

PERCEIVED STRESS AND DISCRIMINATION  
INFLUENCE ON ALCOHOL USE AMONG HISPANICS  
IN A CULTURALLY PLURAL SOCIETY

By

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Abstract: High rates of discrimination and perceived stress are experienced by minority groups adjusting to a culturally-plural society. Hispanics are more susceptible to negative methods of coping, particularly alcohol use, to function as an escape, or as an attempt to alleviate or resolve personal problems. Because Hispanics are the fastest growing minority group (United States Census Bureau [USCB], 2011), it is important to identify the extent that alcohol is used to cope with discrimination and stress. Two invitations were sent to a random sample of 5000 undergraduate students to participate in a cross-sectional online survey. Students reported on basic demographic questions pertaining to race/ethnicity, gender, age, height, weight, Greek affiliation and year in school. In addition, the survey assessed for levels of discrimination, perceived stress and alcohol use in the past 30 days. Due to the nature of the study, the sample was restricted to evaluate only Hispanics and Non-Hispanic Whites to determine if levels of the variables were more prevalent in the Hispanic population than in Non-Hispanic Whites. Results provide evidence that Hispanics (n = 30) and Non-Hispanic Whites (n = 445) experienced similar levels of discrimination and perceived stress and revealed similar drinking habits in the last 30 days. Findings suggest that discrimination is experienced among both minority and majority populations in a southern regional university. Results of the survey revealed that Hispanics and Non-Hispanic Whites report having experienced discrimination in as much as 77% and 71% of the population, respectively. More than 80% of each population consumed alcohol at some point in the past 30 days. Although no correlation was revealed between alcohol consumption in the past month and discrimination or perceived stress, studies suggest that alcohol use as a coping method is linked to acculturation issues such as language conflicts, culture differences and customs in addition to discrimination and experiences of stress. Future studies have the capacity to benefit college students, especially minorities, at college campuses, by identifying influencing decisions and coping methods.

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## CHAPTER I

### INTRODUCTION

Hispanics are the fastest growing ethnic group in the United States (USCB, 2011). As the population of the United States continues to become more diverse, it is important to understand cross-cultural influences on individuals with high perception of discrimination (Berry, Poortinga, Segall, & Dasen, 1992; Berry, 1997). *Discrimination* is the prejudicial treatment of an individual based on their actual or perceived membership in a certain group or category (Flores et al., 2008; Krieger & Sidney, 1996; Mossakowski, 2003). An individual does not have to be harmed in order to experience discrimination; they must just feel as if they have been treated worse than others for some arbitrary reason. Individuals who report experiencing discriminatory acts tend to be minority populations and those experiencing a new culture for the first time (Broman, Mavaddat, & Hsu, 2000; Jackson et al., 1996; Mossakowski, 2003).

Because of immigration, most societies, especially in the southern and western regions of the U.S, have become culturally plural (Berry, 1997; UCSB, 2011). *Culturally plural* societies consist of a society with people of many cultural backgrounds who come to live together in a diverse society (Kymlicka, 1995). Acculturation is the primary concern for recent immigrants within culturally plural societies: immigrants must possess the ability to adopt conforming society behavioral norms in order to successfully achieve similar lifestyles too those currently living there (Berry, Phinney, Sam, & Vedder, 2006). Acculturation is the process of cultural and

psychological changes that result from intercultural interaction (Berry, 2005). At an individual level, acculturation involves modification of a person's behavioral customs. At group levels, acculturation involves changes in social structures and institutions and in cultural norms.

Acculturation occurs as a result of cultural contact which is likely to result in stress as individuals struggle to keep ethnic identities while learning to develop new ethnic relations with a new culture (Berry, 1999; Phinney, 1992). *Ethnic relations* are focused on understanding, both within and across ethnic groups, how individuals perceive, evaluate and behave towards each other. *Ethnic identity* is a product of the socialization process related to self-identification of individuals, their sense of commitment and belonging, the attitude towards one's own group and a focus on their ethnic and racial attributes (Andujo, 1988; Phinney, 1992).

*Acculturative stress* occurs as a result of acculturation due to failure to navigate between cultures, and the struggle to adapt to a new culture psychologically and socially. Acculturative stress can stem from dissimilar cultural values and practices, language difficulties, and discrimination resulting from acculturation (Crockett et al., 2007). In addition, loss of social support as immigrants transition from their country of origin into a new society increases acculturative stress (Hovey, 2000). As some seek to adjust and reevaluate current cultural barriers, others may attempt to cope with acculturative stress. Depending on period of immigration, some immigrants may find it harder than others to adapt to new traditions and learn new cultural norms. In fact, it has been reported that later generational Hispanics (second or third generation) find adapting to a new standard of living easier than first generation or primary Hispanic immigrants (Mena, Padilla, & Maldonado, 1987). Later generation Hispanic youth acculturate through continued involvement in cultural-Hispanic heritage and the prevailing national culture (Berry et al., 2006). Minority adolescents rely on coping methods, specifically substance use, to attenuate the acculturative stressor (Abbey, Smith, & Scott, 1993; Kairouz, Gliksman, Demers, & Adlaf, 2002).

Berry and colleagues found that 73.8% of migrant youth, age 13 – 18 showed very little desire to acculturate to the dominant national culture: roughly a quarter (22.4%) of that group showed no desire to acculturate (2006). They concluded that experiences of discrimination lead to rejection of the host society and preoccupation with their own ethnic identity. Failure to assimilate to the cultures leads to additional perception of acculturative and discriminatory stress (Comasco, Berglund, Orelund, & Nilsson, 2010; Windle & Windle, 1996).

With the rapid population growth of Hispanics in the last 2 decades it is important to identify tips for assimilation for host and visiting cultures. *Assimilation* refers to the process by which a person or a groups native language/culture come to resemble those of another group and, depending on the circumstances, could either be a quick or gradual change (Smith, 2003). It is a complex process of integrating into a new society or surroundings. When members of a new society become indistinguishable from members of the host society, full assimilation has occurred (Smith 2003). In order for immigrants to achieve assimilation Gans (2007) stated that the non-immigrant or host society must formally or informally accept and welcome the immigrant society. Both immigrant and prevailing populations often dispute whether assimilation is desirable considering the values one must abandon. Although admittance to some host societies requires no formal approval, some visitors may feel as if there are gatekeepers who bar entry into a certain environment and seek to gain the dominant populations acceptance (Gans, 2007). In lieu of assimilation, individuals may instead resort to methods such as alcohol use to mitigate the stress being experienced.

Kairouz and colleagues revealed that 2.1% of undergraduates said drinking functions as their coping method when they want to escape stressful conditions and alleviate personal problems and 7.5% drink for other compensatory reasons, such as to relax (2002). In addition to coping, students drank alcohol for aesthetic reasons: including celebrating (21.3%), to be sociable or polite (16.9%) and for reasons of complying with others (6.0%) (Kairouz et al., 2002). It is

important to discover the extent of perceived discrimination and stress experienced by both Hispanics and minorities and to discover if certain coping methods are being used and if those methods are detrimental to one's health (Comasco et al., 2010; Kairouz et al., 2002; Simons, Correia, & Carey, 2000).

The effect of stress on adolescent and college aged students has been well studied, particularly financial and personal stress. In fact, a meta-analysis revealed that stress as a result of academic, financial, and personal factors was considerably higher among Hispanic college students than those of Non-Hispanic White students (Quintana, Vogel, & Ybarra, 1991). While the stressors derive from concerns of maintaining academic and financial standards, Hispanics must also balance additional stressors of acculturation and discrimination resulting from their minority status (Quintana et al., 1991; Rodriguez, Mira, Myers, Morris, & Cardoza, 2003). Despite the health concerns resulting from average stressors, few studies have focused on perceived stress as a result of experiencing discrimination and the probability of these stressors leading to substance use, namely alcohol, as a coping method. Such research is needed to understand these specific transitional problems (perceived stress, discrimination) of minorities, specifically Hispanics, into a dissimilar host society and whether alcohol is used as a detrimental coping method.

Keywords

*Acculturation, Discrimination, Culturally Plural, Economic Mobility, Social Mobility, Ethnic Identity, Ethnic Relations, Acculturative Stress, Assimilate*

## CHAPTER II

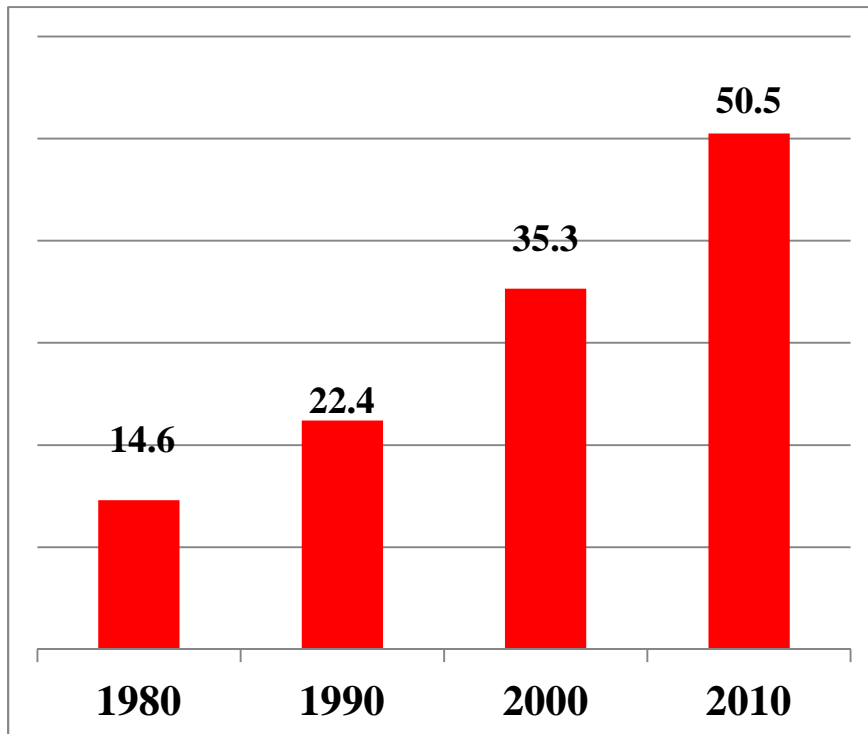
### REVIEW OF LITERATURE

#### *Population*

The United States' Hispanic population is expected to double by the year 2050, by which time one in three Americans will be of Hispanic descent. The Hispanic population of the United States has grown rapidly in the past decade. Hispanics are currently the 2nd largest racial/ethnic group in the U.S. behind Non-Hispanic White Americans (USCB, 2011). Between 1990 and

