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Binge Drinking Among Hispanic Students in the U.S.-Mexico Border: Exploring the Impact of Trauma Exposure and Cultural Correlates

Daniela Gonzalez

BINGE DRINKING AMONG HISPANIC STUDENTS IN THE U.S.-MEXICO BORDER: EXPLORING THE IMPACT OF TRAUMA EXPOSURE AND CULTURAL CORRELATES

A Thesis

By

DANIELA GONZALEZ

Submitted to Texas A&M International University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

August 2017

Major Subject: Counseling Psychology

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ABSTRACT

Binge drinking among Hispanic students in the U.S.-Mexico border: Exploring the impact of trauma exposure and cultural correlates (August 2017)

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According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), about 60% of the college population had engaged in alcohol use and even more so, 2 out of 3 reported they had engaged in binge drinking in the past month. Binge drinking is measured as "consuming 5 or more drinks on the same occasion at least once in the past 30 days" (National Survey on Drug Use and Health, 2011). Several factors such as trauma exposure has been demonstrated to increase college students' risk of engaging in alcohol consumption. Research on alcohol consumption on the US-Mexico border is limited. Hence, the purpose of this literature review was to investigate how factors unique to the Hispanic community such as *familismo*, acculturation, and trauma exposure in the US-Mexico border predict excessive alcohol consumption. Factors such as *familismo* and acculturation have been demonstrated to act as either a protective factor or risk factor depending on the presence of such cultural levels. Furthermore, trauma exposure such as witnessing physical assaults increases the likelihood of an individual's excessive alcohol consumption. The present study investigated the cultural correlates of *familismo* and acculturation as well as trauma exposure and short-term and long-term binge drinking behavior in relation to excessive alcohol consumption.

Keywords: *Alcohol Consumption, Binge Drinking, Acculturation, Familismo, Trauma Exposure*

DEDICATION

I dedicate my thesis to Inya I. Eleje. You taught me to stay grounded and dedicated to my studies all while enjoying life's moments. You taught me to handle life's toughest battles with grace and kindness. You are truly missed. I hope that you continue watching over me from heaven.

Acuerda que si un día me faltas no seré nada, y al mismo tiempo lo seré todo.

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INTRODUCTION

According to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), about 60% of the college population aged 18-22 drank alcohol in the past month. Furthermore, 2 out of 3 college students reported they engaged in binge drinking in the past month representing approximately 37.9% of college students (National Survey on Drug Use and Health, 2015). Binge drinking is defined as "consuming 5 or more drinks on the same occasion at least once in the past 30 days" (National Survey on Drug Use and Health, 2011). More specifically, the NIAAA (2013) described it as a "pattern of drinking that brings blood alcohol concentration to a 0.08 g/dL" and typically occurs with 5 drinks for males and 4 drinks for women in a period of two hours. Harvard School of Public Health College Alcohol Study mentions that binge drinking places both the drinker and others at an increased risk of experiencing alcohol-related problems (Wechsler, Davenport, Dowdall, Moeykens & Castillo, 1994). For example, a person who consumes more than seven drinks in one sitting is at a higher risk of experiencing an alcohol-related consequence than an individual who has one drink each day for the entire week (Wechsler & Nelson, 2001).

Alcohol use poses many risks for college students including, harmful consequences to both their physical health and mental-health. Consequences of alcohol use are not restricted to the alcohol drinker alone. In the years 1998 to 2001, an estimated 696,000 college students each year were assaulted by another student who had been drinking and 97,000 students each year were victims of sexual assault or date rape (NIAAA, 2013). In addition, about 77% of non-binge

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drinking students experienced second-hand effects from a binge-drinker (Sheffield, Darkes, Del Boca, & Goldman, 2005). For example, being interrupted while studying or awakened at night, having to take care of a drunken peer, and being insulted or humiliated by a drunken peer were among the most commonly reported second hand effects from a binge-drinker (Wechsler, Lee, Kuo, Lee, 2000). Furthermore, there was a 3% increase in alcohol-related death among college students from 1,440 deaths in 1998 to 1,825 deaths in 2005 (Hingson, Zha, & Weitzman, 2009). Hence, alcohol use has become one of the leading health concerns on college campuses around the nation due to its detrimental physical and mental health consequences as well as its second-hand effects on college students.

College students who engage in alcohol consumption engage in more risk-taking behaviors (Brache & Stockwell, 2011; McBride, Barrett, Moore, & Schonfeld, 2014). Such behavior includes an increase in social engagement and bonding and an enhancement in sexual behavior (McBride et al., 2014; Wechsler & Nelson, 2001). Increase of risky behaviors can also include the following: riding home with a driver who had been drinking, driving home after drinking, being in a verbal fight, being hurt or injured, physical fights requiring medical treatment, and becoming a victim or perpetrator of sexual violence (Brache & Stockwell, 2011). In addition, increases in risky behaviors are associated with higher levels of recreational drug use and binge drinking.

Jones, Oeltmann, Wilson, Brener, and Hill (2001) demonstrated that college students who engaged in binge drinking were more likely to report lifetime and current use of other substances. Specifically, 87.8% of those who engaged in binge drinking reported using tobacco, 64.6% reported marijuana use, 11.7% reported cocaine use, and 28.9% reported other illegal drug use (Jones et al., 2001). Overall, binge drinkers were 34.3 times more likely to use

marijuana and 13.6 times more likely to use tobacco products than non-binge drinkers. (Jones et al., 2001). In addition, individuals who binge drink are more likely than non-binge drinkers to develop alcohol dependence issues (Wechsler & Nelson, 2001). This can be seen evidenced through the findings of Wechsler and Nelson (2001), as they reported that four out of five individuals who were identified as binge drinkers also met criteria for Alcohol Use Disorder (AUD). Evidently, alcohol consumption is associated with an array of risky behaviors as well as greater comorbidity of other substance use.

Implicit in these consequences, is that alcohol use can lead to further problems in critical areas in a student's life. Binge drinkers were three times more likely to have relationship issues and five times more likely to have difficulties at work than those who were classified as non-binge drinkers (Sheffield, Darkes, Del Boca, & Goldman., 2005). Alcohol use among college students can also lead to academic problems such as, concentration problems, poor attendance, and low grades (Wechsler & Nelson, 2001; NIAAA, 2013; Sheffield et al., 2005; McKinnon, O'Rourke, & Byrd, 2003). College students' GPA seemed to be correlated with increased use of alcohol. Students with a GPA of a B, C, and D/F reported the highest binge drinking rates than students with a GPA of an A (McBride et al., 2014). According to Sheffield et al. (2005), 24% of students who engaged in binge drinking reported school related problems. On the other hand, only 6% of non-binge drinkers and 3% of abstainers reported school related problems (Sheffield et al., 2005). Also, school attendance was affected as those who engaged in binge drinking were about eight times more likely to miss class than non-binge drinkers (Wechsler et al., 2000).

However, there have been mixed findings about the association of poor academic achievement and binge drinking. While some have demonstrated that alcohol use has been associated with poor academic functioning, others have not been able to demonstrate such

association. After several factors have been controlled for in various studies, alcohol use seems to have a very small effect on academic functioning (Thombs, Olds, Bondy, Winchell, Baliunas, and Rehm, 2009; DeBerard, Spelmans, & Julka, 2004; Howland, Rohsenow, Greece, Litlefield, Almeida, Heeren, Winter, Bliss, Hunt, & Hermos, 2010). Nonetheless, studies have found that alcohol can impact the mental states associated with perceived academic performance, mental health, and mood (Howland et al., 2010; Holtes, Bannnink, Joosten-Van Zwanenburg, Van As, Raat, & Broeren, 2015). For instance, the act of binge drinking affects the visuospatial, motor function, and attention/reaction-time deficits, and has been found to impair memory and consequently disrupt learning (Goldstein et al., 2016; Howland et al., 2010).

