holman et al., 1999). Some women report being raped, physically abused, or detained during their immigration journey (Suarez-Orozco, 2000). Unsurprisingly, statistics on Latinos show that in comparison to U.S. born non-Latino Whites, Central American immigrants are 76% more likely to report having experienced a traumatic life event (Holman et al., 1999). In a study examining the exposure to political violence in primary care Latino patients, results found that 54% of 638 participants had experienced trauma related to political violence (Eisenman, Gelberg, Liu, & Shapiro, 2003). Furthermore, even when Latino immigrants have not experienced a traumatic life event, they may have witnessed a close significant family member or friend experiencing them (Suarez-Orozco, 2000). Given that immigrant Latinos, particularly from Central America, are likely to have been exposed to some traumatic life experience and that these experiences have been linked

to problem drinking in other populations, the present study examined and controlled for the exposure to traumatic life experiences in its analysis of the relationship between immigration stress and problem drinking.

Stress in the Couple's Context: The Systemic-Transactional Model

As of today, there is no published study either on acculturative or immigration stress or exposure to traumatic life experiences, either quantitative or qualitative, which has explored problem drinking, immigration stress and exposure to traumatic life experiences within the context of the couple's relationship in the Latino immigrant population. For the most part, factors affecting drinking have been studied at the individual level, often only focusing on the Latino male population (Kim-Godwin & Fox, 2009). When the immediate relational context of the couple is considered, it has been mostly in relation to inter-partner violence (Caetano et al., 2000a; Caetano et al., 2007 Kim-Godwin & Fox, 2009) and without examining actor and partner effects. Nonetheless, models of couples' stress, such as the Transactional Stress Model (STM; Bodenmann, 1997), argue that partners' stress processes are associated and that one partner's stress always becomes the other partner's stress as well.

Bodenmann's systemic-transactional stress model (STM; 1997) is an adaptation of Lazarus and Folkman's transactional stress theory (1984) to the context of the couple's relationship. According to Lazarus and Folkman (1984), an individual experiences stress when he or she perceives that the demands of a situation exceed the resources that he or she has available to meet such demands. Couple stress theories, such as STM, explain the interdependence between partners' stress processes. According to STM, one partner's stress and coping cannot be understood without considering the other partner's stress and coping for two reasons. First, there is an interdependence between both partners' stress levels. In fact, various

47

studies on stress in the context of couple's relationships have shown interdependence in both

partners' stress levels (e.g., Falconier, 2010; Falconier, Nussbeck, Bodenmann, Schneider, &

Bradbury, in press). The positive relation between the two partners' stress levels has received

various explanations (for a review see Westman & Vinokur, 1998). On one hand, the positive

relation between partners' stress levels has been attributed to the fact that partners may share the

context in which they experience stress, with some stressors being common ones. On the other

hand, the positive association has been viewed as the result of a direct transmission of stress

from one partner to another that is above and beyond the effects of a common stressor.

The second reason to consider both partners' stress levels is that according to STM, an

individual responds or copes not only with his or her own stress level, but also his or her

partner's stress level. It has been found that one partner's stress is related not only to his or her

own behavioral and emotional changes, but also to his or her partner's behavioral and emotional

changes (e.g., Falconier & Epstein, 2010; Falconier, Nussbeck, & Bodenmann, 2013).

Therefore, from a STM perspective each partner's immigration stress may contribute to

the other partner's and partners may activate coping behaviors in response to their own stress

(actor effects) or their partner's stress (partner effects). These coping behaviors may include

drinking in excess in an attempt to reduce the tension and negative emotions associated with

stress. Also, according to STM various factors such as personality traits, moods, and past

experiences (Randall & Bodenmann, 2009), such as traumatic experience, may contribute

directly to experiencing stress. Consequently, exposure to traumatic life experiences can be seen

as contributing to both problem drinking and immigration stress. Therefore, the present sought

to examine the relationship of each partner's overall immigration stress and its different

dimensions with both his or her own problem drinking while considering the contributions of

exposure to traumatic life experiences to both his or her own immigration stress and problem drinking in first-generation immigrant Latino couples.

The Present Study

This is the first study to examine the relationship of immigration stress and its different dimensions with problem drinking in immigrant Latino couples living in the Washington DC metropolitan area, while examining and controlling for each partner's exposure to traumatic life experiences. The model tested includes the following hypotheses (see Figure 1):

Hypothesis 1: Each partner's overall immigration stress and each of its dimensions will be positively associated with their own and their partner's problem drinking.

Hypothesis 2: Each partner's exposure to traumatic life experiences will be positively related to their own problem drinking and immigration stress (overall and each dimension).

Hypothesis 3: Both partners' immigration stress (overall and each dimension) will be positively associated.

Hypothesis 4: Both partners' exposure to traumatic life experiences will be positively associated.

The inclusion of exposure to traumatic life experiences allows for controlling of this factor that may influence both immigration stress and problem drinking. Similarly, the inclusion of both partners' variables within the same model allows examining for the effect of one partner's stress on problem drinking above and beyond the effects of the other partner's stress on problem drinking.

Figure 1. Conceptual Model.

Male Exposure to Traumatic Life Experiences

E

+

+

E

Male Immigration Stress

+

Male Problem Drinking

+

+

+

+

Female Immigration Stress

+

Female Problem Drinking

E

+

E

Female Exposure to Traumatic Life Experiences

+

+

→ Direct Effect

↔ Covariance

50
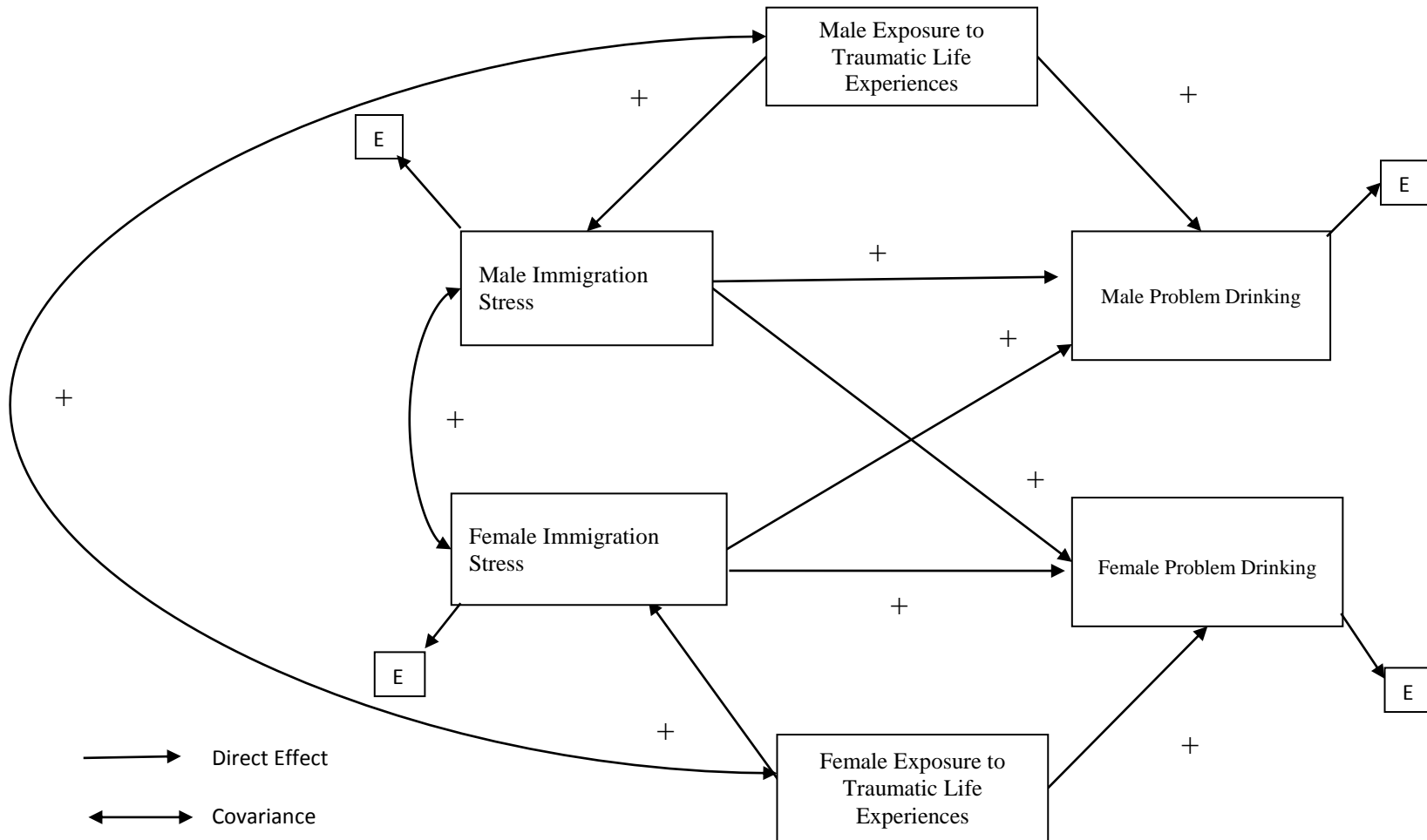
Understanding the actor and partner effects of immigration stress and exposure to traumatic life experiences on the likelihood of problem drinking in Latino couples in the U.S. might help clinicians tailor a more specific treatment for couples' experiencing alcohol related problems. Clinicians can also address and assess more specific stressors that may be related to the clients' immigration experience and being exposed to trauma. Finally, understanding how immigrant couples experience stress is important because in general "the better the partners *together* are able to cope with stress, the higher their chances for optimal marital satisfaction and stability" (Bodenmann, 2005 p. 46).

Methods

Design of the Study

This study will be analyzing secondary data that were originally collected by Dr. Mariana Falconier at Virginia Tech in 2009 for a study of stress on Latino couples' functioning. Even though the data collected on immigration stress had been analyzed in relation to dyadic coping and relationship satisfaction, the data on problem drinking and trauma-related history have not been analyzed yet.