**Figure 1**

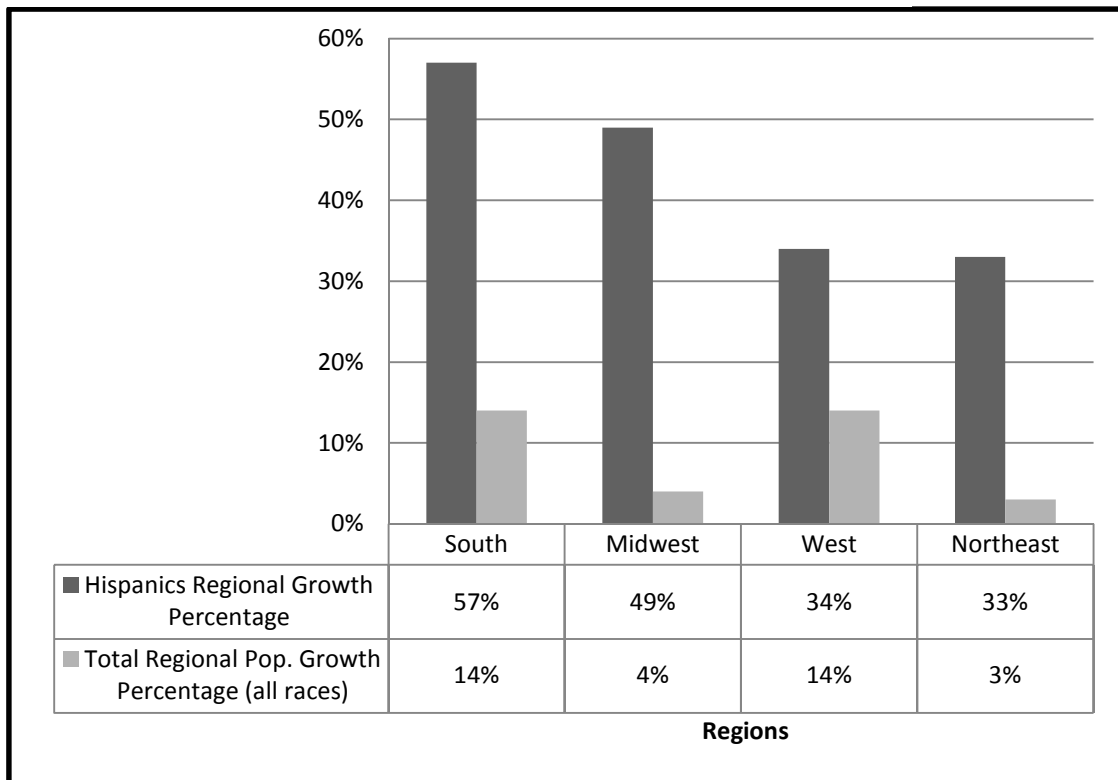
**U.S. Hispanic Population Four Decades of Growth (IN MILLIONS)**



2000, there was a 57% increase in the number of Hispanics in the United States (Figure 1; USCB, 2011). Between 2000 and 2010 the Hispanic population grew by 43% in the United States, greater than four more times the growth of the total United States population (Figure 1). Today, the Hispanic population has grown to over 50 million residents, accounting for 16.3% of the United States population (Table 1).

**Figure 2**

**2010 Regional Growth Percentage: Hispanic vs. Total Population Growth**



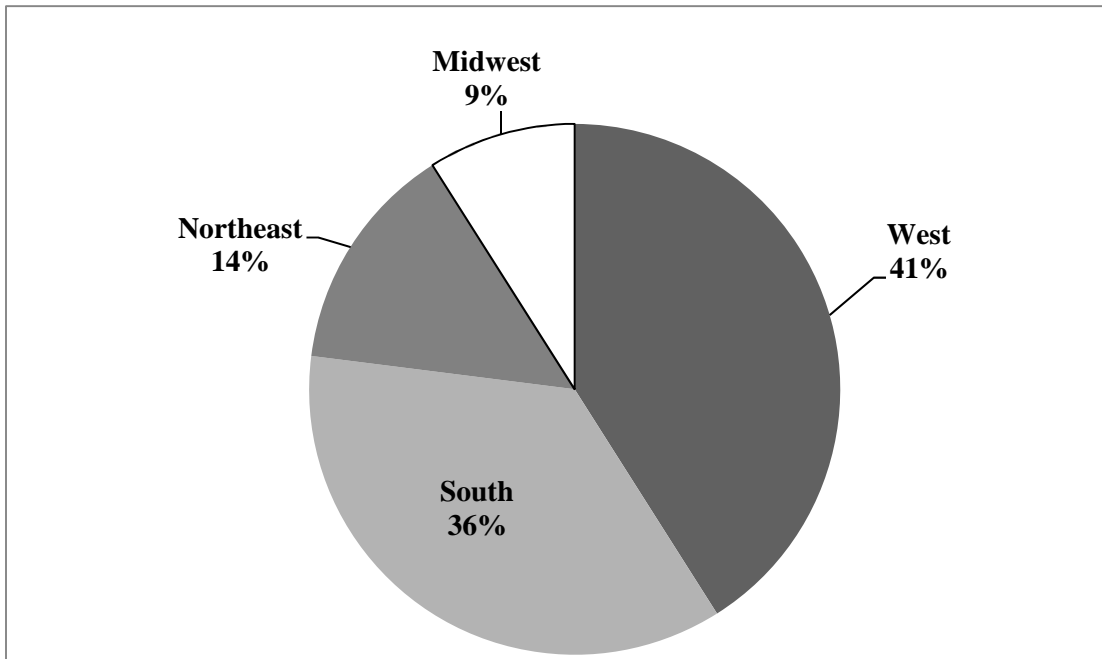
Population increases are due to recent immigration of Hispanics and to higher birth rate among Hispanics, particularly immigrants (USCB, 2013). In 2010, one-third of Hispanics were under the age 18. Hispanics represent more than a quarter of the nation’s youngest residents, accounting for 26.3% of the population younger than age 1, second only to Non-Hispanic Whites, 49.6%. African Americans represent 13.7% of the population younger than age 1 and Asians represent 4.4%. The combined long-term results of the young Hispanic population and the

transition to higher birth rates among non-white minorities, specifically Hispanics, will result in non-white minorities becoming the nation's majority population by the year 2050 (USCB, 2013). By that year, Hispanics are projected to continue to account for most population growth.

Hispanics population growth percentages in the United States vary by region. Every region of the United States experienced a growth in Hispanic population; largest in the South and West regions. Today, 29% of the overall population in the West is Hispanic as well as 16% of the population of the South, 13% of the population in the Northeast, and 7% of the Midwest's population. Trends indicate continual growth of the Hispanic population and evidence suggests by the year 2050 Hispanics will constitute 30% of United States residents (USCB, 2011). In all regions, Hispanics population growth is disproportionate to general population growth: some regions experiencing more than ten times the increase in Hispanic population growth than overall population growth than overall population growth (Figure 2). Currently, 41% of total Hispanic population in the United States lives in the West, 36 % in the South, 14 % in the Northeast and 9% in the Midwest (Figure 3).

**Figure 3**

**Regional Dispersal of Entire Hispanic Population in the U.S.**



Thirty-six percent of all Hispanics live in the 13 states located in the southern regions of the United States, which includes: Texas, Oklahoma, Louisiana, Arkansas, Mississippi, Alabama, Tennessee, Georgia, Florida, Kentucky, South Carolina, North Carolina, and Virginia (USCB, 2011). Texas and Oklahoma make up 47% of the Hispanic population in the South; 9.5 million and 279,000 respectively (USCB: Oklahoma, 2013; USCB: Texas, 2013). Hispanic populations of both states are 38% in Texas and 9.2% in Oklahoma (USCB, 2013). Living as a minority, especially Hispanic, in Texas may be less stressful than living in Oklahoma because Hispanics are four times larger proportion of the Texas population than the Oklahoma population. Certain areas in Oklahoma still remain underrepresented with minority populations, specifically Hispanics, despite the high growth of the Hispanic populations in the south and more than a third of the Hispanic population living in the South region.