Long-term effects of binge drinking can impact the hippocampus and other brain regions responsible for memory and learning (Goldstein et al., 2016). Furthermore, long-term effects of binge drinking can result in brain damage and cognitive deficits (Goldstein et al., 2016). The positive side is that the long-term effects of alcohol use are preventable and there are strategies that can be utilized and set in place in order help college students manage their drinking (Goldstein et al., 2016). This utilization of these strategies can help prevent binge drinking from leading to AUD and hence prevent the long-term cognitive impairments associated with alcohol use (Goldstein et al., 2016). Specific focus should be given to these young adults who have constantly been demonstrated to have high alcohol abuse rates and thus are highly susceptible to the adverse effects.

Binge drinking among college students

The prevalence rate of binge drinking for college students has remained stable over a six-year span, with two in five college students engaging in binge drinking (Wechsler et al., 2000; Sheffield et al., 2005). However, while the prevalence of binge drinking has remained the same,

those college students who engaged in binge drinking began to do so in higher quantities thus increasing their risk for AUD (Wechsler et al., 2000). It appears that there are certain risk factors that place students at a higher risk of engaging in binge drinking. It has been found that, binge drinking is mostly practiced among White males, students living off campus, and those who are part of a Greek organization in the university (McBride et al., 2014; Jones et al. 2001, Wechsler et al., 2000).

Gender alone seems to act as a major factor associated with binge drinking, as males demonstrated higher rates of binge drinking than females (McBride et al., 2014; Jones et al., 2001; Wechsler et al., 2000; Howland et al., 2010; McKinnon et al., 2003; Clapp, Shillington, & Segars, 2000). In regards to ethnicity, some studies reported that White college students are the most at risk for binge drinking (McBride et al., 2014; Jones et al. 2001, Wechsler et al., 2000; Paschall, Bersamin, & Flewelling, 2005; DiBello, Gonzales, Young, Rodriguez, & Neighbors, 2016). However, it is essential to note that these universities are predominantly White (non-Hispanic) and thus the numbers represent an un-proportional representation of races. While gender and ethnicity can serve as major risk factors, it is important to note that there are other variables that can act as moderators for alcohol consumption among college students.

Stress and binge drinking

High stress levels in students is another factor that poses a risk for binge drinking (Chen & Feeley, 2015; Clapp, Shillington, & Segars, 2000; Renner, O'Dea, Sheehan, & Tebbutt, 2015). The pressures of meeting deadlines and performing academically well in college are well known to cause psychological distress in university students. The most common stressful events reported by students include academics (i.e., homework, tests), social relationships with friends or family, economic pressures, and work concerns (Aldridge-Gerry, Roesch, Villodas, McCabe,

Leung, & Da Costa, 2011). In turn, students' psychological distress is associated with poor academic performance and a lower likelihood of graduating (Renner et al., 2015). Aside from being impacted in their academic life, students who are employed also reported having alcohol impact their employment. Students who experience an inability to meet work and study requirements as well as daily commitments report more psychological distress (Renner et al., 2015).

Additionally, being a Non-native English speaker was associated with higher levels of psychological distress (Renner et al., 2015). Altogether, experiencing psychological distress because of inability to meet daily student requirements and other commitments along with being a Non-native English speaker was associated with binge drinking (Renner et al., 2015). Such students were also found to report experiencing less days out of their student role thus experienced a decline in academic performance (Renner et al., 2015). Furthermore, research shows that experiencing any ongoing stressor, as well as having a low income influenced the rate of binge drinking among college students (Cerda, Vlahov, Tracy, & Galea, 2008).

The way that stress is handled, including coping strategies, plays a central role in mental health and well-being. Renner et al. (2015) found that having greater psychological flexibility buffered out the effects of psychological distress. Therefore, being able to adapt to the environment makes it more likely that an individual will refrain from binge drinking. On the other hand, dysfunctional coping strategies such as emotional rumination and minimization of the stressor (avoidance) used to alleviate stress, are linked with increased alcohol use (Aldridge-Gerry et al., 2011; Park, Armeli, & Tennen, 2004). Physiologically speaking, what occurs in the body during highly stressful times has a similar impact as to what exposure to trauma does in ones' body. Thus, indicating that trauma acts as a huge stressor in an individual's life. This huge

stressor in a form of trauma can also lead individuals to engage in a variety of negative coping mechanisms, such as self-medicating with alcohol. Hence, exposure to trauma can increase an individual's probability of engaging in substance use.

Trauma and alcohol use

Young adults, specifically college students, have demonstrated to be more at risk for experiencing traumatic events (Lind et al., 2017). These traumatic events can manifest themselves in the body and mind through a variety of symptoms such as flashbacks, nightmares, avoiding any stimuli regarding the trauma, and marked change in behavior such as becoming hypervigilant or experiencing angry outbursts (American Psychiatric Association, 2013). Symptoms can last anywhere from a couple of days, resulting in a diagnosis of Acute Stress Disorder, or up to 30 days, warranting a diagnosis of Post-Traumatic Stress Disorder (PTSD) (American Psychiatric Association, 2013). In a correlation analysis, PTSD's symptoms were individually strongly correlated with AUD with dysphoria presenting with the strongest correlation (Biehn et al., 2016). Thus, demonstrating that PTSD has a high comorbidity rate with AUD (Lind et al., 2017; Biehn et al., 2017).

Although Goldstein et al. (2016) found that the comorbidity of AUD with PTSD was very low, other research has continuously demonstrated that PTSD is significantly correlated with increase alcohol use. A systematic review of the comorbidity between PTSD and alcohol misuse indicated prevalence rates ranged from 9.8% to 61.3% (Debell et al., 2014). Furthermore, PTSD along with trauma exposure have been linked to higher rates of binge drinking (Kachadourian, Pilver, & Potenza, 2014). Both, trauma exposure and PTSD also increase the risk of developing an AUD (Kachadourian et al., 2014). In a study performed by Tuliao, Jaffe, and McChargue (2016), the self-medication hypothesis was tested among the relationship in college

students' trauma exposure and alcohol consumption. College students who self-reported trauma exposure actively engaged in alcohol use as a tension-reduction coping mechanism (Tuliao et al., 2016). Due to college students reporting high levels of alcohol consumption and being the population that is most susceptible to experiencing trauma, it is important to analyze all other risk and protective factors that can foster high alcohol consumption behavior.

The college context

Extracurricular activities such as school organizations can act as both risk and protective factors in binge drinking. The research on the impact of extracurricular activities in college students is limited. Nonetheless, it is a much-researched topic in adolescents. Extracurricular activities have been associated with positive development outcomes such as regulating the adolescents' emotions (Mahoney, Harris, & Eccles, 2006; Larson, & Brown, 2007). The more time in a high-risk environment the more exposure to violence and hence the greater the delinquent behavior (Richards et al., 2004). On the other hand, the more time in a protective environment, the less exposure to violence (Richards et al., 2004). In other studies, research has demonstrated that extracurricular activities such as Greek organizations have an increased risk for delinquent behaviors among college students. Being a member of a sorority or fraternity or even participating in Greek events as a non-member increases the risk of binge drinking in college students (Jones et al., 2001; McBride et al., 2014; Wechsler et al., 2000). The influence of such organizations, whether they act as either a protective or risk factor, demonstrates that social norms strongly influence an individual's behavior (Sheffield et al., 2005; Wechsler 2001). Social norms can influence college students in that it can paint a positive picture of binge drinking to the students in that it is something that is perceived as normal behavior among college students (Wechsler, 2001). As a matter of fact, the impact of social norms played a

stronger role in those college students who spent more time on campus (Sheffield et al., 2005). Although such research explains how alcohol use affects the general college population and demonstrates trauma exposure as being related to alcohol, it is important to take into consideration that the present study will focus on Hispanic college students. Thus, special consideration must be given to the cultural factors that influence alcohol consumption among the Hispanic student population.