Sample

Participants in the original study were recruited in the Washington D.C. metropolitan area. The original data set consisted of 114 self- identified immigrant Latino couples in a heterosexual relationship. Given that the present study focused on first-generation immigrant couples, ten couples were eliminated from the analyses because one of the partners had either been born in the U.S. or had immigrated into the U.S. prior to the age of 10 and therefore, he or she was less likely to experience immigration stress. The resulting sample for this study included 104 couples. Inclusion criteria for participants in the original study required being in a

committed relationship; self-identifying as Latino/a (both partners), being at least 18 years of age, and living with the current partner for at least one year.

In this sample, the average age for men was 40.64 years ($SD = 8.68$) and for women was 39.43 years ($SD = 7.87$). The average length of living in the U.S. for men was 14.27 years ($SD = 8.00$), ranging from 1 year to 35 years of residency. For women, the average length of living in the U.S. was 12.37 years ($SD = 7.43$), ranging from 1 year to 32 years of residency. On average, the length of the couples' relationship was 12.06 years ($SD = 7.69$). Couples had 1.84 ($SD = 1.22$) children younger than 21 years old living in the household. Twenty-eight couples (26.9%) reported cohabiting whereas 76 couples (73.1%) reported being married.

The sample included immigrants from various countries including El Salvador (32.7%), Peru (13.9%), Mexico (12%), Guatemala (11.1%), and other Latin American countries (30.3%). Even though this sample is not representative of the Latino population in the U.S., it is of the Latino population in the Washington D.C. metropolitan area (e.g., Montgomery County: 9.4% Mexican, 32.2% Salvadoran, 7.2% Guatemalan, 6.3% Peruvian; U.S. Census Bureau, 2009). In this sample, educational levels varied as 27.9% of men and 30.7% of women reporting "not having completed high school" whereas 21.2% of men and 24% of women reporting "graduating at least from college". Additionally, 84.6% of men and 61.5% of women reported being employed. In regards to income, the partners' combined income was as followed: $50,000 and above for 47.1% of couples, between $20,000 and $49,999 for 31.7%, and below $19,999 for 14.4%. The majority of the participants reported being Catholic (Men: 72.1%; Women: 80.8%). Around 15.3% of men and 14.4% of women reported being affiliated with other Christian religions, 1.9% of men and 1 % of women identified themselves as Jewish, and 7.7% of men and 3.8% of women did not have any religious affiliation.

Instruments

The current study used data from the demographic form and three of the self-report instruments administered in the original study. All questionnaires were originally in English, with the exception of the demographic form originally created in Spanish. The scales used in the present study were originally in English and therefore, they were translated into Spanish and then translated back into English. The two English versions were compared and the translations were adjusted accordingly.

Immigration Stress Scale. The Demands of Immigration Scale (DIS; Aroian et al., 1998) was used to measure immigration stress and its different dimensions. The original DIS includes the following subscales: Novelty, Not Feeling at Home, Loss, Discrimination, Occupation and Language. The Novelty subscale includes experiences of newness and unfamiliarity related to living in the new country (e.g., "*I am always facing new situations and circumstances*"). The Not Feeling at Home subscale lists situations where the respondent has felt alienated from the host country (e.g., "*Even though I live here, it does not feel like my country*"). The Loss subscale includes longing for places and things back in one's country of origin (e.g., *"I feel sad when I think of special places back home"*). The Discrimination subscale lists situations of discrimination, such as the respondent's perception that that he or she is being treated differently than native-born individuals (e.g., "*As an immigrant, I am treated as a second-class citizen*"). The Occupation subscale lists difficulties finding work, status demotion, and fewer opportunities for jobs (e.g., "*I have fewer career opportunities than Americans*"). The Language subscale inquires about the respondent's problems when communicating in another language (e.g., "*I have difficulty doing ordinary things because of a language barrier*"). In addition to the pre-existing scales of the DIS, two new subscales were added. The Missing

53

Family subscale was created to assess the extent to which the respondent experiences missing the family left behind in his or her country of origin (e.g., "*I wish I could speak with my family in my country more often*"). This subscale was included due to the strong orientation that Latinos have towards their family members (Falconier et al., 2013). The Legal subscale was created to assess the extent to which the respondent fears deportation, a fear that is quite common among Central American immigrants (e.g., "*I am afraid that my family or I might be deported*") living in the Washington DC metropolitan area, where the present sample was recruited. On DIS, respondents were asked to rate the frequency with which they currently experience each of the immigration stressors listed on a three-point Likert type scale, 0 = *never,* 1 = *sometimes*, 2 = *very often.* Total scores for overall immigration stress and each of the subscales were computed by adding each of the response values and then dividing the sum by the number of items that were included in the subscale or total scale for overall immigration stress. Past studies have reported the internal consistency for the original scale ranging from .91 to .94, with a test-retest reliability ranging from .89 to .92 (Aroian et al., 1998). In the present study, internal consistencies for the total scale were .93 for both men and women whereas the internal consistencies of each of the eight subscales ranged from .75 to .89 for men (except for the Novelty subscale: .65) and from .70 to .85 for women (except for the Novelty subscale: .61).

Exposure to Traumatic Life Experiences. Exposure to traumatic life experiences was assessed with the Stressful Life Experiences Screening Inventory (SLESI; Stamm et al., 1996). SLESI is a 20-item survey that was developed to assess lifetime exposure (personal experience or witnessing) to traumatic life experiences, such as death of a significant person (e.g., *"I have witnessed or experienced the death of a close friend or family member (other than my spouse or child")*, serious injury (e.g., "*I have witnessed or experienced a serious accident or injury"),*

unwanted sexual contact (e.g., *"As a child/teen I was forced to have unwanted sexual contact"*) ,

violence (*"As an adult or child, I have witnessed someone else being choked, hit, spanked, or

pushed hard enough to cause injury"*), war (*"I have been involved in combat or a war or lived in

a war affected area*), and natural disasters (*"I witnessed or experienced a natural disaster; like a

hurricane or an earthquake"*) among other traumatic life experiences. The two items of the

SLESI that might be related to traumatic situations in which the partner could be responsible for

(*"As an adult I was hit, choked, or pushed hard enough to cause injury"* and *"As an adult I was

forced to have unwanted sexual contact"*) were not considered in the present study as they might

be the result of a partner's problem drinking rather than the predictors. In the SLESI respondents

are asked whether or not they have experienced each of the traumatic life experiences listed (1 =

yes; 0 = no). A total score is obtained by adding all of the response values. Past studies have

reported good discriminant validity among the items (Margiotta, 2000; Sprang, 1999; Stamm et

al., 1996). Internal consistency is not expected as experiencing one traumatic situation is not

expected to be associated with the occurrence of other traumatic situations

     Problem Drinking. The CAGE (<u>C</u>ut down drinking, <u>A</u>nnoyance, <u>G</u>uilty, <u>E</u>ye opener,

Ewing, 1968) questionnaire was used to assess the likelihood of problem drinking. The

questionnaire was designed to screen whether there is any problem drinking, with higher scores

indicating there is a greater likelihood of problem drinking. The CAGE questionnaire consists of

four items: (1) Have you ever felt you needed to cut down on your drinking?; (2) Have people

annoyed you by criticizing your drinking?; (3) Have you felt bad or guilty about your drinking?;

(4) Have you ever had a drink first thing in the morning to steady your nerves or get rid of your

hangover (Eye Opener)? Respondents can answer either *Yes = 0* or *No = 0* to each of the items.

A total score is computed by adding the value of each response. . In this sample, 12.5% of men

and 4.8% of women had a total score of 1, 14.4% of men and 1.9% of women had a total score of 2, 11.5% of men and 2.9% of women had a total score of 3, and 5.8% of men and 1% of women had a total score of 4. The CAGE questionnaire has been validated in different setting including psychiatric, medical inpatient, and ambulatory medical patients (Kitchens, 1994). In a reliability generalization study of the CAGE questionnaire with 22 samples, the median internal consistency across studies was .74 ranging from .52 to .90 (Shields & Caruso, 2004). In the present study, the internal consistency was .75 for men and .78 for women.

Analytic Strategy

This study used secondary data that had been entered into a Statistical Package for the Social Sciences (SPSS) data file at Virginia Tech. Responses from each member of the couple were entered under the same case number but as a different variable so that the data could be eventually analyzed as couple data. The database did not contain any identifying information about participants.

T-tests for paired samples were used to assess gender differences in the main variables. Bivariate correlations among the main variables for both men and women were also calculated.

Multivariate Analysis. Path analysis using EQS 6.1 and the maximum likelihood estimation method were employed to test the conceptual model. The first model tested included overall immigration stress and then, due to sample size limitations, eight different path model analyses were conducted for each of the immigration subscales. Considering that the data were not multivariately normally distributed (Yuan, Lambert, & Fouladi's (2004) normalized coefficient = 6.87) and that 10% of the data were missing, model fit was assessed through the Yuan-Bentler scaled chi-square (χ_{YB}^2), an adjusted chi-square statistic used for non-normal and incomplete data (Yuan & Bentler, 2000). The model is rejected when the chi-square (χ_{YB}^2)

value is statistically significant as it indicates that the sample distribution and the distribution expected from the tested model are significantly different. Model fit was further evaluated with the three fit indices recommended by Hu and Bentler (1999): Bentler's Comparative Fit Index (CFI > .96), the Standardized Root Mean Square Residual (SRMR < .08), and the Root Mean Square Residual of Approximation (RMSEA < .06). Values close to the recommended cut-off values are considered to be indicative of a good model fit to the data. Due to the non-normal multivariate distribution of the data in this study the robust CFIs and RMSEAs computed by EQS were used to assess model fit. Model respecification was only considered when the model fit was not optimal and a conceptual and cultural examination of the results of the Lagrange Multiplier (LM) test suggested the incorporation of a path or covariance that was not part of the original model. LM test results suggested there was no significant relationship between problem drinking of each partner. As a result this path was not incorporated in the model.