For the second consecutive year the Hispanic population in Oklahoma grew at a steady pace (3.3%). However, some areas in Oklahoma continue to remain below the statewide average. Stillwater, Oklahoma has a population 46,048 and is in the heart of Payne County (USCB, 2013). Hispanics are underrepresented in Payne County, Stillwater, and Oklahoma State University compared to the state of Oklahoma, see Table 1.

**Table 1**

**Representation of Hispanic Population in Regions of Oklahoma**

	<b>U.S. Population</b>	<b>Oklahoma</b>	<b>Payne County</b>	<b>Stillwater</b>	<b>OSU</b>
Total Population	313,914,040	3,814,820	77,988	46,048	25,544
Minorities%	38.50%	33.40%	22.10%	23.60%	23.39%
Non-Minorities%	61.50%	66.60%	77.90%	76.40%	76.61%
Hispanic%	16.30%	9.20%	4.20%	4.30%	4.06%
Non- Hispanic White%	63.40%	68.20%	78.90%	77.00%	N/A
White%	78.10%	75.80%	82.20%	79.50%	70.37%



## *Acculturation*

Roche and Kuperminc stated that in order for Hispanics to compete in the American culture they must adapt to traditions and standards in a society unlike their own (2012). This process of acculturation was defined by Berry as a development of cultural and psychological changes that include numerous forms of mutual accommodation, leading to some longer-term psychological and sociocultural adaptations between both groups (2005). Unlike assimilation, acculturation does not involve the members of a new society becoming indistinguishable from members of the host society, but instead a mutual accommodation or adoption of cultural traits. Adaptations include language development, food preferences, and adopting various forms of dress and social interactions that are characteristic of each individual group. Navigation between cultures adds further stress in addition to the stress of relocating (Roche & Kuperminc, 2012). When culturally distinct groups remain in the presence of each other, adaption will continue to be practiced (Berry, 2005). Acculturative stress can be defined as the tension experienced when a minority group member acculturates to a dominant culture (Berry, 1997). Ethnic minorities must deal with their minority status as a stressor in addition to the daily stressors faced by non-minorities (Flores et al., 2008). Stress experienced by ethnic minorities during acculturation often stem from problems conforming to the dominant culture and can impact development and display of human individual behavior (Berry, 2005). Berry stated emotions are erratic for immigrants, more so than others (2005).

Historically, the concept of acculturation resembled assimilation and primarily focused on immigrants social and behavioral changes following entry and settlement in a new country. However, the current definition of acculturation emphasizes two-way relationships between ethno-cultural groups mutual influence that result in culturally plural societies (Berry, 2005). The acculturative stress that results from experiences of perceived discrimination is highly dependent on individual level characteristics of the immigrant and their descendants (second or third

generation immigrant) (Gans, 2007). Immigrants are more susceptible to acculturative stress due to the resentment they perceive occurs because of their nationality (Gans, 2007). When first-generation immigrants attempt to adapt to a new environment, their ability to stay composed and maintain their individuality surrenders to feelings of depression, confusion, alienation, and anxiety because of failure to acculturate (Berry, 1997). Acculturative stress goes beyond the skin color of an individual. Amongst the differences in beliefs and traditions also exist the differences in languages and education and the individuals' effort to assimilate between un-familiar cultures (Vega, Zimmerman, Gil, Warheit, & Apospori, 1994). Acculturation happens unknowingly to the individual, and is sometimes unintentional by the host society. However, it can be intentional or purposive, such as pressure from someone to do well on a task or status-seekers learning the lifestyles of those whose status they seek to attain (Gans, 2007).

Typically, stress among minorities in immigrant and later-generation college students differ (Mena et al., 1987; Padilla, Wagatsuma, & Lindholm, 1985). A study by Mena et al. (1987) revealed that a sample of first generation immigrants who migrated before the age 12 (early immigrants) had significantly lower acculturative stress scores than those who immigrated after age 12 (late immigrants). First-generation immigrants (immigrant status) experience more acculturative stress than later generation immigrants (second or third), with each succeeding generation experiencing less stress (Mena et al., 1987; Padilla et al., 1985). Second (both parents foreign born, but respondent born in U.S.), third generation (both parents and respondents born U.S.), and mixed generation (one parents and respondents born U.S. and one parents foreign born) Hispanics were more capable of coping with acculturative stress because they have a wide ranging social network for social support (Mena et al., 1987).

## *Discrimination*

Immigrants' perception of discrimination stems from beliefs that ethnic background causes differential treatment (Mena et al., 1987; Phinney, 1992). It is the perception of unfair treatment in relation to others (Krieger & Sidney, 1996). Therefore, acts of discrimination involve two participants, the perpetrator/s and the victim/s (Wright, 1994). This perception could be a result of acculturation and failure to achieve a sense of belonging. Perceived discrimination is therefore subjective and based on the individual's perception. Specifically, discrimination is based on the extent persons perceive or evaluate behavior, aimed at them directly or at their group, to be acts of discrimination, regardless of whether the perception correctly reflects the reality of the behavior (Wright, 1994).

At times, studies of discrimination shift between individual and group experiences of discrimination, also known as the personal/group discrimination discrepancy. This type of discrepancy involves the tendency of minority or disadvantaged group members to perceive higher levels of discrimination directed at their group in general than at themselves (Taylor, Wright, Moghaddam, & Lalonde, 1990). For example, when asked about racial discrimination, a person of Hispanic descent might respond, "Yes, I believe Hispanics are discriminated against, but I have not experienced much discrimination." Each case of discrimination is important to study among the group. Each member has their own experiences of discrimination and it is important to discover those who perceive both high and low levels of discrimination.

According to a National survey of Hispanics conducted by the Pew Hispanic Center in association with the Kaiser Family Foundation, Hispanics overwhelmingly agree discrimination is a problem in public, at school, and in the work place. In fact, 82% (n = 2929) of Hispanics agree that discrimination against them is preventing Hispanics from succeeding in the United States, including Hispanics discriminating fellow Hispanics (PHC, 2002). To relate among other

racism, 62% of African Americans and 59% of Non-Hispanic Whites came to the same conclusion about their own race. About half (47%) of the Hispanic population feel that discrimination among each other is a major problem and are most likely to attribute this type of discrimination to disparities in income and education. However, some still believe discrimination against other Hispanics is based on emigrating from different countries. When asked about personal occurrences of discrimination, 31% of Hispanics report that they or someone close to them had been discriminated against because of their racial or ethnic background within the last five years (PHC, 2002). To relate, almost half (46%) of African Americans and significantly fewer (13%) Non-Hispanic Whites report suffering from discrimination or knew someone who has within the past five years.

Hispanics also feel a sense of discrimination in the workplace. Hispanics report experiencing employment-related discrimination, which includes not being hired or promoted, less frequently than African Americans: 17% and 33% respectively. In comparison, approximately 8% of Non-Hispanic Whites reported employment-related discrimination. Of the 31% of Hispanics who experienced or knew someone who suffered discrimination, 45% report being treated with less respect than others, 41% say they receive poorer service than others in restaurant type settings, and 30% recall being insulted or called names (PHC, 2002). Thirty-five percent of Hispanics attributed reasons for being discriminated against or treated unfairly to their different language, 24% to their physical appearance, and 20% as a result of both the way they look and the language they speak. Discrimination against Hispanics in school is also reported as a problem in 75% of Hispanics compared to 55% of African Americans and 54% of Non-Hispanic Whites for similar reasons.

Debate exists whether or not substance use among Hispanics can be attributed to perceived discrimination (Buchanan & Smokowski, 2009). Exposure to discrimination is subjective, but continual systematic exposure to experiences of discrimination may have long-

term health results due to stress and subsequent coping methods (Williams, Neighbors, & Jackson, 2003; Windle & Windle, 1996). Being subjected to discrimination is a profound emotional experience that may require effective coping skills (Wright, 1994). Discrimination is an ongoing aspect of life in the United States for Hispanics (Araújo & Borrell, 2006; Flores et al., 2008).

Cross-cultural research attempts to investigate what happens to individuals who grow up rooted in one cultural context and then attempt to re-establish lives and develop in another (Berry, 1997). Individual exposure to new and different cultural environments is important in understanding the effect of culture shock and coping methods associated with encounters of perceived discriminatory acts (Ward, Bochner, & Furnham, 2001). Data suggest that individuals who self-identify as Hispanics report perceived discrimination levels comparable to those who report being African American and higher than those who report being Non-Hispanic White (Mossakowski, 2003; Roberts, Swanson, & Murphy, 2004).

### *Perceived Psychological Stress*

Biologically, stress is the active process of fighting back in which the body engages in adaptational efforts crucial to maintaining certain equilibrium. Sociologists refer to the term stress as “strain” using it in the means of social disruption (Lazarus & Folkman, 1984). Psychological stress as defined by psychologist Richard Lazarus, occurs when an individual perceives that the demands of external situations are beyond their perceived ability to cope and psychological stress is “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing” (Lazarus & Folkman, 1984, p. 19). The reaction to stressful events varies by individual (Lazarus & Folkman, 1984). Individuals who suffer negative life events but manage the impact or severities positively rely on factors such as personality, coping resources, and support. Those who perceive

an event as too stressful feel situations are uncontrollable and unpredictable. Acculturation and discrimination are among the major stressors Hispanics experience; however additional stressors such as life events, financial & neighborhood strain, ageism, loneliness, and health problems are all contributing factors (Scott, Jackson, & Bergeman, 2011). Both minorities and non-minorities experience these daily stressors; however, Hispanics have additional acculturative stress to manage (Flores et al., 2008).