Latinos in college: Trauma and alcohol use

Hispanic College Enrollment/Attainment. Latino graduation rates have remained significantly low as compared to other non-minorities (Urbina, 2015). Of the college going Hispanic population aged 25 and older, only 13% have graduated with a bachelor's degree or higher (Urbina, 2015). When comparing Hispanic enrollment in degree-granting institutions, there was a 71% increase, from 8, 580, 887 to 12, 096, 895, between the years of 1970 and 1980 (National Center for Education Statistics, 2008). Hispanic students' college enrollment and attainment rates increased steadily at a small rate. In the year 2000, 15, 312, 289 Hispanic students were enrolled in a degree-granting institution (Urbina, 2015). From 2007 to 2008, there was a 5.6% increase in Hispanic students enrolled in college, 18, 248, 128 to 19, 102, 814 (Urbina, 2015). Even though Hispanic college enrollment rates remain at very low rates when compared to non-minorities, the rates are steadily increasing when compared to early years of Hispanic college enrollment rates. When analyzing college enrollments during the gap in academic school years 2002-2003 through 2012-2013, there was a 110 % increase of Hispanic students earning a bachelor's degree (Snyder, de Brey, and Dillow, 2016). Overall, this suggests that in early years the Hispanic student population had an increase of enrollment followed by relatively stable numbers and then lastly followed by a sudden increase. As Latinos continue to

pursue higher education, it is important to understand their background, especially as it relates to the likelihood of experiencing trauma, and current prevalence of alcohol use in this age group.

Trauma. It is important to consider the trauma that occurs in Hispanic communities considering that Latinos are more likely to have a low SES and live in urban, high-crime neighborhoods (DeNavas-Walt, Proctor, & Smith, 2007). Therefore, their risk of being exposed to violence and developing PTSD increases as well as their risk of engaging in heavy alcohol use. The relationship between trauma exposure and binge drinking can be described as bidirectional in which one can explain the other or vice versa. For example, binge drinking can cause a higher likelihood of trauma exposure such as sexual victimization of women (Valenstein-Mah, Larimer, Zoellner, & Kaysen, 2015). On the other hand, the self-medication hypothesis predicts that alcohol intoxication temporarily lessens anxiety and hence helps victims cope with trauma exposure (Cisler et al., 2012).

Specifically, in the Hispanic community, a relationship has been established between trauma as a result of exposure to violence, crime and substance abuse (Alvarez, Jason, Olson, Ferrari, & Davis, 2007). O'Connor, Vizcaino, & Benavidez, (2015) reported high numbers of self-reported trauma exposure in Hispanics college students living in the border city such as 44% of participants had experienced the murder or death of a close friend or relative related to drug violence, 40% of participants had experienced a robbery or extortion related to drug violence, 40% had experienced the disappearance or kidnapping of a family member or friend related to drug violence and 36% had reported experiencing a traumatic event unrelated to drug violence such as car accidents. O'Connor, Vizcaino, & Benavidez (2015) also demonstrated that living in a border city and having ties to Mexico, such as having family across the border or commuting

from Mexico, demonstrated having greater number of violence-related traumatic events as opposed to Hispanics who had no ties to Mexico and non-Hispanic participants.

Research regarding trauma has been known to dichotomize trauma exposure into two categories that of 'any exposure' and 'no exposure' (Cisler et al., 2012). Cumulative potential traumatic events (PTE) during a three-year period predict increases in binge drinking behavior (Cisler et al., 2012). However, Cisler et al. (2012) demonstrated that trauma exposure's influence on binge drinking can even be specific to the type of trauma that is experienced, assaultive versus non-assaultive. Assaultive trauma exposure included sexual assault, physical assault, and abuse from a caregiver (Cisler et al., 2012). Non-assaultive trauma included witnessing community violence, witnessing domestic violence, and other traumatic events such as motor vehicle accidents (Cisler et al., 2012). Assaultive PTE's was significantly positively related to binge drinking behavior whereas non-assaultive PTE's are not significant predictors of binge drinking behavior (Cisler et al., 2012).

Alcohol use. There have been mixed reports on the variability of binge drinking among races. What is known is that individuals who binge drink may do so repeatedly and with high intensity (Naimi et al., 2003; Esser et al., 2014). From 2009 to 2011, the prevalence rate of binge drinking was 27.4% (Esser et al., 2014). In a study, Hispanic college students drank the most at a rate of 39.3% followed by White (non-Latino) at 38.6% (McBride et al., 2014). However, other studies report that binge drinking is most common among White (non-Latinos) (McBride et al., 2014; Jones et al. 2001, Wechsler et al., 2000; Naimi et al., 2003; Esser et al., 2014). Naimi et al. (2003) reported that White (non-Latinos) accounted for 78% of all binge drinking episodes in a cross-sectional study. However, Hispanics had the highest rate of binge drinking episodes per person in most of the years of the cross-sectional study (Naimi et al., 2003). In other words,

White (non-Latinos) are more common binge drinkers; however, Hispanic individuals who engaged in binge drinking, will have more frequent episodes. African-American adults had the lowest amount of binge drinking episodes with an average of five episodes per person each year (Naimi et al., 2003).

Using the sample of the years 1993, 1995, 1997, 1999 and 2001, the Behavioral Risk Factor Surveillance System (BRFSS) coordinated with the Centers for Disease Control and Prevention and state health departments to study the prevalence rates of binge drinking (Naimi et al., 2003). There was a 17% increase in binge drinking episodes per person each year between the years 1993 and 2001. Furthermore, within the time frame 1995 and 2001, binge drinking episodes increased by 35% each year (Naimi et al., 2003). By 2001, 14.3% of adults reported at least one binge drinking episode in the past 30 days (Naimi et al., 2003). When compared to adults 55 years and older, adults aged 18-25 years old had the highest rates of binge drinking episodes (Naimi et al., 2003; Esser et al., 2014). However, there was a 25% increase in binge drinking episodes among adults aged 25 to 55 years old (Naimi et al., 2003). Males were the leading binge drinkers with 81% accounting for all binge drinking episodes (Naimi et al., 2003). Lastly, 72.9% of adults who engaged in binge drinking were considered moderate drinkers as opposed to heavy drinkers. This suggests that individuals who engage in binge drinking behavior do not necessary engage in constant use of alcohol consumption. However, when such individuals do drink, they tend to engage in binge drinking. Binge drinking's prevalence was the highest in annual household income more than $75,000 (Esser et al., 2014). However, those with an annual household income less than $25,000 reported highest frequency and intensity of binge drinking rates (Esser et al., 2014). Those with some college education demonstrated higher binge

drinking prevalence rates than college graduates, high school graduates, and those with less than a high school diploma (Esser et al., 2014).

Alcohol use among Hispanics living in the border

Despite the extensive knowledge there is about the general college population engaging in binge drinking, limited studies have explored the college population on the US-Mexico border. According to research, living on the US-Mexico border makes alcohol more accessible to the underage population; thereby, decreasing the drinking age minors first engage in alcohol use and increasing the rate of alcohol use (Maxwell & Wallisch, 1998). About 34.5% of participants in a U.S.-Mexico border study reported that they mostly drank on the Mexican side of the border either because it was perceived as more fun or less expensive than in the U.S. (McKinnon et al., 2003). According to McKinnon et al. (2003), "border students appeared to have higher rates of alcohol-related behaviors than seen in both state and national data" (p. 165). In fact, border city populations have the highest death rates from chronic liver cirrhosis and diabetes mellitus (Texas Comptroller of Pubic Accounts, 2003).

The Hispanic population consists of 42.7 million and it is predicted that by the year 2050 the Hispanic population will consist of 25% of the be the entire U.S. population, making it the largest minority group (Crockett et al., 2007). Thus, it is important to study this growing population along with their values, morals, and practiced beliefs to understand and provide effective, multicultural services that will be tailored to the unique needs of the Hispanic community. One of the issues where much research is warranted is in regard to alcohol use among the Hispanic community on the border. Although very few studies have examined the rate of binge drinking among college students in a border city, the limited data provides us with an idea of the significant difference that a geographic location can have. Therefore, the purpose of

this study is to fill a missing gap in literature by analyzing the effects of alcohol consumption among young adults enrolled in a university located on the U.S.-Mexico border. Given that the population in these geographic locations is predominantly Latino, the current study will take into consideration important factors associated with the Hispanic culture. The role of trauma exposure, cultural factors such as *familismo*, family structure, and acculturation are specific factors that will be analyzed in the prevalence of binge drinking among Hispanic college students.