Given the limited sample size, the effect of demographic variables on the model variables was analyzed through a Multivariate Analysis of Covariance (MANCOVA) to decide which demographic variables should be controlled for in the path model analysis. MANCOVA results indicated that age, income level, educational level, and length of relationship did not have a significant effect on any of the model variables. As a result, none of these demographic variables were included in the path analyses.

Results

Variable Characteristics

On average, men and women reported comparable levels of exposure to traumatic life experiences (Men $M = 2.10$, $SD = 2.18$; Women $M = 2.04$, $SD = 2.04$, overall immigration stress (Men $M = .84$, $SD = .42$; Women $M = .92$, $SD = .43$), and of immigration stress in each of the

specific dimensions (see Table 1). The only exception to this pattern was stress from loss, in

which women reported significantly higher levels than men did (Men M = 1.01, SD =.48;

Women M = 1.14, SD = .49, M *Difference*: -.13, t = 2.14, df = 83, p = .04). Results from the *T-*

test for paired samples indicated that men were significantly more likely to experience problem

drinking than women did (Men M = 1.13, SD = 1.14; Women M = .24, SD = .75, M *Difference*:

.89, t = 5.89, df = 90, p < .001).

Table 1

Means, Standard Deviations, and T-tests

Variables	Males (SD)	Females (SD)	Scale Range	Mean Difference	T	P
Overall Immigration Stress	.8444 (.42071)	.9195 (.42934)	0-2	-.07512	-1.596	.114
Discrimination	.8966 (.49935)	.8448 (.49744)	0-2	.05172	.770	.443
Language	.8605 (.58612)	.9549 (.57806)	0-2	-.09448	-1.500	.137
Legal	.6854 (.78473)	.6517 (.76650)	0-2	.03371	.505	.615
Loss	1.0104 (.48167)	1.1399 (.48988)	0-2	-.12946	-2.144	.035
Not at Home	.8727 (.60408)	.9476 (.57053)	0-2	-.07491	-1.035	.304
Novelty	.7340 (.45040)	.7238 (.48207)	0-2	.01017	.182	.856
Occupation	.6500 (.52819)	.7188 (.52774)	0-2	-.06875	-1.136	.259
Missing Family	1.0127 (.46668)	1.0949 (.51513)	0-2	-.08228	-1.275	.206
Problem Drinking	1.1319 (1.33507)	.2418 (.75042)	0-4	.89011	5.892	.000
Exposure to Traumatic Life Experiences	2.0989 (2.17590)	2.0440 (2.03804)	0-18	.05495	.248	.805

Note. N = 104 women and 104 men

Bivariate correlations among the variables of interest in this study are presented on Table 2. Correlations were all positive and ranged from $.21 < r < .78$ for both men and women.

Table 2

Correlations among Immigration Total Scale and Subscales, Problem Drinking, Exposure to Traumatic Life Experience

	1	2	3	4	5	6	7	8	9	10	11
1. Overall IMS	-	.75**	.76**	.63**	.70**	.73**	.77**	.76**	.78	.21	.07
2. Discrimination	.75**	-	.48**	.47**	.53**	.52**	.45**	.58**	.50**	.05	.17
3. Language	.76**	.60**	-	.40**	.39**	.48**	.67**	.56**	.56**	.20	.00
4. Legal	..63**	.39**	.46**	-	.35**	.42**	.36**	.50**	.45*	.21*	.04
5. Loss	.72**	.40**	.48**	.35**	-	.63**	.49**	.37**	.72**	.03	.32**
6. Not at Home	.75**	.54**	.60**	.27**	.59**	-	.45**	.46**	.60**	.02	.08
7. Novelty	.74**	.49**	.54**	.45**	.36**	.48**	-	.54**	.47**	-.11	.08
8. Occupation	.81**	.57**	.59**	.53**	.42**	.51**	.62**	-	.50**	.17	-.01
9. Missing Family	.78**	.46	.48**	.37**	.76**	.60**	.44**	.54**	-	.19	.06
10. Problem Drinking	.21*	.17	.11	.22*	.21	.08	.13	.09	.23*	-	-.01
11. Exposure to Traumatic Life Experience	.21*	.25*	.07	-.05	.13	.13	.23	.28**	.12	.26*	-

Note: N = 104 Males N = 104 Females, The diagonal bottom section is males, the diagonal top section is females, IMS= Immigration stress, *p < 0.05 (two-tailed). **p < 0.01 (two-tailed)

Results from Path Analyses

The path analysis results for the overall immigration stress model indicated an adequate fit of the model to the data ($\chi_{AB}^{2}(5) = 8.23$, $p = .14$; robust CFI = .99; SRMR = .07; robust RMSEA = .03 (.00, .14). Nonetheless, the association between overall immigration stress and problem drinking proposed in Hypothesis 1 was only partially supported (see Figure 2). The women's overall immigration stress was significantly related to their own problem drinking in the expected positive direction (.26) but it was not significantly related to their partner's problem drinking (.15). Nonetheless, the men's overall immigration stress was not significantly related to their own problem drinking (-.08) but it was to their female partner's problem drinking in a negative direction (-.35).

Regarding Hypothesis 2, men's exposure to traumatic life experiences was significantly positively associated with problem drinking (.26) but it was not significantly associated with their own overall immigration stress (.08). For women, results were different as exposure to traumatic life experiences was not associated with their own problem drinking (-.02) but it was significantly related to their overall immigration stress in the hypothesized positive direction (.19). The significant actor effect of exposure to traumatic life experiences on problem drinking for men it was present across all the models tested in this study. In other words, this significant positive association was present above and beyond the actor or partner effects of any of the specific dimensions of immigration stress on problem drinking.

Sobel tests indicated that there were no significant indirect effects of either partner's exposure to traumatic life experiences on either partner's likelihood of problem drinking (M Exposure to Traumatic Life Experiences on M Problem Drinking: -.01 and on F Problem Drinking: -.03; F Exposure to Traumatic Life Experiences on M Problem Drinking: .03 and on F

Problem Drinking: .05). The overall immigration stress model explained only 8% of the men's and 9% of the women's variance in the likelihood of problem drinking. Exposure to traumatic life experience explained only 4% in women's and 1% in men's overall immigration stress.

Figure 2. Structural and Measurement model: Standardized results.
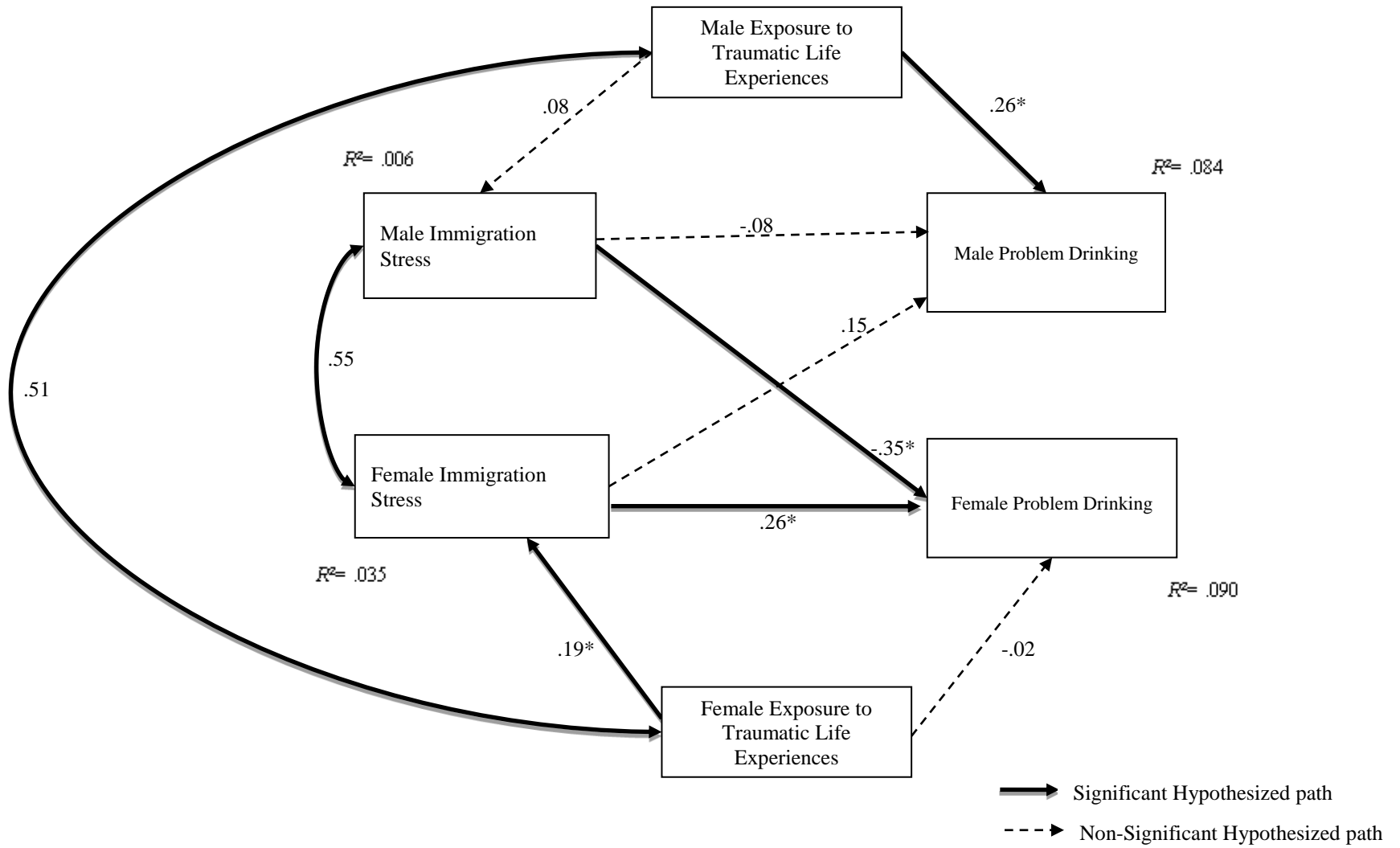
Path analyses, including each dimension of immigration stress at a time, indicated that only some of those dimensions were significantly related to problem drinking and exposure to traumatic life experiences. The model that included the novelty dimension fit the data adequately (χ_{AB}^2 (5) = 10.64, p = .06; robust CFI = .95; SRMR = .07; robust RMSEA = .07 (.00, .17). In this model the men's novelty stress was not significantly related to their own problem drinking (-.05) but it was significantly and negatively related to their female partners' problem drinking (-.28). In addition, the men's exposure to traumatic life experiences had a significant, positive association on their own novelty stress (.18). For women, her novelty stress was related neither to the men's problem drinking (-.05) or their own (-.02) and there was only a trend toward significance in the association between their novelty stress and their exposure to traumatic life experiences (.12).