A strong contributor to perceived stress, and consequently health concerns, within minority groups is racial/ethnic discrimination (Dion, Dion, & Pak, 1992; Jackson et al., 1996). Strong supporting evidence exist that subjective experience of racial/ethnic discrimination largely impacts, both directly and indirectly, the mental and physical health status of ethnic minority populations (Dion et al., 1992; Flores et al., 2008; Jackson et al., 1996). Perceived discrimination has been directly linked with higher levels of psychological distress and depression among both Asian and African Americans (Broman et al., 2000; Mossakowski, 2003). A study by Williams and colleagues (1997) found that daily discrimination contributed significantly to the prediction of stress and distress when controlling for demographics. The association between stress and coping methods could possibly be the link perceived stress has with unhealthy behaviors (Zillmann & Bryant, 1985).

Perceived stress is the perception an individual feels about the general stressfulness of their life and their ability to handle it. Hispanics who experience high levels of perceived stress are at high risk for chronic health problems (Farley, Galves, Dickinson, & Perez, 2005). Flores and colleagues identified that, after controlling for perceived discrimination, perceived stress predicted depression and poor general health among Hispanics (2008). Evidence supports that the accumulation of acute and chronic stressors, like discrimination, are detrimental to mental and physical health.

### *Coping Behaviors*

Coping is defined as the process of managing the demands of person-environment stressors (Lazarus & Folkman, 1984). In psychology, coping is the process an individual experiences as they attempt to manage taxing situations through cognitive and behavioral activities and pursuing to overcome, minimize, or tolerate stress or conflict. Coping behaviors function as an escape from person-environment stressors and is linked to alleviating or resolving personal problems or an attempt at self-managing aversive states by engaging in certain behaviors, primarily through use of substances (Kairouz et al., 2002). Drinking to cope is defined as the inclination to use alcohol to escape, avoid, handle, or otherwise regulate unpleasant emotions (Cooper, Russell, & George, 1988). Drinking as a coping method is typical for positive or negative emotional affect, social functioning, major stressful life events and avoidance (Abbey et al., 1993; Kuntsche, Knibbe, Gmel, & Engels, 2005; Windle & Windle, 1996). Frequent alcohol use as a coping mechanism was associated with high levels of stress and reactivity to viewing aversive pictures (Colder, 2001). The degree of alcohol use varied depending on the stress levels being presented in the pictures displayed. The perceived stress experienced by Hispanics is high (82%) (PHC, 2002). Coping is one of many motives for alcohol use; moreover, the concept of drinking motives is based on the assumption that people drink because they hold specific outcome expectancies for alcohol use (Bandura, 1994; Kairouz et al., 2002). Drinking motives of adolescents focuses on enhancement of positive mood and attenuation of negative emotional states and tension reduction (Comasco et al., 2010; Simons et al., 2000).

### *Alcohol Use*

Alcohol consumption is a normal and accepted behavior in U.S. culture, particularly among adolescents and college students (Abbey et al., 1993). Heavy episodic drinking is high risk and is defined as five or more drinks in a sitting at any time in the past 2 weeks (O'Malley &

Johnston, 2002; Wechsler & Austin, 1998; Wechsler et al., 2002). Approximately two out of five American college students are heavy “episodic” drinkers (O'Malley & Johnston, 2002; Wechsler & Austin, 1998; Wechsler et al., 2002). Alcohol use is highly influenced by the college culture. In fact O'Malley and Johnston (2002) discover that college students (19 – 24) generally have higher occurrences of alcohol use than their age-mates who do not attend college in the past year, in the past 30 days, and binge drinking. Non-college age drinkers are, however, more likely to drink every day; weekend drinking is more common among college aged drinkers. Although both college and non-college students alcohol use increase after high school, the rates of alcohol use among college students increase considerably more than their non-college students peers. Males are two and a half times more likely to consume 10 more drinks in a week than females (Presley, Meilman, Cashin, & Lysterla, 1996). O'Malley and Johnston's study also identified that Non-Hispanic White students have the highest rates of alcohol consumption, followed by Hispanics, with African-American students reporting the lowest rates of use. These rates of use have remained stable over the 20 year study period (2002). Those who have the highest rate of alcohol use are students who are male, Non-Hispanic White, and single (O'Malley & Johnston, 2002; Wechsler, Dowdall, Davenport, & Castillo, 1995). Twice as many Non-Hispanic White students compared to minority students are heavy drinkers: Non-Hispanic White drinkers consume more than twice as many drinks per week compared to minority drinkers (Engs & Diebold, 1996; O'Malley & Johnston, 2002).

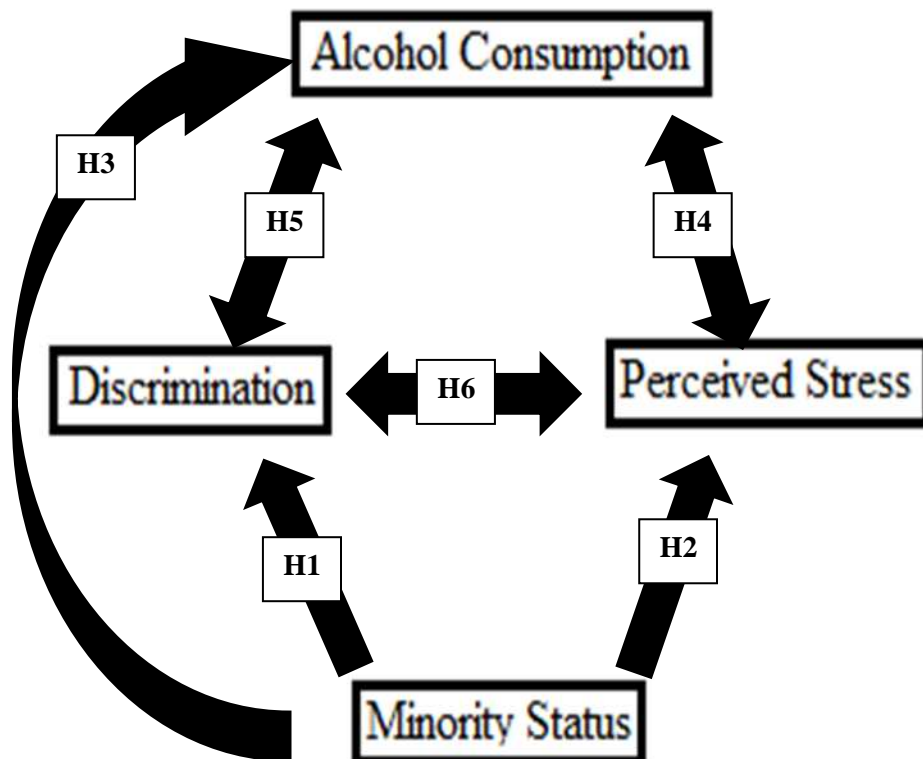
### *Conceptual Model and Hypothesis*

Given that Hispanics are the fastest growing population it is important to identify etiology of disease in this population (Prado, Szapocznik, Maldonado-Molina, Schwartz, & Pantin, 2008). Hispanics experiencing acculturation difficulties may suffer from psychological and psychical distress as a result of dealing with perceived stress and experiencing discrimination. Perceived discrimination is one aspect of acculturative stress experienced by Hispanic college students



(Berry et al., 1992; Moradi & Risco, 2006). Exposure to multiple stressful situations related to culture change increases the susceptibility of individuals to engage in alcohol use as a coping method (Aneshensel, Rutter, & Lachenbruch, 1991; Vega et al., 1994). The young population is at high risk for substance use behaviors, specifically alcohol use, and nearly one third of the Hispanic population is younger than age 18 (USCB, 2011; Prado et al., 2008). Research is needed to understand specific transitional problems (perceived stress, discrimination) of Hispanics into different societies and whether alcohol is used as a detrimental coping method. Studies are inconsistent in linking substance use and discrimination directly (Buchanan & Smokowski, 2009; De La Rosa, 2002; Dinh, Roosa, Tein, & Lopez, 2002). However, Hispanic adolescents experiencing acculturative stress due to the accumulation of acculturation areas such as discrimination, language conflicts, culture differences and customs proved to be susceptible to alcohol use (Buchanan & Smokowski, 2009).

**Figure 4:**  
**Hypotheses Coping Conceptual Model**



The present study is designed to investigate perceived stress and perceived discrimination experienced by minority students, specifically those with Hispanic ties, attending Oklahoma State University. The study also aims to identify several hypotheses related to the conceptual model (see Figure 4) as listed below. This can help determine if occurrences of discrimination and perceived stress are experienced by Hispanic students in an environment with a predominant Non-Hispanic White population. Further, if unhealthy behaviors, such as alcohol consumption, occur as a result of the stress and discrimination they perceive to occur.

Hypothesis 1 ( $H_1$ ): Hispanic students will report higher rates of discrimination than Non-Hispanic White students.

Null Hypothesis 1 ( $H_0$ ): There will be no difference in discrimination scores between Hispanic Students and Non-Hispanic White Students.

Research Question 1: Will Hispanic students perceive higher rates of discrimination than their Non-Hispanic White counter parts?

Hypothesis 2 ( $H_2$ ): Hispanic students will have higher perceived stress scores than Non-Hispanic White students.

Null Hypothesis 2 ( $H_0$ ): There will be no difference in perceived stress scores between Hispanic Students and Non-Hispanic White students.