Hispanic cultural factors

Given that the current study will be recruiting participants who are living in a US-Mexico border city, it is important to consider the impact of cultural values in binge drinking among college students. The values and cultural expectations in the Hispanic culture are central to analyzing the effects of alcohol use in this population (DiBello et al., 2016). Cultural considerations are necessary given that factors such as *familismo* and acculturation have been demonstrated to act as both protective and risk factors of substance use in Latinos.

Familismo. Familismo has been identified as a potential protective cultural value in Hispanic cultures (Strunin et al., 2015). Latinos are well known to come from big, integrated families. According to Calzada, Fernandez, and Cortes (2010), *familismo* is defined as an integrated family unit that includes both nuclear and extended family in which a member relies on for both social and emotional support. According to Sabogal, Marin, Ortero-Sabogal (1987), the three dimensions to *familismo* are 1) familial obligations, 2) perceived support from the family, and 3) family as referents. For instance, *familismo* calls for responsibility of each member to provide support to one another as well as a responsibility to meet the family expectations and to avoid bringing dishonor to the family (Steidel & Contreras, 2003).

Familismo also implies the family will be collective including all earnings of children younger than 18 will be given to the parents and live with the family until they are married (Steidel & Contreras, 2003). This sense of obligation from each individual to the family is a characteristic of *familismo's* perceived family support (Sabogal et al., 1987; Flaskerud, 2008). Furthermore, *respeto* is another value that is strongly evidenced in *familismo*, in which it calls for those younger in age to always respect those who are older, which includes not questioning the parents and trusting their decisions (Steidel & Contreras, 2003). *Familismo* is such a powerful state in Hispanic culture that despite individuals who are physically separated from the family, the family still maintains a strong perception of family support (Lopez-Tamayo, Seda, Jason, 2016).

Altogether, *familismo* and its contexts of family pride, filial piety, and family support act as a protective factor for substance use among Hispanic youth (Strunin et al., 2015; Dillon, De la Rosa, Sastre, & Ibañez, 2013). *Familismo* seems to act as a protective factor against heavy drinking exclusively in Latinos (DiBello et al., 2016). Individuals who scored high on *familismo* were more likely to spend time with their family in a protective context such as being at home with parental monitoring (Kennedy & Ceballo, 2013). Hence, those who had a stronger sense of *familismo* reported "lower rates of victimization and witnessing community violence" (Kennedy & Ceballo, 2013, p. 677). Thus, *familismo* acts as a buffer from community violence. Given that exposure to violence has been linked to greater likelihood of binge drinking behavior, then it is possible that *familismo* can also act as a mediator between both variables.

While there are limited studies that analyze alcohol use among Hispanic college students, there are a fair amount of studies that have analyzed the correlation between *familismo* and substance use among teenagers. It has been found that, Latinos scoring high on *familismo* were likely to have fewer years of substance abuse as opposed to those who had low scores (Lopez-

Tamayo et al., 2016; Dillon et al., 2013; DiBello et al., 2016). Where *familismo* was present, there were reportedly lower rates of family conflict and less duration of substance use (Lopez-Tamayo et al., 2016). Therefore, it was suggested that high rates of *familismo* promotes positive behavior that is consistent with Hispanic cultural values (Lopez-Tamayo et al., 2016). However, to date no research has specifically explored the relationship of *familismo* to alcohol use among college students.

Family structure. The type of functioning and the type of structure of the family determines whether the family takes on the role of being a protective factor or risk factor (Wagner et al., 2010). For instance, in spite of high levels of *familismo,* adolescents who lived with either a single father or single mother were exposed to less parental monitoring and thus, were at a greater risk of developing a substance use disorder (Wagner et al., 2010). Thus, having a single parent could potentially decrease the family cohesion and family communication that can then result in a higher likelihood of engaging in substance use (Szapocznik, Prado, Burlew, Williams, & Santisteban, 2007). Family structure, cohesion, unity, and integration all work at the microsystem level. However, it is important to also take into account the influences at the macrosystem level such as acculturation and gender norms (Wagner et al., 2010).

Acculturation. Acculturation is defined as an ongoing process that occurs when an individual of one culture makes contact with another cultural group (Flaskerud, 2007). In other words, acculturation is defined as the response to cultural change (Szapocznik et al., 2007; Holley, Kulis, Marsiglia, & Keith, 2006). It occurs as immigrants adopt values, beliefs, and behaviors of the hosting culture all while retaining aspects from their own culture (Flaskerud, 2007). Interestingly, high levels of acculturation were found to be associated with lower levels of *familismo's* perception of family obligations and family as referent factors (Lopez-Tamayo et al.,

2016). The "acculturation process and accompanying stress is posited to erode components of *familismo*" (Dillon et al., 2013, p. 957). This research suggests that through the acculturation process, heritage values are mainstreamed with the new culture values. For instance, the values of a collective family can be diminished in the Western culture where individuation is seen as part of healthy development.

In addition, more years lived in the United States is correlated with an increased risk of alcohol use, and it is suggested that acculturation is a moderator of this relationship (Wagner et al., 2010; Flaskerud, 2007). For example, research has found there is a higher risk for U.S.-born Latinos to develop alcohol use problems than their foreign-born counterparts (Szapocznik et al., 2007; De La Rosa, Dillon, Sastre, & Babino, 2013; Kimbro, 2009; Alvarez, Jason, Olson, Ferrari, & Davis, 2007). For example, pre-immigration levels of *familismo* are associated with lower alcohol use after immigration (Dillon et al., 2013). Therefore, *familismo* seems to act as a protective factor during the early years of post-migration (Dillon et al., 2013). Moreover, individuals who lived in neighborhoods in which English was spoken or who were more fluent in English themselves engaged in more hazardous and frequent alcohol use (Dillon et al., 2013; Alvarez et al., 2007). This suggests that a relationship in that the more highly acculturated the immigrant is to the U.S. host country, the higher the rates of alcohol consumption. Factors related to acculturation include sources of acculturative stress such as having a language barrier and poor financial resources have been demonstrated to act as risk factors for increased binge drinking (Guilamo-Ramos, et al., 2004). In fact, high rates of poverty among Latinos have demonstrated to act as a risk factor for engaging in heavy alcohol use (Alvarez et al., 2007). Moreover, the more years in the U.S., the greater the likelihood of experiencing some type of

discrimination whether because of immigrant status or low socioeconomic status (SES) (Guilamo-Ramos et al., 2004; Tran, Lee, & Burgess, 2010; Alvarez et al., 2007).

Gender and acculturation. In the college population, male students were significantly more likely than female students to be binge drinkers (Jones et al., 2001; McBride et al., 2014; Wechsler et al., 2000; Howland et al., 2010; McKinnon et al., 2003). This finding is replicated among Latinos, as Hispanic men have higher rates of binge drinking than Hispanic women, with Hispanic women abstaining from using alcohol at higher rates compared to men, and a lower risk of developing alcohol dependence (Alvarez et al., 2007). However, acculturation seems to change this dynamic especially in women as research shows they engage in heavier alcohol use when they adopt U.S. cultural values, associate with non-Latinos, and use English speaking media (Alvarez et al., 2007). Therefore, gender serves as a moderator of alcohol consumption among Hispanic college students only when there are low levels of acculturation, and Hispanic cultural values are maintained.