The not feeling at home stress model fit the data adequately as well χ_{AB}^2 (5) = 9.46, p = .09; robust CFI = .93; SRMR = .07; robust RMSEA = .07 (.00, .17). The men's not feeling at home stress was associated neither with their own problem drinking (.00) nor with their exposure to traumatic life experiences (.08). Unlike overall immigration stress, the women's stress from not feeling at home was significantly and positively associated with their male partners' problem drinking (.19). Nonetheless, the women's not feeling at home stress was not significantly related to their own problem drinking (.00) or her exposure to traumatic life experiences (.03). The men's not feeling at home stress did not have any partner effect on the women's problem drinking (.00).

The model, including loss stress, did not fit the data optimally χ_{AB}^2 (5) = 11.86, p = .04; robust CFI = .89; SRMR = .08; robust RMSEA = .10 (.00, .149). A conceptual examination of the results from the LM test led to a respecification of the model by adding a path from the

woman's exposure to trauma to the man's loss stress. This model fit the data well $\chi_{AB}^2 (4) =$ 7.40, $p = .12$; robust CFI = .98; SRMR = .06; robust RMSEA = .05 (.00, .16) and significantly better that the original loss stress model ($\Delta_{AB} = 4.46$ (1), $p < .05$). There was a trend toward a significant relationship between the men's loss stress and both their own problem drinking (.17) and their partners' problem drinking (.15). The women's stress from loss was not significantly related to either partner's problem drinking (Men: -.02; Women: .03). The women's exposure to traumatic life experiences was significantly and positively related to each partner's loss stress (Men: .31; Women: .33) but the men's exposure to traumatic life experiences was not significantly associated with their loss stress.

The discrimination stress model fit the data adequately $\chi_{AB}^2 (5) = 9.60$, $p = .09$; robust CFI = .93; SRMR = .07; robust RMSEA = .07 (.00, .17). Neither partner's discrimination stress was affected by their exposure to traumatic life experiences (Men: .05; Women: .02) and neither partner's problem drinking was affected by the women's discrimination stress (Men: .11 Women: .10). Notwithstanding, there was a trend toward statistical significance in the paths from the men's discrimination stress toward their own (.15) and their partners' (.15) problem drinking.

The path analysis of the model including stress from missing family also indicated that this model fit the data optimally $\chi_{AB}^2 (5) = 9.92$, $p = .08$; robust CFI = .93; SRMR = .07; robust RMSEA = .08 (.00, .17). The women's stress from missing family was positively and significantly related to their problem drinking (.21) and there was a trend toward a significant relationship with the male partner's problem drinking (.12). There was a significant positive trend from the men's missing family stress toward each partner's drinking pattern (Men: .15;

Women: .13). Exposure to traumatic life experiences was not significantly related to missing

family stress for either men (.10) or women (.04).

Regarding occupation stress, results indicated that the model fit the data adequately χ_{AB}^2

(5) = 9.24, p = .10; robust CFI = .95; SRMR = .07; robust RMSEA = .07 (.00, .17). The men's

occupation stress was not significantly associated with their own problem drinking (-.05), it was

significantly related to the women's problem drinking in a negative direction (.-.30). The

women's occupation stress was significantly positively related to their problem drinking (.35),

but it was not associated with their male partners' problem drinking (-.04). Exposure to

traumatic life experiences was significantly and positively associated with occupation stress for

men (.19), but it was not for women (.02).

The language stress model also fit the data optimally χ_{AB}^2 (5) = 9.60, p = .08; robust CFI

= .96; SRMR = .07; robust RMSEA = .07 (.00, .17). Neither partner's exposure to traumatic life

experiences was significantly related to their own language stress (Men: .00; Women: .08). The

men's language stress was not significantly associated with either their own (.09) or their

partner's problem drinking (-.07). The women's language stress was significantly and positively

related to their own problem drinking (.18), but not their male partners' (.05).

The legal stress model fit the data optimally as well χ_{AB}^2 (5) =10.64, p = .06; robust CFI

= .95; SRMR = .07; robust RMSEA = .07 (.00, .17). The women's legal stress was unrelated

with either partner's problem drinking (Men: -.05; Women: -.02), whereas the men's legal stress

was significantly but negatively associated with women's problem drinking (-.28), but it was not

significantly related to their own problem drinking (-.05). The men's exposure to trauma was

significantly and positively associated with their own legal stress (.18). There was also a trend

toward a significant effect of the women's exposure to traumatic life experiences on their own stress from legal issues (.12).

Hypothesis 3 was fully supported by the data as both partners' overall immigration stress and stress in each of its dimensions was positively and significantly related: overall immigration stress (.55), novelty (.35), not at home (.35), loss (.34), discrimination (.34), missing family (.51), language (.51), occupation (.43), and legal (.35) stress. Similarly, Hypothesis 4 was supported by the data as both partners' exposure to traumatic life experiences was found to be significantly and positively related (.51).

Table 3

Chi-square Test Results, Fit Indices, and R^2 for Overall Immigration Stress and Specific Dimensions of Immigration Stress Models

Model	Overall Immigration Stress	Novelty Stress	Not at Home Stress	Loss Stress	Discrim. Stress	Missing Family Stress	Occup. Stress	Language Stress	Legal Stress
$\chi_{AB}{}^2$ (df)	8.23 (5)	10.64 (5)	9.46 (5)	7.40 (4)	9.60 (5)	9.92 (5)	9.24 (5)	9.60 (5)	10.64 (5)
	$p = .14$	$p = .06$	$p = .09$	$p = .12$	$p = .09$	$p = .08$	$p = .10$	$p = .08$	$p = .06$
Robust CFI	.99	.95	.93	.98	.93	.93	.95	.96	.95
SRMR	.07	.07	.07	.06	.07	.07	.07	.07	.07
Robust RMSEA	.03	.07	.07	.05	.07	.08	.07	.07	.07
	(.00, .14)	(.00, .17)	(.00, .17)	(.00, .16)	(.00, .17)	(.00, .17)	(.00, .17)	(.00, .17)	(.00, .17)
R^2									
M Problem Drinking	.08	.08	.10	.10	.09	.12	.08	.09	.08
F Problem Drinking	.09	.08	.00	.02	.05	.08	.12	.02	.08
M Immigration Stress	.01	.03	.01	.08	.00	.01	.04	.00	.03
F Immigration Stress	.04	.01	.00	.11	.00	.00	.00	.01	.01

Note. N = 104 women and 104 men, Discrim. = Discrimination, Occup. = Occupation

68

Discussion

This study sought to analyze the actor and partner effects of immigration stress and each of its eight different dimensions on the likelihood of problem drinking in first-generation immigrant Latino couples above and beyond the effects of exposure to traumatic life experiences. The discussion of the results of the present study needs to take into consideration the fact that men and women partners in this study did not differ significantly in overall immigration stress and exposure to traumatic life experiences. With the exception of women's higher reports of loss stress, there were no significant gender differences in any of the dimensions of immigration stress. Nevertheless, Latino males in this sample were significantly more likely to experience problem drinking than their female counterparts, which is consistent with findings from other studies on drinking in the Latino population (Grant et al., 2004, Zemore, 2007; Slone et al., 2006; Lara et al., 2005). In the general population, men tend to drinking more than women as well (Center of Disease Control and Prevention, 2013). Additionally, Latina females tend to have higher rates of abstaining from alcohol than other ethnicities (Galvan & Caetano, 2003). This may be attributed to alcohol consumption being more socially acceptable for males than for females in their Latino countries of origin.

Regarding Latino immigrant men's likelihood of problem drinking, neither partner's overall immigration stress seemed to have a significant effect. However, when examining each specific dimension of immigration stress, trends towards significance suggested that the men's stress from more emotional stressors, such as feeling a sense of loss, discrimination, and missing family (only trends) and the women's stress from not feeling at home could contribute to Latino men's likelihood of experiencing problem drinking.

In contrast to men, Latino immigrant women's likelihood of experiencing problem drinking was significantly related to their own overall immigration stress and unrelated to their exposure to traumatic life experiences. Moreover, an examination of the actor effects for each of the different dimensions of immigration stress on women's problem drinking indicated that such positive effects, in addition to stress from missing family, were only true for the stress derived from language and occupational challenges. In other words, women's likelihood of experiencing problem drinking increased in the presence of stress from non-emotional, more practical aspects of the immigration experience with the exception of missing family. This seems to be consistent with the finding that in this sample Latinas' exposure to traumatic life experiences, which, as noted earlier, has an emotional impact, did not have an effect on their drinking.

When all findings are taken together gender differences seem to be consistent. While problem drinking is related to more emotional aspects of the immigration experience and to exposure to traumatic life experiences for men; women are more likely to experience problem drinking in the presence of less emotional, more practical, acculturation related aspects of immigration stress. Stress derived from missing one's family, facing discrimination, not feeling at home, or experiencing a sense of loss might require emotion-focused coping strategies, such as seeking support, relaxing, or positive self-talk. By contrast, stress arising from more practical, less-emotional aspects of the immigration experience, such as dealing with language barriers, occupational challenges, or learning new things might require problem-focused coping strategies, such as seeking information, brainstorming solutions, or seeking practical advice. Research has shown that women tend to rely more on emotion-focused coping strategies than men do (Cooper et al., 1992; Ptacek, Smith & Zanas, 2006) and that individuals with ineffective emotion-focused coping mechanisms are more likely to exhibit abusive alcohol patterns (Cooper et al., 1988).