Research Question 2: Is perceived stress experienced more among Hispanics than Non- Hispanic White students?

Hypothesis 3 ( $H_3$ ): The amount of alcohol use in the past month will be higher among Hispanic students than their Non- Hispanic White peers?

Null Hypothesis 3 ( $H_0$ ): The amount of alcohol consumed in the past month will not be different between Hispanic and Non-Hispanic White students.

Research Question 3: Did Hispanic students drink more alcohol in the past month than Non-Hispanic White students?

Hypothesis 4 ( $H_4$ ): There is a relationship between perceived stress and number of drinks consumed in the past month.

Null Hypothesis 4 ( $H_0$ ): There is no relationship between perceived stress and number of drinks consumed in the past month.

Research Question 4: Is there a correlation between perceived stress and number of drinks consumed in the past month?

Hypothesis 5 ( $H_5$ ): There is a relationship between discrimination and number of drinks consumed in the past month.

Null Hypothesis 5 ( $H_0$ ): There is no relationship between discrimination and number of drinks consumed in the past month.

Research Question 5: Is there a correlation between discrimination and number of drinks consumed in the past month?

Hypothesis 6 ( $H_6$ ): There is a relationship between discrimination and perceived stress.

Null Hypothesis 6 ( $H_0$ ): There is no relationship between discrimination and perceived stress.

Research Question 6: Is there a correlation between discrimination and perceived stress?

## CHAPTER III

### METHODOLOGY

#### **Procedure**

Following IRB approval, 5,000 randomly selected students were sent an email invitation to participate in an internet-based cross-sectional survey which was part of larger Health survey. After approximately 1 week, selected students received a reminder email to consider participating in the survey. The survey took approximately 20 minutes to complete. Upon completion participants had the opportunity to enter a sweepstakes for 1 of 5 Bursar credits of \$100. Winners were contacted by Office of the Vice President of Student Affairs to process their award. Individual participation in this study was strictly voluntary.

#### **Measures**

##### **Demographics**

The demographic questions for this survey included respondent gender, race/ethnicity (White, Black, Hispanic/Latino, Asian Pacific Islander, and other/multi-race), age, sexual orientation, height, weight, mother and father highest level and achieved education, students year in school and GPA, place of residence (on-campus dormitory, off-campus, fraternity/sorority), and Greek-life affiliation (sorority/fraternity). Although all racial ethnic groups participated in the survey, the analysis was restricted to evaluate only Non-Hispanic Whites and Hispanics.

## **Perceived Stress**

Perceived stress was measured using the Perceived Stress Scale: an instrument designed to assess how unpredictable, uncontrollable, and overloaded participants found their lives. Developed by Cohen, Kamarck, and Mermelstein (1983), the original version of the PSS (Perceived Stress Scale) is a 10-item scale that measures the grade to which situations in one's life are appraised as stressful. The authors have provided reliable psychometric properties for shorter versions of the original scale, otherwise known as the Perceived Stress Short Scale (PSS-4) which shortens the original 10 item scale to 4 items (2, 4, 5, & 10). The scale included a number of direct questions about current levels of stress experienced and assessed the frequency of perceived stress over the past month, with responses ranging from 0 (never) to 4 (very often). Questions included, "In the last month, how often have you felt that things were going your way?" and "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?" The total score of the PSS-4 is obtained by reversing responses to the 2 positively stated items (4 & 5) and then summing across all scale items. Scores can range from a minimum of 0 to a max of 16. A higher score indicates a higher level of perceived stress. Cronbach's alpha was calculated to assess reliability of the perceived stress scores, reliability was .71.

## **Discrimination**

Discrimination was measured using a Likert-type instrument that measured everyday discriminatory acts such as chronic, routine, and relatively minor experiences of unfair treatment. The Everyday Discrimination Scale developed by Williams and colleagues is utilized by summing up the nine items that capture the frequency of the experiences in the day-to-day lives of respondents, for example: being treated with less courtesy than others; receiving poorer service than others in restaurants or stores; people acting as if you they think you are dishonest; being

called names or insulted; and being threatened or harassed (1997). The scale assessed the frequency of discrimination over time periods, with responses ranging from 0 (never) to 5 (almost every day). Scores can range from a minimum of 0 to a max of 45. A higher score indicated a higher level of discrimination. Cronbach's alpha was calculated to assess reliability of the discrimination scores, reliability was .97.

### **Past Month Alcohol Use**

Participants' alcohol use in the past month was assessed using an instrument designed to measure substance use, specifically alcohol, developed by the National College Health Assessment. The survey measured the quantity and frequency of alcohol use during the past month. One created variable was used in the analysis of the data. Responses on "quantity" and "frequency" were used to calculate a single dependent variable of "total drinks in the past month." Standards for what constitutes as 1 drink are as follows: 12 ounces of beer (5% alcohol), 12 ounces of wine cooler (5% alcohol), 5 ounces of wine (12% alcohol), and 1.5 ounces of liquor (80 proof). Alcohol use questions were "within the last 30 days, on how many days did you use: Alcohol (beer, wine, and liquor)" (frequency) with a scale ranging from 1 day to 30 days and "Of the past 30 days, when you did drink an alcohol beverage, how much did you usually have at any one time" (quantity) with a text only option to enter the respondents answer.

### **Data Analysis**

Data was analyzed using SPSS software version 20.0. Hypothesis 1, Hypothesis 2 and Hypothesis 3 were analyzed using an independent t-test to measure differences in means between Hispanics and Non-Hispanic Whites for variables everyday discrimination, perceived stress, and total drinks in the past month, respectively. Hypothesis 4, Hypothesis 5, and Hypothesis 6 were analyzed utilizing Pearson's product moment correlation to assess the relationship between

variables perceived stress and drinks consumed in the past month, everyday discrimination and drinks consumed in the past month and everyday discrimination and perceived stress.

## CHAPTER IV

### FINDINGS

#### Participant Descriptive Statistics

Descriptive statistics for demographic characteristics, presented separately for Hispanics and Non-Hispanic Whites are shown in Table 2. Originally 739 consented to participate but only 568 students completed the survey: an attrition of 171 students. Due to the nature of the study

**Table 2:**

**Descriptive Statistics for Hispanic and Non-Hispanic Whites Population**

	<b>Hispanics</b>	<b>Non-Hispanic Whites</b>	<b>Total</b>
<b>Consented</b>	36 (6.3%)	530 (93.7%)	566
Males	13 (2.3%)	173 (30.5%)	566
Females	23 (4.1%)	357 (63.1%)	
<b>Completed</b>	30 (6.4%)	439 (93.6%)	469
Males	9 (1.9%)	139 (29.6%)	469
Females	21 (4.5%)	300 (64%)	
<b>Age</b>	M = 21.43 ± 3.95	M = 21.39 ± 4.45	

hypotheses, only those who classified themselves as Hispanic and Non-Hispanic White were included in these analyses. Of those who completed the survey, 439 students described themselves as Non-Hispanic White and 30 students described themselves as Hispanic. Hispanic participants who completed the survey average age was 21.43 (SD = 3.95 years). Non-Hispanic

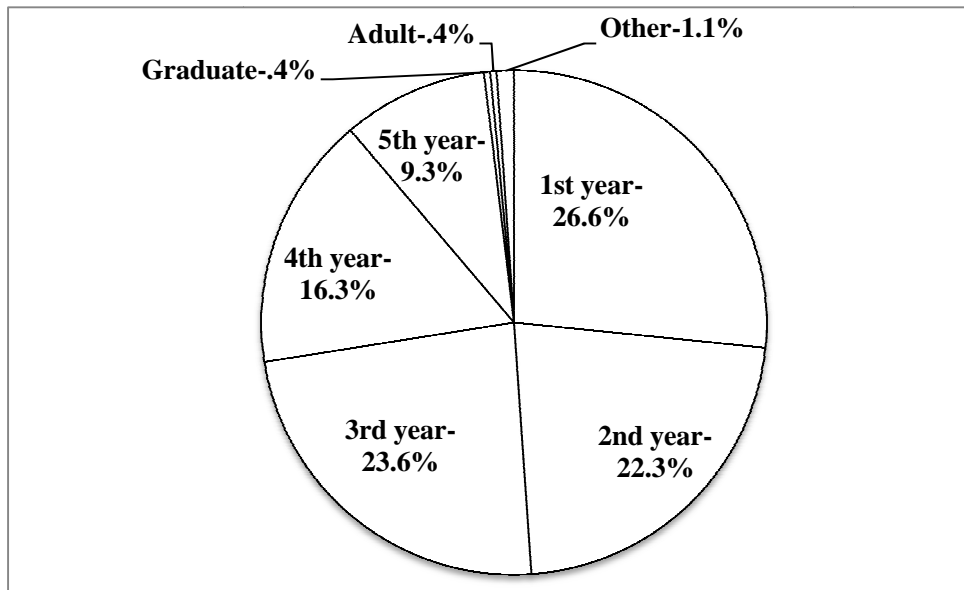


participants average was 21.39 (SD = 4.45 years). Two-thirds of participants were females (69.5%, n = 321). An additional question was asked to determine the background of those who indicated they were Hispanic, table 3. Over three-quarters (76.7%) of Hispanic participants who completed the survey specified a background of Mexican, Mexican American, or Chicano (n = 23); other Hispanic backgrounds represented included Puerto Ricans (13.3%, n = 4), Spanish (6.7%, n = 2), and Guatemalan (3.3%, n = 1).