The purpose of this study was to fill in the missing gap in the literature concerning alcohol consumption among Hispanic college students in the U.S.-Mexico border while taking into account factors unique to this population such as family structure, *familismo,* trauma exposure, and acculturation. This study fills an important gap in the literature focusing on the prevalence of alcohol consumption among Latinos attending college given the increased college enrollment among this minority group (Urbina, 2015). In addition, given that Laredo is a border city, the exposure of trauma to violence in the U.S-Mexico border was investigated in relation to alcohol consumption patterns among college students. Based on the above findings, it is hypothesized that trauma exposure, high levels of acculturation, and low levels of *familismo* predict higher rates of alcohol use patterns among Hispanic college students.

METHODS

Participants

The participants for this study were registered during the Spring 2017 at Texas A&M International University (TAMIU). A total of 374 Hispanic undergraduate students were recruited to take part in this online study (See Table 1). The sample was made up of 81.1% females and 18.4% males. However, in the analyses only the participants who reported consuming alcohol were considered which was 15.7% males and 84.3% females (See Table 2). The average GPA from the students was 3.17 (*SD*= .47). The sample consisted of mostly upperclassmen as they constituted about 73.3% of the study. The average participant age was 22.89 (*SD*=4.19). The average participant household income was $82,735 (*SD*= 204750.44).

Table 1
Demographic Information for Study Participants

	N	%	*M*	*SD*
Age	374		22.39	4.39
Gender	374			
Male	69	18.4%		
Female	304	81.1%		
Transgender	1	.3%		
Classification				
Freshmen	19	5.1%		
Sophomore	81	21.6%		
Junior	99	26.4%		
Senior	176	46.9%		
GPA	370		3.17	.49
Primary Language	375			
English	150	40.0%		
Spanish	133	35.5%		
Bilingual	91	24.3%		
Income	315		10.51	.877
Place of Birth	375			
USA	336	89.9%		
Foreign Country	35	9.3%		

However, before the analysis was conducted, a natural log transformation was conducted for the participants' household annual income (See Table 1 and Table 2). Also, most of the participants were born in the U.S. (88.6%). Furthermore, 42.1% of the participants reported English as their primary language, 35.7% reported Spanish as their primary language, and 22.1% reported they were bilingual (spoke English and Spanish).

Table 2

Demographics for Participants Who Consumed Alcohol

	N	*%*	*M*	*SD*
Age	140		22.89	4.19
Gender	140			
Male	22	15.7%		
Female	118	84.3%		
Classification				
Freshmen	7	5%		
Sophomore	24	17.1%		
Junior	30	21.4%		
Senior	79	56.5%		
GPA	138		3.17	.47
Primary Language	140			
English	59	42.1%		
Spanish	50	35.7%		
Bilingual	31	22.1%		
Income	134		10.59	1.012
Place of Birth	139			
USA	124	88.6%		
Foreign Country	15	10.7%		

Procedures

The study was approved by the university's Institutional Review Board (IRB), professors were contacted through email and were encouraged but not required to offer extra credit opportunities for students and to establish dates and times for researcher to recruit participants. Participants were recruited from several undergraduate psychology courses during the Spring 2017 semester. During recruitment, researcher discussed the purpose and importance of the study, confidentiality, voluntary participation, and possible extra credit opportunities.

Participants completed an online survey containing a basic demographic questionnaire and the four measures.

Time to complete survey was about 25-30 minutes. Students were provided a link to the survey while recruiting face to face or via email. Once they clicked on the link, they were redirected to Google Doc, an online survey development software, where they were redirected to complete the measures required for this study. All responses were anonymous. Data was transferred into SPSS Software and analyzed using a stepwise multiple regression analysis. Given that we want to demonstrate if alcohol consumption is influenced by other factors, the AUDIT scores will be the dependent variable.

Measurements

Sociodemographic questionnaire. A basic demographic questionnaire will be used determine participant's age, sexual orientation, gender, marital status, classification at TAMIU, GPA, race/ethnicity, primary language spoken at home, place of birth, number of years living in the U.S., number of years at TAMIU, total household income, and employment status. Also included is the question regarding the family structure, "Are your parents still together?" followed by the question, "If so, for how long?". Extracurricular activities were also assessed during this section by the question, "Involvement in TAMIU Extracurricular activities?".

The Attitudinal Familism Scale (AFS). *Familismo* will be assessed using the AFS (Steidel & Contreras, 2003), which is an 18-item self-report scale designed to assess the following: familial support, familial interconnectedness, familial honor, and subjugation of self for the family. It is based on a ten-point Likert scale, with responses ranging from 1 ("strongly disagree") to 10 ("strongly agree"). A sample item from the AFS assessment is: "Children should obey their parents without question even if they believe they are wrong." In previous

studies, the AFS has been reported to yield satisfactory levels of internal consistency for the overall scale (α = .88) (Austin, Smith, Gianini, & Campos-Melady, 2013). Furthermore, attitudinal familism scale was negatively correlated to a scale that measured acculturative status hence establishing divergent validity (Austin et al., 2013).

The Brief Acculturation Ratting Scale for Mexican Americans (Brief ARSMA-II). Acculturation will be assessed using the Brief ARSMA-II (Bauman, 2005), which is designed to measure the frequency to which an individual engages in activities related to the Anglo and Mexican culture. The Brief ARMSA-II is a 12-item scale that consists of two subscales: a 6-item Anglo Orientation Subscale (AOS) and a 6-item Mexican Orientation Subscale (MOS). It is based on a 5-point Likert scale ranging from 1 ("not at all") to 5 ("almost always or extremely often"). A sample item from the AOS is: "I enjoy English language movies." A sample item from the MOS is: "My thinking is done in the Spanish language." The Brief ARMSA-II has been reported to yield satisfactory levels for both the AOS subscale (α = .79) and the MOS subscale (α = .91) (Bauman, 2005). Furthermore, Bauman (2005) established concurrent validity (.89) when comparing the Brief ARSMA-II to the original ARSMA. Furthermore, good construct validity was reported when comparing the acculturation categories of the language of the forms used by the participants (Bauman, 2005).

The Alcohol Use Disorders Identification Test (AUDIT). The AUDIT will be used to identify hazardous drinking behaviors (Saunders et al., 1993). The 10-item scale covers the following domains: alcohol consumption, drinking behavior (dependence), alcohol-related problems. Responses are scored from 0 to 4, giving a maximum possible score of 40. A sample item from the AUDIT is: "How often during the last year have you been unable to remember what happened the night before because of drinking." A previous test-retest reliability study

reported the AUDIT to have yielded high levels of reliability for the overall scale (r = .86) (Sinclair & Babor, 1992). Furthermore, the AUDIT consists of data from a cross-national data set (Saunders et al., 1993). External validity of the AUDIT was established across multiple populations in countries such as Australia, Bulgaria, Kenya, Mexico, Norway, and the USA (Saunders et al., 1993). Also, Saunders et al. (1993) validated the AUDIT in which 99% of the alcoholics assessed scored an 8 or more and 98% of the alcoholics scores 10 or more. Three out of 678 of the non-drinkers scored an 8 or more hence establishing divergent validity (Saunders et al., 1993).

Binge Drinking

NIAAA Measure. According to the NIAAA (2004), binge drinking consists of consuming five or more alcoholic beverages for males and four or more alcoholic beverages for females at least on one occasion in a 2-hour period during the last 12 months. Questions used to assess binge drinking following the NIAAA's definition are included in the assessment as, "Over the past 2 weeks, how many occasions have you had [5 (male)/ 4 (female)] or more drinks in a row?". This question was followed by, "What is the greatest number of drinks you consumed in a 2-hour period during the past 12 months?" (Cranford, McCabe, & Boyd, 2006).

Proposed New Index for Binge Drinking. Given the lack of clarity of the measurement of what entitles a drink in NIAAA's definition, we have proposed a new index that will measure alcohol content, volume of alcoholic beverage, and drinking duration. The following questions were developed and integrated into the assessments, "Think of the last 30 days, on average, how many alcohol drinks equivalent to 12 oz. do you consume in 2 hours (12 oz. is the size of your typical glass Michelob Ultra beer bottles)?". This question was followed by, "To continue on the

previous item, on average, what is the alcoholic content of these drinks (please answer in percentage value, e.g., 6.5%).