Therefore, our findings might be suggesting that when facing immigration stressors that might require more effective emotion-focused coping, men may cope through drinking since their emotion-focused strategies might be more limited. Unlike men, women may cope by drinking when experiencing stress from more practical, acculturation related aspects of immigration since they tend to rely more on emotion-focused rather than on the problem-focused coping strategies.

Results from this study also indicated that men's immigration stress has a negative partner effect on women's problem drinking. It is likely that women are more susceptible to experience their partners' stress than it is for men to experience their partners' stress. These findings would be consistent with STM, which state that you cannot consider one partners' stress and coping without considering the other partners' stress or coping (1997). Additionally, past research suggests that women are more likely than men to recognize events as particularly stressful when such events pertain to family, and that women tend to internalize the stress experienced by others in their environment as their own (Matud, 2004). In other words, it is possible that women may be sensitive to their partner's immigration stress since they are affected by the stress of those around them and are likely to be more emotionally involved in social and family affairs than men (Kessler & McLeod, 1984; Matud, 2004). This may be particularly true among Latino women that are raised according to the ideals of *marianism* (Falicov, 1998). In Latino cultures, Virgin Mary embodies the values and behaviors that women should follow, which includes being a devoted mother, wife, and daughter and self-sacrificing for others' well-being. This might explain why when Latino women perceive their partners experiencing immigration stress, they may be less likely to exhibit problem drinking as they need to be available and of support for their stressed partners.

The findings regarding the lack of effects of trauma on Latina immigrant women's drinking may suggest gender differences on how males and females respond to traumatic life experiences. These findings are consistent with research showing that men who experience trauma from disasters were more likely to engage in drinking than women; conversely, females were more prone to somatic symptoms, such as depression and anxiety (Solomon, Smith, Robin, & Fischbach, 2006). It may be that negative outcomes related to trauma in males manifested through problem drinking, and manifested for women via other negative ways like depression.

It is also important to note that the positive associations found between partners on the same variable suggest that either both partners face common stressors, or that there is a crossover effect (Bodenmann, 2005; Bodenmann et al., 2009). The presence of these positive associations confirm the need to include both partners variables within the same model when analyzing dyadic data in order to examine and control for partners' interdependence.

Limitations

The small sample size of this study reduced the power of the statistical analyses and prevented us from including examining all dimensions of immigration stress within the same model. It is possible that with larger sample size some of the trends found in this study might become significant associations. The limited samples size also prevented us from conducting full structural equation modeling and control for measurement error. Additionally, the sample in this study exhibited relatively low levels of problem drinking, which might not be representative of drinking patterns in the general population of Latino immigrants.

It is also important to remember that these findings cannot be generalized to all the Latino population as the sample is representative of the Latino immigrant population of the Washington DC area but it is not of the Latino immigrant population of the U.S. Additionally,

the sample average length in the U.S. was relatively high, this finding are not representative of newly immigrant Latinos who may experience immigration stress differently.

The use of self-report methods might have introduced a social desirability bias leading participants to underreport their actual frequency of drinking. This may be particularly true for women for whom alcohol consumption is highly disfavored. In addition, the use of cross-sectional data does not allow for a conclusion to be drawn regarding the causal relationship of the variables.

A number of limitations surround the use of the CAGE questionnaire. A common criticism of the CAGE is that it is not gender-sensitive, and females who are problem drinkers are less likely to screen positive than their male counterparts (Dhalla & Kopec, 2007). Also, it identifies alcohol-dependent persons, but may not differentiate binge drinkers. Additionally, CAGE measures the likelihood of problem drinking, but it does not measure alcohol consumption or frequency of drinking. Finally, the CAGE questionnaire asks about "lifetime" experience, rather than current drinking; thus, a person who no longer drinks may screen positive, unless the intereviewer directs the questions to focus on a more current timeframe (Bradley, Kivlahan, Bush, McDonell, & Fihn, 2006).

Clinical and Research Implications

This study has significant implications for clinicians and researchers working with the Latino population. Problem drinking and trauma are not uncommon among this population. Efforts should be made to assess for indicators of problem drinking and trauma when working with couples. The findings suggest that efforts to prevent and treat problem drinking should address the issue in a more systemic approach -- like in the couples' context -- and not only address the problem drinking at the individual level. Findings also indicate that clinicians should

assess and consider the impact of specific aspects of immigration stress on each partner's coping and drinking. Clinicians might assist Latino immigrant partners in developing effective ways of coping individually and together as a couple with the various dimensions of immigration stress so that the likelihood of excessive drinking is minimized. Additionally, these findings can guide the development of prevention programs by, identifying risk factors and signs leading to problem drinking.

Our findings also have some important implications for further research. Further research should be conducted with larger and more representative samples of the Latino population in the U.S. and collecting data longitudinally. CAGE only measures the presence of a drinking problem and not the rate of consumption or frequency of consumption, therefore additional research should be conducted examining how each partner's immigration stress and exposure to traumatic life experiences impacts their own alcohol consumptions and partners' alcohol consumption by using a more comprehensive measure like the AUDIT (Alcohol, Use, Disorders, Identification, Test, as cited in Allen, Litten, Fertig, & Babor, 1997) developed by the World Health Organization. Additionally, it would be important to examine how coping styles may affect the immigration stress and problem drinking. This may contribute to understanding potential protective factors for both male and female populations. Finding from this study suggest that long after the individuals immigrates to the U.S. they continue to experience stress from immigration. Additional research should be conducted to explore the relationship between immigration stress, exposure to traumatic life experience, and problem drinking among different generations of Latinos or among different types of immigrants to assess for differences.

Conclusions

This study is among the first to examine immigration stress, exposure to traumatic life experiences, and problem drinking in Latino immigrant couples. Despite the limitations to this study, there are numerous merits. The study augments the current available research from a systemic approach, addressing many issues that are typically seen at the individual level and not at the dyadic level, such as drinking and coping with stress. This study adds a multi-cultural perspective on these issues; few studies have studied how Latino immigrant couples experience stress. Further research on partners' immigration stress and coping efforts in regards to drinking can help researchers develop preventative treatment and interventions for couples experiencing problem drinking and other stressors, like being exposed to trauma.

References

Alegria, M., Mulvaney-Day, N., Torres, M., Polo, A., Cao, Z., & Canino, G. (2007). Prevalence
of psychiatric disorders across Latino subgroups in the United States. *American Journal
of Public Health*, *97*(1), 68-75. doi: 10.2105/AJPH.2006.087205

Allen, J. P., Litten, R. Z., Fertig, J. B., & Babor, T. (1997). A review of research on the Alcohol
Use Disorders Identification Test (AUDIT). *Alcoholism: Clinical and Experimental
Research, 21*(4), 613-619. doi:10.1111/j.1530-0277.1997.tb03811.x

Armeli, S., Carney, M. A., Tennen, H., Affleck, G., & O'Neil, T. (2000). Stress and alcohol use:
A daily process examination of the stressor–vulnerability model. *Journal of Personality
and Social Psychology*, *78*(5), 979. doi: 10.1037/0022-3514.78.5.979

Arciniega, L. T., Arroyo, J. A., Miller, W. R., & Tonigan, J. S. (1996). Alcohol, drug use and
consequences among Hispanics seeking treatment for alcohol-related problems. *Journal
of Studies on Alcohol and Drugs*, *57*(6), 613.

Aroian, K. J., Kaskiri, E. A., & Templin, T. N. (2008). Psychometric evaluation of the Arabic
language version of the Demands of Immigration Scale. *International Journal of
Testing*, *8*(1), 2-13. doi:10.1080/15305050701808490

Aroian, K. J., Norris, A. E.,Tran, T. V.,& Schappler-Morris, N. (1998).Development and
psychometric evaluation of the Demands of Immigration Scale. *Journal of Nursing
Measurement*, 6, 175–194.

Ayer, L. A., Harder, V. S., Rose, G. L., & Helzer, J. E. (2011). Drinking and stress: an
examination of sex and stressor differences using IVR-based daily data. *Drug and
alcohol dependence*, *115*(3), 205-212. http://dx.doi.org/10.1016/j.drugalcdep.2010.10.022

Berry, J. W. (1990). Psychology of acculturation. In J. J. Berman (Ed.), *Current theory and research in motivation, Vol. 37. Nebraska Symposium on Motivation, 1989: Cross-cultural perspectives* (pp. 201-234). Lincoln, NE: University of Nebraska Press.

Berry J.W. (1997) Immigration, acculturation, and adaptation. *Applied Psychology*: An International Review; 46: 5–34.

Berry, J. W. (2006). Acculturative stress. In *Handbook of multicultural perspectives on stress and coping* (pp. 287-298). Springer US.

Bodenmann, G. (1995). A systemic-transactional conceptualization of stress and coping in couples. *Swiss Journal of Psychology/Schweizerische Zeitschrift für Psychologie/Revue Suisse de Psychologie*.

Bodenmann, G. (1997). The influence of stress and coping on close relationships: A two-year longitudinal study. *Swiss Journal of Psychology/Schweizerische Zeitschrift für Psychologie/Revue Suisse de Psychologie*.