Nearly one quarter of the sample (24.4%) indicated Greek-letter organization affiliation (National Interfraternity Conference, National Panhellenic Conference, or National Pan-Hellenic Council). Nearly half (48.9%) of the participants were in their first 2 years in college, Figure 5. Almost a quarter of the students (23.6%) were in their 3<sup>rd</sup> year of school and 4<sup>th</sup> and 5<sup>th</sup> year students percentages equaled 16.3% and 9.3% respectively. Less than 2% of the participants were in a graduate or other special program.

**Figure 5:**

**Participants Year in School**



**Discrimination**

Analysis revealed 77% of Hispanics and 71% of Non-Hispanic Whites reported having experienced discrimination in the past, Table 3. Hispanics revealed that 30.5% feel discriminated against because of their racial background; whereas, 1.7% of Non-Hispanic Whites felt race was the reason behind their experiences of discrimination. A third of Hispanics (33%) and 14.5% of Non-Hispanic Whites believed discrimination was due to their physical appearance. Fourteen

**Table 3:**

**Antecedents of Discrimination for Hispanic and Non-Hispanic Whites**

	<b>Hispanics</b>	<b>Non-Hispanic Whites</b>
Experienced Discrimination	77.0%	71.0%
Antecedents of Discrimination:		
Race	30.5%	1.7%
Physical Appearance	33.0%	14.5%
Skin Color	14.0%	1.1%
Gender	41.9%	22.9%
Age	41.9%	29.0%
Weight	12.9%	8.1%
Height	29.0%	19.6%
Education/Income Level	19.4%	13.3%
Religion	12.9%	7.6%

percent of Hispanics reported discrimination based on skin color has happened before; only 1.1% of Non-Hispanic Whites felt their skin color was the cause for discrimination. Hispanics indicated an antecedent of discrimination was gender (41.9%) as well as 22.9% of Non-Hispanic Whites. More than a quarter (29%) of Non-Hispanic Whites believe age is a antecedent for their experiences of discrimination along with 41.9% of Hispanics. Both Hispanics (12.9%) and Non-Hispanic Whites (8.1%) indicated height had some influence on discrimination, as well as weight; Hispanics 29% and Non-Hispanic Whites 19.6%. A small percentage (1.7%) of Non-Hispanic Whites and no Hispanics believe sexual orientation is a likely antecedent of discrimination.

Religion was also an antecedent of discrimination among Hispanics (12.9%) and Non-Hispanic Whites (7.6%). Education or income level was chosen as a discrimination antecedent among 19.4% of Hispanics and 13.3% of Non-Hispanic Whites. Participants were also given the choice to select “other” antecedents of discrimination that weren’t presented in the scale. Among those answers, 2.8% of Hispanics believed being in Oklahoma was the main reason they have experienced discrimination. Non-Hispanic Whites indicated reasons such as personality (1.5%), non-Greek organization affiliation (1.2%), and situations of insensitive individuals (1.6%).

More than a quarter of Hispanics feel they are treated with less courtesy than other people at least a few times a year and 25.8% believe they receive poorer service in restaurants or stores at least a few times a year, Table 4. Non-Hispanic Whites displayed similar results (22.9%) in feelings of less courtesy from others a few times a year and 17.2% feel they receive poorer service in restaurants or stores at least a few times a year. Only 18% of Hispanics said they have been called names before with 11.1% experiencing name calling at least a few times a month. A quarter of Hispanics (25.8%) and 25.5% of Non-Hispanics believe they had been treated with less respect than others at least a few times a year. Twenty nine percent of Hispanics and 20.7% of Non-Hispanic Whites think others act as if they are not smart a few times a year. Hispanics revealed that 32.3% of them and 14.4% of Non-Hispanics Whites feel as if others are afraid of them you a few times a year. Perceived feelings of dishonesty received from others were felt in 11.1% of Hispanics and 16.1% of Non-Hispanic Whites. About half (45.8%) of Hispanics and over a quarter (27.5%) of Non-Hispanic Whites felt like others thought they were better than them a few times a year. Feeling of threat or harassment were perceived in 19.4% of Hispanics and 7% of Non-Hispanic Whites.

**Table 4:**

**Events of Discrimination for Hispanics and Non-Hispanic Whites**

A Few Times a Year	Hispanics	Non-Hispanic Whites
<b>Discrimination Incidents:</b>		
People act as if they think you are not smart:	29.0%	20.7%
People act as if they are afraid of you:	32.3%	14.4%
People act as if they think you are dishonest:	11.1%	16.1%
People act as if they think they are better than you:	45.8%	27.5%
You are called names or insulted:	19.4%	17.0%
You are threatened or harassed:	19.4%	7.0%
You are treated with less courtesy than others:	25.8%	22.9%
You receive poorer service in restaurants or stores:	25.8%	17.2%
You are treated with less respect than others:	25.8%	25.5%

**Hypothesis 1 (H<sub>1</sub>): Hispanic students will report higher rates of discrimination than Non-Hispanic White students.**

**Null Hypothesis 1 (H<sub>0</sub>): There will be no difference in discrimination scores between Hispanic Students and Non-Hispanic White Students.**

Homogeneity of variance was confirmed on racial groups as assessed by Levene's Test for Equality of Variances; therefore an independent t-test was run on the data for test variable race and the score for everyday discrimination variable using a 95% confidence interval for the mean difference. The difference between means for Hispanics (M = 13.1, n = 30) and Non-Hispanic Whites (M = 11.32, n = 445) for the everyday discrimination variable was not statistically significant ( $t(473) = -1.017, p = .310$ , table 5). Therefore, we fail to reject the Null Hypothesis.

**Table 5:****Everyday Discrimination Independent t-test Analysis**

	<b>Hispanics Mean (SD)</b>	<b>Non-Hispanics White Mean (SD)</b>	<b>t-Value</b>
<b>Discrimination</b>	n = 30 13.1 (7.092)	n = 445 11.323 (9.386)	-1.017

p-value = .310 (Non-significant)

**Perceived Stress**

The PSS-4 required reversing responses to the 2 positively stated items (items 4, & 5). Analyzing individual points of perceived stress, it was revealed that 25.8% and 41.9% of Non-Hispanic Whites and Hispanics respectively feel that sometimes difficulties pile up so high that they can't overcome them, Table 6. The ability to sometimes handle personal problems also displayed differing results. More than half (51.6%) of Hispanics felt they were "sometimes" able to handle their personal problems while; 27% of Non-Hispanics Whites related. Almost half (45%) of Hispanics and over one fourth (29.6%) of Non-Hispanic Whites felt they "sometimes" were unable to control important things in their lives. Almost half (45.2%) of Hispanics and 38.7% of Non-Hispanic Whites felt sometimes things were going their way.

**Table 6:****Perceived Stress Rates for Hispanic and Non-Hispanic Whites**

Past Month:	<b>Hispanics</b>	<b>Non-Hispanic Whites</b>
Perceived Stress:		
Sometimes difficulties pile up so high that they can't overcome:	41.9%	25.8%
Sometimes able to handle personal problems:	51.6%	27.0%
Sometimes were unable to control important things in their lives:	45.0%	29.6%
Sometimes felt things was going their way:	45.2%	38.7%

**Hypothesis 2 (H<sub>2</sub>): Hispanic students will have higher perceived stress scores than Non-Hispanic White students.**

**Null Hypothesis 2 (H<sub>0</sub>): There will be no difference in perceived stress scores between Hispanic Students and Non-Hispanic White students.**

Equal variances were confirmed on race groups as assessed by Levene’s test for Equality of Variances for Hypothesis 2. An independent t-test was run at a 95% confidence for variable race and grouping perceived stress variable. Mean scores of perceived stress between Hispanics (M = 6.64, n = 31) and Non-Hispanic Whites (M = 5.94, n = 453) were not statistically significant ( $t(482) = -1.91, p = .234$ ), Table 7. Therefore, we fail to reject the Null Hypothesis.

**Table 7:**

**Perceived Stress Independent t-test Analysis**

	<b>Hispanics Mean (SD)</b>	<b>Non-Hispanics White Mean (SD)</b>	<b>t-Value</b>
<b>Perceived Stress</b>	n = 31 6.645 (2.882)	n = 453 5.942 (3.195)	-1.191

p-value = .234 (Non-significant)

**Alcohol Use**

A collective data analysis revealed that a majority of the participants drank less than 6 days in the past month (90.7%). About a quarter (22.1%) of the participants drank 5 or more drinks in one day. More than 12% of the drinking students consumed at least 5 drinks at any one time, with 2% of the population consuming at least 10 or more drinks in any one sitting in the past 30 days. Nearly one-third (31%) of the participants didn’t drink any alcohol on any days in the past 30 days. When divided, Hispanics and Non-Hispanic Whites had similar drinking populations in that a little more than 80% of each population participated in drinking in the past 30 days with similar mean scores.

**Hypothesis 3 (H<sub>3</sub>): The amount of alcohol use in the past month will be higher among Hispanic students than their Non- Hispanic White peers?**

**Null Hypothesis 3 (H<sub>0</sub>): The amount of alcohol consumed in the past month will not be different between Hispanic and Non-Hispanic White students.**

Homogeneity of variance was confirmed on race groups as assessed by Levene’s Test for Equality of Variances. An independent t-test at a 95% confidence interval was utilized for testing race variable and alcohol in the past month. There was no difference in the mean number of drinks consumed in the past month between Hispanics students (M = 10.8, n = 30) and Non-Hispanic White students (M = 21.19, n = 434), ( $t(462) = .124, p = .902$ ), Table 8. Hispanic students drinking habits were similar to those of Non-Hispanic White students revealing a not statistically significant finding; therefore we fail to reject the Null hypothesis.