Life Events Checklist (LEC). The LEC will be used to identify previous traumatic events (Blake et al., 1995). The LEC is a 17-item self-report questionnaire is designed to assess for traumatic events that have generally been found to be associated to PTSD. Each item inquires for the individual to respond with one of the following: "happened to me," "witnessed it, "learned about it," "part of my job," "not sure," and "doesn't apply." A sample item from the LEC is: "physical assault (for example, being attacked, it, slapped, kicked, beaten up)." According to Gray, Litz, Hsu, Lombardo (2004) a convergent validity of the LEC (kappa =.70) was established when comparing the LEC to a traumatic life events interview in which there was a convergence in individual's responses. Furthermore, individuals who meet criteria for PTSD were positively correlated than those individuals who did not meet the criteria for PTSD (Gray et al., 2004). The same was true for items on the LEC that correlated with items on an alternate post traumatic exposure measure as well as measures of psychopathology that are associated with trauma exposure hence establishing concurrent validity (Gray et al., 2004). External validity was difficult to establish considering that individuals report on different aspects of trauma across populations (Gray et al., 2004).

RESULTS

A standard multiple regression analysis was conducted in order to answer the following research questions: (a) does being exposed to traumatic events lead to higher drinking behavior? (b) do cultural factors such as acculturation and *familismo* act as protective factors against drinking behavior? and (c) is binge drinking behavior a predictor of problematic drinking behavior?

Descriptive statistics were obtained; standard deviations, means, and ranges for each of the scales and are presented in Table 3.

Table 3
Descriptive Statistics for all Study Variables

			Range		
Variables	*M*	*SD*	Minimum	Maximum	α
AFS	125.07	24.50	29.00	180.00	.90
BARSMA-II	.46	1.53	-3.00	3.70	.77
LEC-5	23.38	19.70	0.00	84.00	.92
Audit	5.84	4.90	1.00	30.00	.80
Short-term Binge Drinking	1.09	1.47	0.00	7.00	
Long-term Binge Drinking	4.49	3.05	0.00	22.00	

Correlation coefficients were used to analyze the relationships between the AUDIT, Attitudinal Familism Scale, Brief-ARSMA-II Scale, Life Events-5 checklist, and two binge drinking questions (Short-term binge drinking and Long-term binge drinking) (See Table 4). A significant, weak, positive correlation existed between the AUDIT and short-term binge drinking ($r = .44$, $p < .05$) and long-term binge drinking ($r = .32$, $p < .05$). This suggests that individuals who reportedly had high drinking behaviors tend to also display higher binge drinking behavior.

A statistically significant, weak, negative correlation existed between *familismo* and long-term binge drinking behavior ($r = -.26$, $p < .05$).

Table 4

Correlations of All Study Variables

Measure	1	2	3	4	5	6	7	8
1. AUDIT	--							
2. AFS	-.06	--						
3. Brief ARSMA-II	.09	-.05	--					
4. LEC-5	.12	.03	.04	--				
5. Short-term binge drinking	.44**	-.13	.13	-.04	--			
6. Long-term binge drinking	.32**	-.30**	.12	-.07	.21	--		
7. English as the Primary language	.15*	.70**	.70	.00	.23**	.10	--	
8. Income	.13	-.18**	.45**	.01	.16*	.36**	.43**	--

Note. * $p<.05$ ** $p<.01$

Using the natural log of income, there was a statistically significant negative and weak correlation between income and *familismo* (r=1.18, p<.01). This suggests that individuals who have higher annual incomes tend to demonstrate a lower presence of *familismo*. A statistically significant, weak and positive correlation was present between Income and acculturation (r=.45, p<.01), suggesting that individuals who have higher levels of acculturation tend to also make higher earnings. Furthermore, statistically significant, positive and weak correlations existed between income and short-term (r=.16, p<.05) and long-term binge drinking (r=.36, p<.01). Suggesting that as an individual's annual household income increases so does their short-term and long-term binge drinking behavior. Lastly, income was statistically, positive significant with English as the primary language spoken at home (r=43, p<.01), suggesting that individuals who report higher household annual incomes tend to speak more English at home.

Furthermore, there was a statistically significant, positive, strong correlation between English as the primary language spoken at home and acculturation (r = .70, p <.05). There was a statistically significant, weak, correlation between alcohol consumption and English as the primary language. Furthermore, English as the primary English as the primary language spoken at home was also statistically significant, weak, correlation with short-term drinking behavior

correlation between (r = .23, p <.05). This suggests that individuals whose English was the primary language spoken at home tended to demonstrate higher levels of acculturation as well as higher short-term binge drinking behavior. Females demonstrated statistically significant, weak, positive correlation with trauma exposure (r=.17, p<.05). Lastly, there was no relationship between problematic drinking behavior and familism, acculturation, or exposure to trauma.

Next, a standard multiple linear regression was conducted to predict drinking behavior using the following predictor variables: *familismo,* acculturation, trauma exposure, and binge drinking and demographic variables such as age, gender, income, etc. (See Table 5). Preliminary analyses were conducted in order to determine that no assumptions of normality, linearity, multicollinearity, and homoscedasticity were violated. It is important to note that during that sexual orientation heterosexual was used as a referent during the dummy coding process. Demographic variables such as parent's marital status, number of years parents have been married, age, gender, sexual orientation, language, place of birth, and extracurricular participation were included in Block 1. No statistically significant results were reported, F (12, 128) = 1.14, p=.333, and the model explained only 9.7% of the variance in drinking behavior, R^2= .097. Block 2 consisted of AFS, Brief ARSMA-II, and LEC-5 however there was no statistically significant results F (15,125) =

Table 5
Multiple Regression Models

	β	*B*	*SE*
Model 1			
Parents together	.02	.48	2.30
Number of years parents together	.22	.15	.08
Income	.03	.13	.47
Age	-.13	-.14	.12
Males	.08	1.08	1.15
Homosexual	.11	2.61	2.05
Bisexual	.03	.51	1.74
Prefer not to say	-.09	-4.99	4.99

Table 5 Continued

Multiple Regression Models

	β	*B*	*SE*
Participation in Extracurricular Activities	.11	1.12	.96
Model 2			
Parents together	.02	.54	2.30
Number of years parents together	.24	.16	.08
Income	.04	.19	.49
Age	-.17	-.19	.13
Males	.10	1.36	1.17
Homosexual	.11	2.63	2.06
Bisexual	.00	.01	1.77
Prefer not to say	-.11	-6.47	5.15
Primary Language is English	.13	1.27	1.35
Primary Language is Spanish	-.13	-1.32	1.19
Born in the US	.03	.37	1.40
Participation in Extracurricular Activities	.08	.87	.96
LEC-5	.17	.04	.02
Brief ARMSA-II	-.12	-.39	.45
AFS	.01	.00	.02
Model 3			
Parents together	-.02	-.37	2.02
Number of years parents together	.28**	.19	.07
Income	-.07	-.33	.45
Age	-.18	-.19	.11
Males	.07	.89	1.03
Homosexual	.08	1.80	1.82
Bisexual	.03	.66	1.56
Prefer not to say	-.08	-4.58	4.51
Primary Language is English	.10	.98	1.20
Primary Language is Spanish	-.09	-.95	1.04
Born in the US	.07	.92	1.24
Participation in Extracurricular Activities	.02	.20	.85
LEC-5	.19**	.05	.02
Brief ARMSA-II	-.13	-.42	.40
AFS	.10	.02	.02
Short-term Binge Drinking	.38**	1.25	.26
Long-term Binge Drinking	.28**	.45	.14

* Indicates $p < .05$ ** $p<.001$ R^2=.097 for Model 1; R^2=.125 for Model 2; R^2=.341 for Model 3

1.19, p=.291. Furthermore, Model 2 explained about 12.5% of the variance, $R^{2=}$.125.