Bodenmann, G. (2005). Dyadic Coping and Its Significance for Marital Functioning. In T. A. Revenson, K. Kayser, & G. Bodenmann (Eds.), *Decade of behavior. Couples coping with stress: Emerging perspectives on dyadic coping* (pp. 33-49). doi:10.1037/11031-002

Boscarino, J. A., Adams, R. E., & Galea, S. (2006). Alcohol use in New York after the terrorist attacks: a study of the effects of psychological trauma on drinking behavior. *Addictive Behaviors*, *31*(4), 606-621. http://dx.doi.org/10.1016/j.addbeh.2005.05.035

Bradley, K. A., Kivlahan, D. R., Bush, K. R., McDonell, M. B., & Fihn, S. D. (2006). Variations on the CAGE alcohol screening questionnaire: strengths and limitations in VA general medical patients. *Alcoholism: Clinical and Experimental Research*, *25*(10), 1472-1478. doi: 10.1111/j.1530-0277.2001.tb02149.x

Breslin, F. C., O'Keeffe, M. K., Burrell, L., Ratliff-Crain, J., & Baum, A. (1995). The effects of

    stress and coping on daily alcohol use in women. *Addictive Behaviors*, *20*(2), 141-147.

    http://dx.doi.org/10.1016/0306-4603(94)00055-7

Byrne, B. M. (2006). *Structural equation modeling with EQS.* New Jersey: LEA.

Caetano, R., & Clark, C. L. (2000). Hispanics, Blacks and Whites driving under the influence of

    alcohol: Results from the 1995 National Alcohol Survey. *Accident Analysis &*

    Prevention, *32*(1), 57-64. http://dx.doi.org/10.1016/S0001-4575(99)00049-4

Caetano, R., Cunradi, C. B., Schafer, J., & Clark, C. L. (2000a). Intimate partner violence and

    drinking patterns among White, Black, and Hispanic couples in the US. *Journal of*

    substance abuse, *11*(2), 123-138. http://dx.doi.org/10.1016/S0899-3289(00)00015-8

Caetano, R., & Medina-Mora, M. E. (1988). Acculturation and drinking among people of

    Mexican descent in Mexico and the United States. *Journal of Studies on Alcohol, 49*(5),

    462-471.

Caetano, R., Ramisetty-Mikler, S., Vaeth, P. A. C., & Harris, T. R. (2007). Acculturation stress,

    drinking, and intimate partner violence among Hispanic couples in the US. *Journal of*

    interpersonal violence, *22*(11), 1431-1447. doi: 10.1177/0886260507305568

Caetano, R., Schafer, J., Clark, C. L., Cunradi, C. B., & Raspberry, K. (2000b). Intimate partner

    violence, acculturation, and alcohol consumption among Hispanic couples in the United

    States. *Journal of Interpersonal Violence*, *15*(1), 30-45. doi:

    10.1177/088626000015001003

Caetano, R., Schafer, J., & Cunradi, C. B. (2001). Alcohol-related intimate partner violence

    among White, Black, and Hispanic couples in the United States. *Alcohol Research and*

    Health, *25*(1), 58-65.

Cavazos-Rehg, P. A., Zayas, L. H., & Spitznagel, E. L. (2007). Legal status, emotional well-
being and subjective health status of Latino immigrants. *Journal of the National Medical
Association*, *99*(10), 1126.

Centers for Disease Control and Prevention. (2013). *Fact sheets - excessive alcohol use and risks
to men's health.* Retrieved from http://www.cdc.gov/alcohol/fact-sheets/mens-health.htm

Cervantes, R. C., Salgado de Snyder, V. N., Padilla, A. M. (1989). Posttraumatic stress in
immigrants from Central America and Mexico. *Hospital and Community Psychiatry,
40*(6), 615-619.

Cole, G., Tucker, L., & Friedman, G. M. (1990). Relationships among measures of alcohol
drinking behavior, life-events and perceived stress. *Psychological Reports*, *67*(2), 587-
591.

Colder, C. R. (2001). Life stress, physiological and subjective indexes of negative emotionality,
and coping reasons for drinking: Is there evidence for a self-medication model of alcohol
use?. *Psychology of Addictive Behaviors*, *15*(3), 237. doi: 10.1037/0893-164X.15.3.237

Corbin, W. R., Vaughan, E. L., & Fromme, K. (2008). Ethnic differences and the closing of the
sex gap in alcohol use among college-bound students. *Psychology of Addictive
Behaviors: Journal of the Society of Psychologists in Addictive Behaviors*, *22*(2), 240–8.
doi:10.1037/0893-164X.22.2.240

Cooper, M. L., Russell, M., & George, W. H. (1988). Coping, expectancies, and alcohol abuse: a
test of social learning formulations. *Journal of abnormal psychology*, *97*(2), 218–30.
Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/3385075

Cooper, M. L., Russell, M., Skinner, J. B., Frone, M. R., & Mudar, P. (1992). Stress and alcohol
use: Moderating effects of gender, coping, and alcohol expectancies. *Journal of

Abnormal Psychology, 101(1), 139-152. doi:10.1037/0021-843X.101.1.139

Dawson, D. A., Grant, B. F., & Ruan, W. J. (2005). The association between stress and drinking: modifying effects of gender and vulnerability. *Alcohol and alcoholism*, *40*(5), 453-460. doi: 10.1093/alcalc/agh176

Dhalla, S., & Kopec, J. A. (2007). The CAGE questionnaire for alcohol misuse: a review of reliability and validity studies. *Clinical & Investigative Medicine*,*30*(1), 33-41.

Eisenman, D. P., Gelberg, L., Liu, H., & Shapiro, M. F. (2003). Mental health and health-related quality of life among adult Latino primary care patients living in the United States with previous exposure to political violence. *JAMA: The Journal of the American Medical Association*, *290*(5), 627-634. doi:10.1001/jama.290.5.627

Ewing, J. A. (1984). Detecting alcoholism. The CAGE questionnaire. *JAMA: the journal of the American Medical Association*, *252*(14), 1905.

Falconier, M. K., & Epstein, N. B. (2010). Relationship satisfaction in Argentinean couples under economic strain: Gender differences in a dyadic stress model. *Journal of Social and Personal Relationships*, *27*(6), 781-799.

Falconier, M.K., Nussbeck, F., & Bodenmann, G. (2013). Immigration Stress and Relationship Satisfaction in Latino Couples: The Role of Dyadic Coping. *Journal of Social and Clinical Psychology*: *32*(8), 813-843. doi: 10.1521/jscp.2013.32.8.813

Falconier, M. K., Nussbeck, F., Bodenmann, G., Schneider, H., & Bradbury, T. N. (in press). Stress from daily hassles in couples: Its effects on intra-dyadic stress, relationship satisfaction, and physical and psychological well-being. *Journal of Marital and Family Therapy.*

Falicov, C. J. (1998). *Latinos families in therapy: A guide to multicultural practice.* New York:

Guilford Press.

Finch, B. K., & Vega, W. A. (2003). Acculturation stress, social support, and self-rated health among Latinos in California. *Journal of Immigrant Health*, *5*(3), 109-117. doi: 10.1023/A:1023987717921

Galvan, F. H., & Caetano, R. (2003). Alcohol use and related problems among ethnic minorities in the United States. *Alcohol research & health : the journal of the National Institute on Alcohol Abuse and Alcoholism*, *27*(1), 87–94. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/15301403

Grant, B. F., Dawson, D. A., Stinson, F. S., Chou, S. P., Dufour, M. C., & Pickering, R. P. (2004). The 12-month prevalence and trends in DSM-IV alcohol abuse and dependence: United States, 1991–1992 and 2001–2002. *Drug and alcohol dependence*, *74*(3), 223-234. http://dx.doi.org/10.1016/j.drugalcdep.2004.02.004

Greeley, J., & Oei, T. (1999). Alcohol and tension reduction. *Psychological theories of drinking and alcoholism*, *2*, 14-53.

Hines, A. M., & Caetano, R. (1998). Alcohol and AIDS-related sexual behavior among Hispanics: acculturation and gender differences. *AIDS Education and Prevention*.

Holman, E. A., Silver, R. C., & Waitzkin, H. (1999). Traumatic life events in primary care patients: a study in an ethnically diverse sample. *Archives of Family Medicine*, *9*(9), 802-810.

Hovey, J. D. (2000). Acculturative stress, depression, and suicidal ideation in Mexican immigrants. *Cultural Diversity and Ethnic Minority Psychology*, *6*(2), 134. doi: 10.1037//1099-9809.6.2.134.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis:

Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. doi:10.1080/10705519909540118

Hussong, A. M. (2003). Further refining the stress-coping model of alcohol involvement. *Addictive behaviors*, *28*(8), 1515-1522. http://dx.doi.org/10.1016/S0306-4603(03)00072-8

Johns, A. L., Newcomb, M. D., Johnson, M. D., & Bradbury, T. N. (2007). Alcohol-related problems, anger, and marital satisfaction in monoethnic Latino, biethnic Latino, and European American newlywed couples. *Journal of Social and Personal Relationships*, *24*(2), 255-275. doi: 10.1177/0265407507075413

Karriker-Jaffe, K. J., & Zemore, S. E. (2009). Associations between acculturation and alcohol consumption of Latino men in the United States. *Journal of studies on alcohol and drugs*, *70*(1), 27.

Kashy, D. A., & Kenny, D. A. (1999). The analysis of data from dyads and groups. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social psychology*. New York: Cambridge University Press.

Kaysen, D., Dillworth, T. M., Simpson, T., Waldrop, A., Larimer, M. E., & Resick, P. A. (2007). Domestic violence and alcohol use: Trauma-related symptoms and motives for drinking. *Addictive Behaviors*, *32*(6), 1272-1283. http://dx.doi.org/10.1016/j.addbeh.2006.09.007

Kessler, R. C., & McLeod, J. D. (1984). Sex differences in vulnerability to undesirable life events. *American sociological review*, 620-631.

Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey

Replication. *Archives of general psychiatry*, *62*(6), 617. doi:10.1001/archpsyc.62.6.617

Kitchens, J. M. (1994). Does this patient have an alcohol problem?. *JAMA: the journal of the American Medical Association*, *272*(22), 1782-1787. doi:10.1001/jama.1994.03520220076034

Kim-Godwin, Y. S., & Fox, J. A. (2009). Gender differences in intimate partner violence and alcohol use among Latino-migrant and seasonal farmworkers in rural southeastern North Carolina. *Journal of Community Health Nursing*, *26*(3), 131-142. doi:10.1080/07370010903034474

Klevens, J. (2007). An overview of intimate partner violence among Latinos. *Violence Against Women*, *13*(2), 111-122. doi: 10.1177/1077801206296979

Lara, M., Gamboa, C., Kahramanian, M. I., Morales, L. S., & Hayes Bautista, D. E. (2005). Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. *Annu. Rev. Public Health*, *26*, 367-397. doi: 10.1146/annurev.publhealth.26.021304.144615

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company. sociopolitical context. *Annu. Rev. Public Health*, *26*, 367-397.