**Table 8:**

**Alcohol Consumption Past Month Independent t-test Analysis**

	<b>Hispanics Mean (SD)</b>	<b>Non-Hispanics White Mean (SD)</b>	<b>t-Value</b>
<b>Alcohol Past Month</b>	n = 30 10.800 (27.881)	n = 434 11.305 (21.189)	0.124

p-value = .902 (Non-significant)

## Perceived Stress and Alcohol Use

**Hypothesis 4 (H<sub>4</sub>):** There is a relationship between perceived stress and number of drinks consumed in the past month.

**Null Hypothesis 4 (H<sub>0</sub>):** There is no relationship between perceived stress and number of drinks consumed in the past month.

A Pearson's product-moment correlation was computed to assess the relationship between perceived stress and the alcohol consumed in the past month. There is no statistical significant relationship between perceived stress and number of drinks consumed in the past month 30 days ( $r = -.008$ ,  $p = .870$ ), Table 9. Therefore, we fail to reject the null hypothesis.

**Table 9:**

### Perceived Stress, Discrimination, & Alcohol Use Correlation Analysis

<b>Correlations: Discrimination n = 475, Perceived Stress n = 484, Alcohol Use = 464</b>		
	<b>Correlation</b>	<b>p-value</b>
<b>Perceived Stress &amp; Alcohol Use Past Month</b>	-0.008	0.87 Non-Significant
<b>Discrimination &amp; Alcohol Use Past Month</b>	0.048	0.307 Non-Significant
<b>Discrimination &amp; Perceived Stress</b>	.335*	.0 Significant
* $p \leq .01$ . All tests are two-tailed.		



## **Discrimination and Alcohol Use**

**Hypothesis 5 ( $H_5$ ): There is a relationship between discrimination and number of drinks consumed in the past month.**

**Null Hypothesis 5 ( $H_0$ ): There is no relationship between discrimination and number of drinks consumed in the past month.**

A Pearson's product-moment correlation was computed to assess the relationship between discrimination and alcohol consumed in the past month. No statistical significant relationship exists between discrimination and the number of drinks consumed in the past 30 days ( $r = .048$ ,  $p = .307$ ), Table 9. Therefore, we fail to reject the null hypothesis.

## **Discrimination and Perceived Stress**

**Hypothesis 6 ( $H_6$ ): There is a relationship between discrimination and perceived stress.**

**Null Hypothesis 6 ( $H_0$ ): There is no relationship between discrimination and perceived stress.**

A Pearson's product-moment correlation assessed the relationship between discrimination and perceived stress. A moderate positive relationship exists between discrimination and perceived stress ( $r = .335$ ,  $p \leq .01$ ), Table 9. A moderate positive relationship reveals that there is a correlation between discrimination and perceived stress; therefore, we reject the Null hypothesis, and accept the hypothesis that discrimination influences perceived stress among college students.

## CHAPTER V

### CONCLUSION

#### *Discrimination*

Similar rates of discrimination were reported among Hispanics and Non-Hispanic Whites in this study. The data indicated that the perception of unfair treatment is a problem for both Hispanic and Non-Hispanic White students. Rates of discrimination reported by Hispanics were similar to those reported in the Pew Hispanic Centers (PHC) research in 2002. Reported antecedents of discrimination were similar to PHC's study, as well: Hispanics in both studies stated a strong antecedent of discrimination is their racial background (PHC, 2002). Perceptions of discrimination stem from peoples belief that ethnic background is a likely antecedent of discrimination (Flores et al., 2008; Mena et al., 1987; Phinney, 1992). Discrimination is an ongoing aspect of life in the United States for Hispanics (Araújo & Borrell, 2006).

The phenomena known as the personal/group discrimination discrepancy is the tendency of minority group members to perceive higher levels of discrimination directed at their group than towards them personally (Taylor, et al., 1990). Although an individual may experience small levels of discrimination, as a member of the group, they believe discrimination is problematic through association, regardless of whether or not perceptions correctly reflect behaviors (Wright, 1994). Hispanics reported similar levels of everyday discrimination as Non-Hispanic Whites. However, the study revealed Hispanics experience discrimination because of race/ethnic factors

and non-Hispanic Whites experience discrimination due to non-racial antecedents. Non-racial antecedents of discrimination include individualistic traits such as: height, weight, gender and age (Krieger, 1990). Both Hispanics and Non-Hispanic Whites in this study indicated that gender, age, height, weight and religion were antecedents of discrimination.

### *Perceived Stress*

As defined by Lazarus and Folkman (1984), psychological stress occurs when an individual perceives that the demands of external situations are beyond their perceived ability to cope. Hispanics and Non-Hispanic White students report similar levels of perceived stress in this study. Although similar scores were found between groups, there may be important indicators of stress within groups including an individual's ability to handle personal problems and being able to control important things in their life. In this study, more than half of Hispanics and a quarter of Non-Hispanic Whites in this study felt they were "sometimes" able to handle their personal problems. In addition, perceived stress deals with ability to control stressful and important items in life (Jackson et al., 1996; Lazarus & Folkman, 1984). Almost half of Hispanics and over one fourth of Non-Hispanic Whites felt they "sometimes" were unable to control important things in their lives.

Scott and colleagues indicated that Hispanics feel additional acculturation stressors on top of dealing with life events such as financial & neighborhood strain, ageism, loneliness, and health problems (2011). However, similar scores in the study reveal that Hispanics feel the same about the general stressfulness in their life as Non-Hispanic Whites. It is possible that acculturation was not an issue for the Hispanics who participated in the study. Hispanics with lower acculturation levels tend to be foreign-born or 2<sup>nd</sup> generation, practice primarily Spanish at home and usually have lower levels of income and education (Betancourt & Lopez, 1993; Mena et al., 1987). Acculturated Hispanics tend to be U.S. born, speak both English and Spanish

equally at home, and have higher income and education (Betancourt & Lopez, 1993). It is likely that Hispanics attending college at this university and participating in the study were highly acculturated.

#### *Alcohol Use*

Past month drinking did not vary by ethnicity race. In general, approximately two in five college students report consuming five or more drinks in a sitting at any time in the past 2 weeks (O'Malley & Johnston, 2002; Wechsler & Austin, 1998). In this study, only 1 in 8 students reported consuming 5 drinks in any one sitting. The similar drinking habits between Hispanics and Non-Hispanic Whites are inconsistent with Engs and Diebold (1996) discovery in which twice as many Non-Hispanic White students compared to minority students are heavy drinkers and Non-Hispanic White drinkers consume more than twice as many drinks per week compared to minority drinkers. Although Engs study focused on Whites and Non-Whites, the inconsistency is contradicting to the findings of this study. The acculturation and assimilation of Hispanics into the dominant society would suggest similar drinking rates as Non-Hispanic Whites.

#### *Perceived Stress and Alcohol Use*

Perceived stress is weakly associated with drinking as a coping mechanism in combination to experiences of other acculturation concerns such as discrimination and cultural barriers (Abbey et al., 1993; Windle & Windle, 1996). This study failed to measure coping. Further, we did not identify a relationship between stress and alcohol use in the past month. Prior studies are consistent in linking drinking to areas such as emotions, major stressful life events, avoidance, and to forget about things on their mind that were bothersome are associated with drinking (Abbey et al., 1993; Windle & Windle, 1996). However, the failure to reveal a relationship between perceived stress and alcohol could be due to perceptions of alcohol expectancies. What people expect will happen when they consume alcohol influences drinking

habits (Jones, Corbin, & Fromme, 2001). Therefore, students may have perceived the positive side effects of alcohol are actually due to their expectations, rather than the alcohol itself and found alternative coping behaviors (Kairouz et al., 2002). The association between stress and coping could possibly be a link stress has with unhealthy behaviors. It would be beneficial to study different coping strategies in relation to major stressful or perceived stressful events in order to determine if tense circumstances lead to engaging in certain behaviors to alleviate or resolve these events.

#### *Discrimination and Alcohol Use*

The results of this study are consistent with previous studies which failed to link substance use and direct experiences of discrimination (Buchanan & Smokowski, 2009; Dinh et al., 2002). Discrimination, as an element of acculturation, seems to have some relation among Hispanic adolescents. Hispanic adolescents experiencing acculturative stress due to combined issues of language conflicts, education and discrimination proved to be susceptible to substance use (Buchanan & Smokowski, 2009; Vega et al., 1994). Since this sample is possibly highly acculturated, no relationship was found between discrimination and alcohol use.

#### *Discrimination and Perceived Stress*

The link between discrimination and perceived stress is moderately positive in our study and consistent with previous research that identified that daily discrimination contributed significantly to the prediction of stress and depression when controlling for race (Broman et al., 2000; Dion et al., 1992; Jackson et al., 1996; Williams et al., 1997). Dion and colleagues believe racial/ethnic discrimination against minorities contributes to instances of perceived stress (1992). Minorities reported higher psychological stress and depression because of discrimination acts (Broman et al., 2000; Mossakowski, 2003). Although Hispanics and Non-Hispanic Whites in this

study reported similar mean scores of discrimination and perceived stress, the reasons and levels of the variables differ by group.