Lastly, short-term binge drinking and long-term binge drinking were included in Block 3. After including short-term binge drinking and long-term binge drinking, the total variance explained by the model as a whole was 34.1%, F (17, 123) = 3.74, p<.001. Statistically significant predictors within the model included: the number of years the parents were together (β=.28, p<.01), the LEC-5 (β=.19, p<.05), Short-term binge drinking (β=.38, p<.001), Long-term binge drinking (β=.28, p<.001). Acculturation (β=-.13, p=.295) and *familismo* (β=.10, p=.218) were not statistically significant predictors in the model.

Results from the present study supported the original hypothesis that trauma exposure lead to higher alcohol consumption. The number of years the parents were together was also correlated with increase behavior of alcohol consumption thus supporting the original hypothesis. Furthermore, both short-term binge drinking behavior and long-term binge drinking behavior was statistically significant and in accordance with the original hypothesis. *Familismo* and acculturation were not in accordance to the original hypothesis as there were no significant results.

DISCUSSION

The current research analyzed the effects between alcohol use in relationship with *familismo,* acculturation, binge drinking and trauma exposure. The results from the study demonstrated that there is a positive and statistically significant relationship between alcohol use and exposure to trauma. In other words, trauma exposure is significantly associated to alcohol consumption in this sample of Latino college students living in the border. The highest reported trauma exposure ratings that individuals reported occurred to them personally were that of a transportation accident (39.3%), any other very stressful event or experience (31.4%), other unwanted or uncomfortable sexual experience (22%), and physical assault (16.4%). The second highest ratings were that of individuals learning of violence. A total of 17% of individuals reported they learned of someone's captivity, 16% reported learning of someone's severe human suffering, and 16% reported learning of someone's sudden violent death. These findings are congruent with those reported by Alvarez et al. (2007) in that exposure to trauma was linked with higher rates of substance use, specifically alcohol use and binge drinking on the border city. The findings are also congruent with studies that have demonstrated that trauma exposure and PTSD increase the risk of increase in alcohol use and thus developing AUD (Kachadourian et al., 2014).

There was no statistically significant relationship between alcohol use and *familismo.* These findings are incongruent with research that has demonstrated that moderate to high levels of *familismo* promote positive behavior such as avoiding bringing dishonor to the family and thus meeting the family expectations (Steidel & Contreras, 2003). No such relationship was evident in the current study. Furthermore, the findings contrast studies that have demonstrated that *familismo* acts as a protective factor against trauma exposure (Kennedy & Ceballo, 2013) as

well as with substance use (Strunin et al., 2015; Dillon, De la Rosa, Sastre, & Ibañez, 2013). The lack of relationship between *familismo* and alcohol use could be due to the participants' age since majority of the participants were juniors and seniors and possibly may not live at home anymore, thus weakening the presence of *familismo.*

The family structure such as if the individual's parents were together was assessed followed by assessing the number of years the parents were together. The analyses demonstrated a positive statistically significant relationship between the number of years the parents were together and alcohol use. These findings suggest that more years the parents are together results in an increase in alcohol use in participants. These findings contrast those found by Wagner at al. (2010) in which family structure such as parental unity was demonstrated to act as a protective factor as opposed to a single parent status which acts as a risk factor. It is important to note that there was no statistically significant relationship between alcohol use and parents' status of being married or divorced. It is speculated that perhaps parental discordance could be impacting the students negatively in that they engage in substance use as a means of self-medication. However, further research is needed to analyze the influences of possible parental problems that can lead to students' alcohol consumption.

In regards to alcohol use and acculturation, there were no statistically significant results in the present study. These findings contrast with previous studies showing that higher levels of alcohol use are correlated with the number of years lived in the United States (Wagner et al., 2010; Flaskerud, 2007). The current study's findings also contrasted the studies that demonstrated that U.S. born Hispanic individuals would engage in more alcohol consumption and have a higher risk of developing alcohol use problems than those individuals who are foreign-born (Szapocznik et al., 2007; De La Rosa, Dillon, Sastre, & Babino, 2013; Kimbro,

2009; Alvarez, Jason, Olson, Ferrari, & Davis, 2007). The lack of relationship in the present study could be due to other external factors such as being academically motivated and thus students might limit their alcohol intake. However, further investigation is warranted in order to determine what other external factors could have influenced the study's results.

A statistically significant positive relationship resulted between alcohol consumption in relationship with short-term binge drinking and long-term binge drinking. These findings contribute to the literature reports on individuals engaging in binge drinking tend to do so with high intensities, thus increasing a risk of problematic alcohol use (Naimi et al., 2003; Esser et al., 2014). Given that the population in the current study were all college students, the statistically significant relationship between alcohol use and binge drinking contribute to the NIAAA'S findings suggesting that alcohol use is commonly used in the college population (NIAAA, 2013). Furthermore, the findings are also in congruence with those of Wechsler and Nelson (2001) in that the majority of binge drinkers also met criteria for AUD.

IMPLICATIONS

The current study's results offer insight into the relationship of how short-term and long-term binge drinking behavior along with trauma exposure can predict AUD in Hispanic college students living in a US-Mexico border. More specifically, future interventions could focus on the cultural scripts regarding women and men in the Hispanic culture as the participants in the study were predominantly women. Thus, indicating the need for gender-tailored interventions in alcohol use and binge drinking (Vickers, Patten, Bronars, & Lane, 2004). Considering the majority of the participants were women, future studies should focus on understanding the unique factors that influence women's binge drinking behavior (Vickers et al., 2004).

Furthermore, the study contributes to the limited research there is among trauma exposure and substance use in the US-Mexico border. Although controlling the exposure to trauma is not realistic, future interventions could aim at preventing trauma exposure from developing into Acute Stress Disorder or PTSD. Prevention could occur in a form of psychoeducation such as in outreach workshops in the community regarding topics such as PTSD and AUD. Psychoeducational workshops could also focus on how engaging in frequent binge drinking increases a risk for AUD. Such workshops could also offer free alcohol consumption assessments to the community such as the AUDIT which can then be interpreted by appropriately trained professionals. The workshops can also incorporate local agencies such as counseling and substance use treatment facilities free of charge.

LIMITATIONS AND FUTURE RESEARCH

The present study has several limitations. It should be noted that the total number of Hispanic participants recruited was 375. However, only those individuals who consumed alcohol were included in the analyses thus reducing the number of participants to 140. It should be noted that the AUDIT mean score of the participants was 6, classifying them as Low-Risk Drinkers. Thus, the findings are more in regards to Low-Risk Drinkers as opposed to High-Risk Drinkers or Alcohol Dependence. Another limitation of the study includes that individuals who have serious alcohol dependence could potentially have dropped out of school. This indicates that the study could be sampling from individuals who do not consume alcohol in hazardous amounts.

Furthermore, the disproportionate gender ratio could have impacted the study's results considering that 81.3% of the individuals were females. These findings are not in congruence with other studies reporting that male students engage in more alcohol consumption behavior than do females (Jones et al., 2001; McBride et al., 2014; Wechsler et al., 2000; Howland et al., 2010; McKinnon et al., 2003). However, a study conducted by Vickers, Pattern, Bronars, and Lane (2004), 61% of the women reported binge drinking in the past two weeks. It is essential to note that limited research offers a window into gender differences regarding binge drinking.

Future studies should focus on assessing the social settings or locations in which the individuals would engage in alcohol use as it has been demonstrated that women tend to engage more in alcohol consumption when they are in social settings (Davis, Norris, Hessler, Zawacki, Morrison, & George, 2010). Also, upperclassmen constitute for 73.3% of the participants while lower classmen constituted 26.7% of the participants. Future studies should aim for a proportionate gender and classification balance in participants. Another limitation of the current study involved the probability sample which was drastically reduced. The total number of

participants reduced drastically when only including those individuals who reportedly consumed alcohol. Thus, the generalizability of the findings to other populations could be affected in that the current study's sample was reduced to only 140, upperclassmen, female, Hispanic, participants living in a border city.