Ma, G. X., & Shive, S. (2000). A comparative analysis of perceived risks and substance abuse among ethnic groups. *Addictive Behaviors*, *25*(3), 361-371. http://dx.doi.org/10.1016/S0306-4603(99)00070-2

Margiotta, S. M. (2000). *Effects of 'person-under-train' incidents on locomotive engineers* (Doctoral dissertation, ProQuest Information & Learning).

Matud, M. P. (2004). Gender differences in stress and coping styles. *Personality and individual differences*, *37*(7), 1401-1415. doi:10.1016/j.paid.2004.01.010

National Institute of Health. (2013). *Alcohol and the Hispanic community.* National Institute of

Alcohol and Alcoholism. Retrieved from

http://pubs.niaaa.nih.gov/publications/HispanicFact/HispanicFact.htm

Neff, J.A., Hoppe S.K., Perea P., (1987) Acculturation and alcohol use: drinking patterns and

problems among Anglo and Mexican American male drinkers. *Hispanic Journal of*

Behavior Science, 9, 151–181.

Negy, C., Hammons, M. E., Ferrer, A. R., & Carper, T. M. (2010). The importance of addressing

acculturative stress in marital therapy with Hispanic immigrant women. *International*

Journal of Clinical and Health Psychology, *10*(1), 5-21.

Newcomb, M. D., & Bentler, P. M. (1988). Impact of adolescent drug use and social support on

problems of young adults: a longitudinal study. *Journal of abnormal psychology*, *97*(1),

64.

Nolen-Hoeksema, S. (2004). Gender differences in risk factors and consequences for alcohol use

and problems. *Clinical psychology review*, *24*(8), 981-1010.

doi:10.1016/j.cpr.2004.08.003

O'Hare, T., Shen, C., & Sherrer, M. (2010). High-risk behaviors and drinking-to-cope as

mediators of lifetime abuse and PTSD symptoms in clients with severe mental

illness. *Journal of traumatic stress*, *23*(2), 255-263. doi: 10.1002/jts.20515

Padilla, A. M., & Borrero, N. E. (2006). The effects of acculturative stress on the Hispanic

family. In *Handbook of Multicultural Perspectives on Stress and Coping* (pp. 299-317).

Springer US.

Petrakis, I. L., Gonzalez, G., Rosenheck, R., & Krystal, J. H. (2002). Comorbidity of alcoholism

and psychiatric disorders: an overview. *Alcohol Research and Health*, *26*(2), 81-89.

Randall, A. K., & Bodenmann, G. (2009). The role of stress on close relationships and

marital satisfaction. *Clinical psychology review*, *29*(2), 105-115.

http://dx.doi.org/10.1016/j.cpr.2008.10.004

Ptacek, J. T., Smith, R. E., & Zanas, J. (1992). Gender, appraisal, and coping: A longitudinal

analysis. *Journal of Personality, 60*(4), 747-770. doi:10.1111/j.1467-

6494.1992.tb00272.x

Rhodes, S. D., Hergenrather, K. C., Griffith, D. M., Yee, L. J., Zometa, C. S., Montano, J., &

Vissman, A. T. (2009). Sexual and alcohol risk behaviours of immigrant Latino men in

the South-eastern USA. *Culture, health & sexuality*, *11*(1), 17-34.

doi:10.1080/13691050802488405

Salkind, N. J. (2012). *Statistics for People who (think They) Hate Statistics: Excel 2010 Edition*.

Thousands Oak, California,: Sage.

Shields, A. L., & Caruso, J. C. (2004). A reliability induction and reliability generalization study

of the CAGE questionnaire. *Educational and Psychological Measurement*, *64*(2), 254-

270. doi: 10.1177/001316440326181

Slone, L. B., Norris, F. H., Gutiérrez Rodriguez, F., Gutiérrez Rodriguez, J. D. J., Murphy, A.

M., & Perilla, J. L. (2006). Alcohol use and misuse in urban Mexican men and women:

An epidemiologic perspective. *Drug and Alcohol Dependence*, *85*(2), 163-170.

http://dx.doi.org/10.1016/j.drugalcdep.2006.04.006

Solomon, S. D., Smith, E. M., Robins, L. N., & Fischbach, R. L. (1987). Social involvement as a

mediator of disaster-induced stress. *Journal of Applied Social Psychology, 17*(12), 1092-

1112. doi:10.1111/j.1559-1816.1987.tb02349.x

Sprang, G. (1999). Post-Disaster Stress Following the Oklahoma City Bombing An Examination
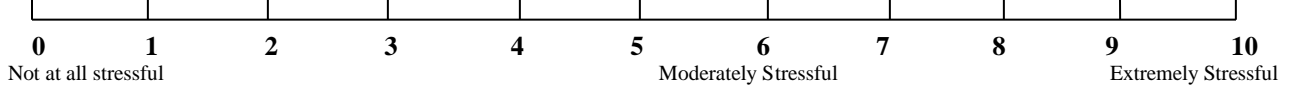
of Three Community Groups. *Journal of Interpersonal Violence*,*14*(2), 169-183. doi:

 10.1177/088626099014002005

Stamm, B. H., Rudolph, J. M. Dewane, S., Gaines, N., Gorton, K., Paul, G.,… G. Ercolano,

 M. (1996) Stressful life experiences screening. In B. H. Stamm (Ed.), *Measurement of*

 Stress, Trauma and Adaptation (pp. 317–322). Lutherville, MD: Sidran Press.

Stewart, S. H. (1996). Alcohol abuse in individuals exposed to trauma: a critical

 review. *Psychological Bulletin*, *120*(1), 83. doi: 10.1037/0033-2909.120.1.83

Suárez-Orozco, C. (2000). Identities under siege: Immigration stress and social mirroring among

 the children of immigrants. *Publications-Society for Psychological Anthropology*, *11*,

 194- 226.

Tolin, D. F., & Foa, E. B. (2006*).* Sex differences in trauma and posttraumatic stress disorder: a

 quantitative review of 25 years of research. *Psychological Bulletin, 132(6),* 959. doi:

 10.1037/0033-2909.132.6.959

U.S. Census Bureau. (2009). American factfinder American community survey. Retrieved from

 http://factfinder.census.gov/

United States Census Bureau. (2011). *The Hispanic population: 2010. Census brief 2012.*

 Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf

Vega, W. A., Kolody, B., & Valle, R. (1988). Marital strain, coping, and depression among

 Mexican-American women. *Journal of Marriage and the Family*, 391-403.

Volpicelli, J., Balaraman, G., Hahn, J., Wallace, H., & Bux, D. (1999). The role of

 uncontrollable trauma in the development of PTSD and alcohol addiction. *Alcohol*

 Research and Health, *23*(4), 256-262.

Wahl, A.-M. G., & Eitle, T. M. (2010). Gender, acculturation and alcohol use among Latina/o

adolescents: a multi-ethnic comparison. *Journal of Immigrant and Minority Health/ Center for Minority Public Health*, *12*(2), 153–65. doi:10.1007/s10903-008-9179-6

Westman, M., & Vinokur, A. D. (1998). Unraveling the relationship of distress levels within couples: Common stressors, empathic reactions, or crossover via social interaction?. *Human relations*, *51*(2), 137-156. doi: 10.1023/A:1016910118568

Yuan, K. H., & Bentler, P. M. (2000). Three likelihood-based methods for mean and covariance structure analysis with nonnormal missing data. *Sociological methodology*, *30*(1), 165-200. doi: 10.1111/0081-1750.00078

Zamboanga, B. L., Raffaelli, M., & Horton, N. J. (2006). Acculturation status and heavy alcohol use among Mexican American college students: Investigating the moderating role of gender. *Addictive Behaviors*, *31*(12), 2188-2198. http://dx.doi.org/10.1016/j.addbeh.2006.02.018

Zemore, S. E. (2007). Acculturation and alcohol among Latino adults in the United States: A comprehensive review. *Alcoholism: Clinical and Experimental Research*, 31(12), 1968-1990. doi:10.1111/j.1530-0277.2007.00532.x

Zemore, S. E., Mulia, N., Yu Ye, Borges, G., & Greenfield, T. K. (2009). Gender, acculturation, and other barriers to alcohol treatment utilization among Latinos in three National Alcohol Surveys. *Journal of substance abuse treatment*, *36*(4), 446–56. doi:10.1016/j.jsat.2008.09.005

Appendix A: Measures

Immigration Stress

Please indicate how often you experience each of the statements below. If you were not born in the US. You may indicate N/A (non-applicable) for some of them. Also indicate how stressful these situations have been for you based on the following scale.

```
|----|----|----|----|----|----|----|----|----|----|
0    1    2    3    4    5    6    7    8    9    10
```
0 = Not at all stressful 6 = Moderately Stressful 10 = Extremely Stressful

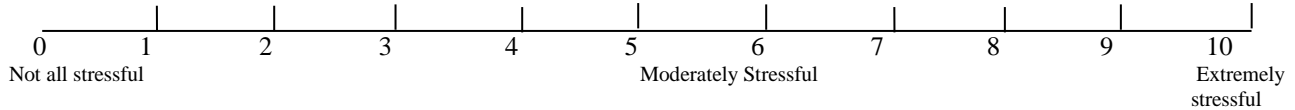|	How often do you experience the following?(Indicate with a X)				How stressful is it still for you? (include a number based on the scale above)
	Never	Some Times	Very Often	N/A	
1. I miss the people I left behind in my original country					
2. I need advice from people who are more experienced than I to know how to live here					
3. I am disadvantaged in getting a good job					
4. People in the U.S. have a hard time understanding my accent					
5. As Latino, I am treated as a second class citizen					
6. I don't feel like home					
7. When I think of my past life, I feel emotional and sentimental					
8. I must learn how certain tasks are handled, such as renting an apartment, enrolling children in school, getting medical assistance					
9. I am afraid that I my family or I might be deported					
10. My work status is lowered than what is used to be in my country of origin					
11. I have difficulty doing ordinary things because of a language barrier					
12. I feel I should visit family and friends in my country of origin more often					
13. Americans don't think I really belong to this country					
14. Even though I live here, it does not feel like my country					
15. When I think of my original country, I get teary					
16. I am always facing new situations and circumstances					
17. I miss the help and support of my family in my original country					
18. I am concerned about my own and/or my family legal status					
19. I cannot compete with American citizens for work in my field					
20. Talking in English takes a lot of effort					
21. I do not feel that this is my true home					
22. I feel sad when I think of special places back home					
23. I have to depend on other people to teach me or show me how things are done (e.g., cashing a check, enrolling child in school, etc.)					
24. I wish I could speak with my family in my country more often					
25. I have fewer career opportunities than non-Latinos					
26. Non-Latinos treat me as an outsider in the U.S.					
27. The work credentials I had in my original country are not accepted					
28. I cannot understand the TV or radio in English					
29. People with foreign accent are treated with less respect					
30. I which I could bring other members of my family to the U.S.					