Lastly, the binge-drinking open-ended questions that assessed short-term binge drinking and long-term binge drinking could have acted as a limitation in the study. The questions lack measuring duration of drinking that differs more than the 2-hour duration established by NIAAA (Hingson, 2004). Also, the questions do not assess for the frequency of binge drinking episodes over a long-period of time but rather assesses an altogether quantity of alcoholic beverages over a long-period of time (Presley & Pimente, 2007). Hence, future research should aim to create a binge drinking assessment that compromises more detailed information on binge drinking behavior.

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APPENDIX

Demographic Questionnaire

For the following items, please select the *one* response (unless otherwise specified) that is most descriptive of you or fill in the blank as appropriate.

Age: _____

Gender: ☐ Male ☐ Female ☐ Prefer not to say

Sexual Orientation: ☐ Heterosexual ☐ Homosexual ☐ Bisexual ☐ Prefer not to say
☐ Other:

Marital Status:

Single ☐ Widowed ☐
Married ☐ Divorced ☐

Classification: ☐ Freshmen ☐ Junior ☐ Sophomore ☐ Senior

GPA: _____ Involvement in TAMIU Extracurricular Activities? ☐ Yes ☐ No

Ethnicity:
Check all boxes that apply.
☐ Caucasian/White ☐ Hispanic/Latino
☐ African-American ☐ Asian/Pacific Islander
☐ Native American ☐ Puerto Rican
☐ Middle-Eastern ☐ Asian Indian
☐ Other (specify) _____

Primary Language Spoken at Home:
☐ English
☐ Spanish
☐ French
☐ Other _____

Place of Birth: _____

Number of years you have lived in the United States: _____

Number of years you have attended this college/university: _____

Are you parents still together:_____If yes, for how long:_____

Are you currently employed? ☐ Yes; Part time (work less than 30 hours per week) ☐ Yes; Full time (work 40 hours per week) ☐ Yes; Over time (work more than 40 hours per week) ☐ Unemployed

Household Annual Income: _____

APPENDIX
Attitudinal Familism Scale

Please rate each statement using the following response scale:	**1 Strongly disagree**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10 Strongly agree**
1. Children should always help their parents with the support of younger brothers and sisters, for example, help them with homework, help the parents take care of the children, and so forth.	1	2	3	4	5	6	7	8	9	10
2. The family should control the behavior of children younger than 18.	1	2	3	4	5	6	7	8	9	10
3. A person should cherish the time spent with his or her relatives.	1	2	3	4	5	6	7	8	9	10
4. A person should live near his or her parents and spend time with them on a regular basis.	1	2	3	4	5	6	7	8	9	10
5. A person should always support members of the extended family, for example, aunts, uncles, and in-laws, if they are in need even if it is a big sacrifice.	1	2	3	4	5	6	7	8	9	10
6. A person should rely on his or her family if the need arises.	1	2	3	4	5	6	7	8	9	10
7. A person should feel ashamed if something he or she does dishonors the family name.	1	2	3	4	5	6	7	8	9	10
8. Children should help out around the house without expecting an allowance.	1	2	3	4	5	6	7	8	9	10
9. Parents and grandparents should be treated with great respect regardless of their differences in views.	1	2	3	4	5	6	7	8	9	10
10. A person should often do activities with his or her immediate and extended families, for example, eat meals, play games, or go somewhere together.	1	2	3	4	5	6	7	8	9	10
11. Aging parents should live with their relatives.	1	2	3	4	5	6	7	8	9	10
12. A person should always be expected to defend his/her family's honor no matter what the cost.	1	2	3	4	5	6	7	8	9	10
13. Children younger than 18 should give almost all their earnings to their parents.	1	2	3	4	5	6	7	8	9	10
14. Children should live with their parents until they get married.	1	2	3	4	5	6	7	8	9	10
15. Children should obey their parents without question even if they believe they are wrong.	1	2	3	4	5	6	7	8	9	10
16. A person should help his or her elderly parents in times of need, for example, helping financially or sharing a house.	1	2	3	4	5	6	7	8	9	10
17. A person should be a good person for the sake of his or her family.	1	2	3	4	5	6	7	8	9	10
18. A person should respect his or her older brothers and sisters regardless of their differences in views.	1	2	3	4	5	6	7	8	9	10

APPENDIX
Brief ARMSA-II

Please read each statement and then circle the number corresponding to the appropriate point on the following five-point scale.

	1 Not at all	**2 Very Little/ Not very much**	**3 Moderately**	**4 Much/ Very Often**	**5 Almost always/ extremely often**	**0 N/A**
1. I speak Spanish.	1	2	3	4	5	0
2. I speak English.	1	2	3	4	5	0
3. I enjoy speaking Spanish.	1	2	3	4	5	0
4. I associate with Anglos.	1	2	3	4	5	0
5. I enjoy English language movies	1	2	3	4	5	0
6. I enjoy Spanish language TV	1	2	3	4	5	0
7. I enjoy Spanish language movies	1	2	3	4	5	0
8. I enjoy reading books in Spanish.	1	2	3	4	5	0
9. I write letters in English	1	2	3	4	5	0
10. My thinking is done in the English language	1	2	3	4	5	0
11. My thinking is done in the Spanish language	1	2	3	4	5	0
12. My friends while I was growing up were of Anglo origin	1	2	3	4	5	0

APPENDIX
LEC-5

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event **check one or more** of the boxes to the right to indicate your response.

	5 Happened to me	**4 Witnessed it**	**3 Learned about it**	**2 Part of my job**	**1 Not sure**	**0 Doesn't apply**
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)	5	4	3	2	1	0
2. Fire or explosion	5	4	3	2	1	0
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)	5	4	3	2	1	0
4. Serious accident at work, home, or during recreational activity	5	4	3	2	1	0
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)	5	4	3	2	1	0
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)	5	4	3	2	1	0
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)	5	4	3	2	1	0
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat to harm)	5	4	3	2	1	0
9. Other unwanted or uncomfortable sexual experience	5	4	3	2	1	0
10. Combat or exposure to a war-zone (in the military or as a civilian)	5	4	3	2	1	0
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)	5	4	3	2	1	0
12. Life-threatening illness or injury	5	4	3	2	1	0
13. Severe human suffering	5	4	3	2	1	0
14. Sudden violent death	5	4	3	2	1	0
15. Sudden accidental death	5	4	3	2	1	0
16. Serious injury, harm, or death you caused to someone else	5	4	3	2	1	0
17. Any other very stressful event or experience	5	4	3	2	1	0

APPENDIX
AUDIT

Directions: Read each item below and mark the rating that best describes you.

Do you consume alcohol? ☐ Yes ☐ No

1. How often do you have a drink containing alcohol?	Never	Monthly Or less	2-4 time a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1-2	3 or 4	5 or 6	7-9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were unable to stop drinking once you started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured as a result of your drinking?	No	Yes, but not in the last year	Yes, during the last year		
10. Has a friend, relative, or doctor or other health worker been concerned about your drinking or suggested you cut down?	No	Yes, but not in the last year	Yes, during the last year		

11. Over the past 2 weeks, how many occasions have you had [5 (male)/4 (female)] or more drinks in a row? _____

12. What is the greatest number of drinks you consumed in a 2-hour period during the past 12 months? _____

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Gonzalez, D. (2017, March). Binge Drinking Among Hispanic Students in the U.S.-Mexico Border: Exploring the Impact of Trauma Exposure and Cultural Correlates. Lamar Bruni Vergara & Guillermo Benavidez Z Academic Conference, Texas A&M International University, Laredo, Texas.

Gonzalez, D. (2017, March). Exploring Views on Dating Violence and Gender roles in a Hispanic Serving Institution: A Qualitative Study". Lamar Bruni Vergara & Guillermo Benavidez Z Academic Conference, Texas A&M International University, Laredo, Texas.