Estrés por Inmigración

Por favor indique con cuánta frecuencia usted experimenta cada una de las situaciones listadas a continuación. Si usted no ha nacido en los Estados Unidos, tal vez deba marcar la opción N/A (no se aplica) para alguna de las situaciones. Por favor también indique cuánto estrés le generan estas situaciones a usted usando la siguiente escala:

0	1	2	3	4	5	6	7	8	9	10

Nada de estrés   Algo de estrés   Muchísimo estrés
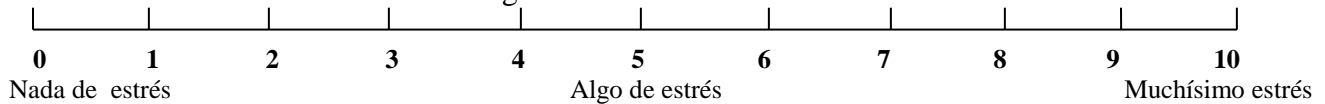
	¿Con cuánta frecuencia usted experimenta las siguientes situaciones (Indique con una cruz X)				¿Cuánto estrés le genera la situación? (incluya un número basado en al escala de arriba)
	Nunca	A veces	Muy seguido	N/A	
1.Extraño a la gente que dejé en mi país de origen					
2. Necesito el consejo de la gente con más experiencia que yo para saber cómo vivir aquí					
3.Estoy en desventaja para conseguir un buen trabajo					
4. A la gente en USA le cuesta entender mi acento					
5. Como latino/a, me tratan como ciudadano/a de segunda clase					
6. No me siento como en casa					
7. Cuando pienso en mi vida pasada, me emociono y me pongo sentimental					
8. Debo aprender como manejar ciertas cosas, tales como arrendar un departamento, inscribir a mis hijos en la escuela, conseguir seguro médico					
9. Me da miedo que yo o mi familia podamos ser deportados					
10. El status de mi trabajo es menor que el del trabajo que solía tener en mi país de origen					
11. Tengo dificultad en realizar tareas cotidianos debido a la barrera idiomática					
12. Siento que debería visitar a mi familia y amigos en mi país de origen más seguido					
13. Los norteamericanos no piensan que realmente pertenezco a este país					
14. A pesar de que vivo aquí, no lo siento como mi país					
15. Cuando pienso en mi país original, lagrimeo					
16. Siempre estoy enfrentando nuevas situaciones y circunstancias					
17. Extraño la ayuda y el apoyo de mi familia en mi país de origen					
18. Me preocupa mi status legal y el de mi familia					
19. No puedo competir con los ciudadanos norteamericanos por trabajo en mi área					
20. Hablar en inglés me requiere mucho esfuerzo					
21. No siento que éste sea mi hogar verdadero					
22. Me siento triste cuando pienso en lugares especiales de mi país					
23. Tengo que depender de otra gente que me enseñe o me muestre cómo se hacen las cosas (ejemplo, depositar un cheque, inscribir a mi hijo en la escuela, etc.)					
24.Ojalá pudiese hablar con mi familia en mi país más seguido					

	Nunca	A veces	Muy seguido	N/A	
25. Tengo menos oportunidades profesionales/en mi carrera que los que no son latinos					
26. Los que no son latinos me tratan como alguien de afuera en los Estados Unidos					
27. Las credenciales para trabajar /de trabajo que tenía en mi país de origen no son aceptadas aquí					
28. No puedo entender la televisión o radio en inglés					
29. La gente con acento extranjero es tratada con menos respeto					
30. Ojalá pudiera traer a otros miembros de mi familia a USA					

Stressful life Experience

Below there is a list of situations that you may have experienced. Please indicate if you have ever experienced the situations listed below with a √. If you have, please indicate how stressful that experience has been for you based on the scale of stress provided.

```
|____|____|____|____|____|____|____|____|____|____|
0    1    2    3    4    5    6    7    8    9    10
```
Not all stressful   Moderately Stressful   Extremely
                                                                             stressful

	Situation	Did it happen to you in the last 12 months? (Indicate with √)	
		Yes	No
1	I have witnessed or experienced a natural disaster; like a hurricane or earthquake.		
2	I have witnessed or experienced a human made disaster like a plane crash or industrial disaster.		
3	I have witnessed or experienced a serious accident or injury.		
4	I have witnessed or experienced chemical or radiation exposure happening to me, a close friend or a family member.		
5	I have witnessed or experienced a life threatening illness happening to me, a close friend or a family member.		
6	I have witnessed or experienced the death of my spouse or child.		
7	I have witnessed or experienced the death of a close friend or family member (other than my spouse or child).		
8	I or a close friend or family member has been kidnapped or taken hostage.		
9	I or a close friend or family member has been the victim of a terrorist attack or torture.		
10	I have been involved in combat or a war or lived in a war affected area.		
11	I have seen or handled dead bodies other than at a funeral.		
12	I have felt responsible for the serious injury or death of another person.		
13	I have witnessed or been attacked with a weapon other than in combat or family setting		
14	As a child/teen I was hit, spanked, choked or pushed hard enough to cause injury		
15	As an adult, I was hit, choked or pushed hard enough to cause Injury		
16	As an adult or child, I have witnessed someone else being choked, hit, spanked, or pushed hard enough to cause injury.		
17	As a child/teen I was forced to have unwanted sexual contact.		
18	As an adult I was forced to have unwanted sexual contact.		
19	As a child or adult I have witnessed someone else being forced to have unwanted sexual contact		
20	I have witnessed or experienced an extremely stressful event not already mentioned. Please Explain:_____		

Eventos y Cambios estresantes

Por favor indique si usted ha experimentado alguna vez en su vida algunas de las situaciones de la lista (√). Si la ha vivido alguna de estas situaciones, por favor indique cuán estresante le resulta esta experiencia hoy basándose en la escala de estrés de la página anterior.

		¿Alguna vez ha vivido algunas de estas situaciones?	
		Yes	No
1	Presencié o viví un desastre natural; como un huracán o un terremoto.		
2	Presencié o viví un desastre causado por el hombre como un accidente aéreo o un desastre industrial.		
3	Presencié o viví un accidente o herida grave.		
4	Presencié o viví una exposición a químicos o radiación que me ocurrió a mí, a un amigo cercano, o a un familiar.		
5	Presencié o viví una enfermedad mortal que me ocurrió mí, a un amigo cercano, o a un familiar		
6	Presencié o viví la muerte de un esposo/a o un hijo/a.		
7	Presencié o viví la muerte de un amigo cercano o un familiar (distinto de un esposo o hijo).		
8	Yo, un amigo o miembro de la familia hemos sido secuestrados o tomados como rehenes.		
9	Yo, un amigo cercanao, o un miembro de la familia hemos sido víctimas de un ataque terrorista o torturas.		
10	He participado en combates o en una guerra o vivido en una zona afectada por una guerra.		
11	He visto o tenido que recoger cuerpos muertos en situaciones distintas a un funeral.		
12	Me he sentido el responsable por una herida grave o la muerte de otra persona.		
13	He presenciado o he sido atacado con un arma en una situación que no es de combate ni en la familia.		
14	De niño/adolescente me pegaban, asfixiaban, o me empujaban lo suficientemente fuerte como para causarme una herida.		
15	De adulto, me han pegado, asfixiado, o empujado lo suficientemente fuerte como para causarme una herida.		
16	De adulto o niño, he presenciado cómo otra persona era ahogada, golpeada, o empujada lo sufiencentemente fuerte como para causarle una herida.		
17	De niño/adolescente, me forzaron contra mi voluntad a tener contacto sexual.		
18	De adulto, me forzaron contra mi voluntad a tener contacto sexual.		
19	De niño/adolescente, presencié como alguien era forzado a tener contacto sexual contra suvoluntad		
20	He presenciado o experimentado un evento altamente estresante que no ha sido mencionado en esta lista. Por favor explique cuál:_____		

CAGE – Alcohol Use
Please indicate your answer with a √

	YES	NO
1. Have you ever felt you should *cut* down on your drinking?		
2. Have people *annoyed* you by criticizing your drinking?		
3. Have you ever felt *bad* or *guilty* about your drinking?		
4. Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (eye-opener)?		

CAGE – Uso de alcohol - Por favor indicate su respuesta con la siguiente marca √

	SI	NO
1.¿Alguna vez sintió que debería disminuir su consumo de alcohol?		
2. ¿Alguna vez se ha enojado con gente que ha criticado su consumo de alcohol?		
3. ¿Alguna vez se ha sentido mal o culpable por su consume de alcohol?		
4. ¿Alguna vez ha bebido alcohol apenas se levanta a la mañana para estabilizar sus nervios o sacarse una resaca?		