### *Limitations*

There are several limitations to this research study and the findings. First, the response rate achieved was low for survey research (11.3%). Research suggests that the first dispersal of surveys should typically result in 30% to 50% return rate, with second dispersals resulting in an additional 20% and third attempts perhaps reaching a 10% response rate (Gay, Mills, & Airasian, 2006). A small overall response rate raises concern about the generalizability of results (Gay et al., 2006). Perhaps explanations of this low response rate could be the degree to which students receive invitations to participate in survey research at this university. Being a university which is highly recognized as a research institution involves the student body receiving invitations to participate in numerous studies through the school year. The low response could be suggestive of students growing tiresome of online survey research.

Second, the power to reject the Null Hypothesis was low due to low sample size. Power is based on the assumption that the null hypothesis is actually false, it lowers the probability of committing a type II error and therefore confirming the alternative hypothesis when the alternative hypothesis is true. These findings could be a result of the small sample size of the Hispanic participants in relation to Non-Hispanic White participants. For example, studies found that Hispanics experience higher levels of discrimination and stress than Non-Hispanic Whites due to acculturation and acculturative stress and have been found to be susceptible to higher rates of alcohol use due to coping behaviors (Berry, 2005; Comasco et al., 2010; Flores et al., 2008).

Third, a coping scale was not included in the survey. The study did not directly examine coping behaviors in relation to stressful events and discrimination but rather assessed alcohol consumed in the past month. Coping scales exist to determine how people respond when they

confront difficult or stressful events in their lives. While perceived stress focuses on how someone feels about the general stressfulness of their life and their ability to handle it, coping actually specifies coping methods of the individuals.

Fourth, temporal relationships were assumed between the variables: discrimination, perceives stress, drinking behaviors. Temporal relationships refer to timing of the relationship between a factor and its outcome. It is used to assign causality to a relationship. The cross-sectional nature of the survey makes it impossible to determine the causal nature of the variables.

Fifth, alcohol expectancies were not assessed in the survey. The concept of alcohol expectancy is based on the assumption that people will choose to behave or act in a certain way (consume alcohol) because their motivation to engage in a specific behavior over other behaviors is due to what they expect will happen as a result of that selected behavior (Jones, et al., 2001; Kairouz et al., 2002). Assessing alcohol expectancies of the participants would have given better insight on the different expectations of the students who consumed alcohol. Some of the students may drink for positive affect while others drink to relieve negative affects, like stress, and these expectations could vary by racial groups and acculturation status.

Sixth, this study failed to measure acculturation levels of the Hispanic participants and their generational status. The Hispanic population at Oklahoma State may have been of later generation immigration and highly acculturated. Later-generation individuals experience less acculturative stress than first-generation immigrants because of a bigger social network to share concerns with (Mena et al., 1987; Padilla et al., 1985). Only later generation Hispanics, and those who are more acculturated, attend a less diverse school than this university. Acculturation is the key variable to measure and generational status would be a proxy element. The participation of primarily acculturated Hispanics could be due to self-selection into the university. Self-selection into the university involves Hispanic students attending who are more able and more highly

motivated than other Hispanics. For example, are the Hispanics attending this university selected from the upper or lower tail of acculturation distribution? The problem includes the people who choose to attend college being more acculturated from those who choose not to attend. If the participants are different from non-participants, then the information reported from the participants isn't representative of the entire population of interest. A measure of acculturation levels and generational status of students' immigration could have helped further understand the racial group involved in the study and perhaps a more specific outlook on results.

Finally, the research was cross-sectional, and we cannot draw causal inferences regarding the results. Cross-sectional studies should be representative of the population if generalizations from the findings are to have any validity. The Hispanic population who participated in this study is not representative of the Hispanic population at every University. Non-responses to the survey is a particular problem affecting cross-sectional studies and can result in bias of the outcomes. This is a particular problem when the characteristics of participants differ from non-participants. In combination with the entire 11% response rate of the survey, the generalizability of the study is of concern.

#### *Future Studies*

Future studies on culturally plural societies could benefit understanding of acculturation and assimilation experienced by Hispanics. Although the focus of this study was centered on Hispanics and their experiences of discrimination and perceived stress compared to Non-Hispanic Whites, these results provide evidence that focusing on acculturation, coping behavior and alcohol expectancies could be beneficial. It would be beneficial to study different coping strategies in relation to major stressful events in order to determine if situations lead to engaging in certain behaviors to alleviate or resolve these events.



Alcohol expectancies influence the behaviors of individuals. Studies on assimilation and alcohol expectancies among minorities would provide an important understanding on alcohol use and feeling socially accepted, including the association between alcohol expectancies and stress. Discovering the casual association between perceived stress and discrimination would greatly add to the literature. Given the nature of the cross sectional study, cause cannot be assessed between the association of perceived stress and discrimination; it is important to evaluate both sides of the relationship. Perceived discrimination can cause stress in people who simply perceive they are being treated unfairly. Merely anticipating discrimination can lead to both psychological and physical negative stress responses. Furthermore, if an individual is subject to harmful health conditions from stress and if they are continually worried or anxious that they may anticipate extreme levels of perceived discrimination, it could result in the same negative conditions as the first relationship. Such a relationship is bidirectional and each factor could be causing the other. Further research of the variables could help determine if people who are under stress are more likely to report discrimination or if discrimination increases the stress being experienced.

### *Conclusion*

The lack of relationship between both discrimination and perceived stress to drinking habits doesn't eliminate alcohol use as a method of coping. Drinking motives differ depending on the context and condition (Kairouz et al., 2002). While it is known that coping is a process individuals experience in an attempt to manage stressful situations, the concept of drinking motives is based on the assumption that people drink in order to attain certain valued outcomes (Kairouz et al., 2002). Coping motives are individualistic to that person's belief and how they choose to enhance moods and to attenuate negative emotions. With nearly 71% of Non-Hispanic White students and 77% of Hispanics experiencing discrimination, it's important to discover the coping behaviors of the ones who choose to attenuate their emotions in other habits. Alcohol

consumption is a normal and accepted behavior in U.S. culture for college students, adolescents, and younger adults (Abbey et al., 1993).

In conclusion, these research findings suggest that although Hispanics and Non-Hispanic Whites don't significantly differ on the variables studied: discrimination, perceived stress, past month drinking habits, the study indicated a trend is present for all three variables, that is all 3 variables are experienced in similar levels among both Hispanics and Non-Hispanic Whites. Discrimination and perceived stress, collectively, have the potential to develop chronic health issues; both psychological and physically, and this study revealed that these events are still experienced on a consistent basis, regardless of race. This study mirrors previous research which sought to determine if a link exists between drinking and discrimination and stress (Buchanan & Smokowski, 2009; Windle & Windle, 1996). In addition, this study is similar to other studies which focused on discrimination differences among races (Mossakowski, 2003; Roberts et al., 2004). However, this study is inconsistent with other studies because of the discovery of similar scores of everyday discrimination and similar drinking totals. If acculturation issues, such as discrimination and perceived stress, can be monitored and suppressed and healthier coping methods be stressed then the young minority and college crowds of today can perhaps share equal opportunity to succeed in the United States and avoid developing occasions of distress and behavioral health issues.

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APPENDICES

**Appendix A: IRB Application**

<p><b>APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH</b> SUBMITTED TO THE OKLAHOMA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD Pursuant to 45 CFR 46</p>	<p>IRB Number  FOR OFFICE USE ONLY</p>
<p>Title of Project: Influence of Perceived Stress on Alcohol Consumption in Hispanics in a Predominantly Caucasian Environment</p>	
<p>Is the Project externally funded? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, complete the following: <input type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal</p>	
<p>Agency: Grant No: OSU Routing No:</p>	
<p>Type of Review Requested: <input checked="" type="checkbox"/> Exempt <input type="checkbox"/> Expedited <input type="checkbox"/> Full Board</p>	



2. (a) Describe the subjects of this study:

- 1) Describe the sampling population: A random sample of 5,000 undergraduate students was selected to participate in an online survey during the spring semester of 2013. All students were invited to participate and no one was excluded from the study.
- 2) Describe the subject selection methodology(i.e. random, snowball, etc.): 5,000 undergraduate OSU students were randomly sampled to participate in an online survey.
- 3) Describe the procedures to be used to recruit subjects. Include copies of scripts, flyers, advertisements, posters or letters to be used. If recruitment procedures will require access to OSU System email addresses you will need to include Appendix A of this application:7 A large health and substance use survey was distributed to students at the end of the spring semester. Students received an email invitation and one reminder email. They were required to consent to participate before answering any questions.

How many subjects are expected to participate?: A random sample of 5000 were selected to participate in the study and 568 completed the survey.

- 4) What is the expected duration of participation for each segment of the sampling population? If there is more than one session, please specify the duration of each session: The survey took approximately 20 minutes to complete.
- 5) Describe the calendar time frame for gathering the data using human subjects: The survey link remained active from April 10th – April 25th. Data will be analyzed within one calendar year, pending IRB approval.
- 6) Describe any follow-up procedures planned: No follow up procedures are planned

(b) Are any of the subjects under 18 years of age?  Yes  No

If Yes, you must comply with special regulations for using children as subjects. Please refer to IRB Guide.

3. Provide a detailed description of any methods, procedures, interventions, or manipulations of human subjects or their environments and/or a detailed description of any existing datasets to be accessed for information. Please indicate the physical location where the research will take place (if applicable). Include copies of any questionnaires, tests, or other written instruments, instructions, scripts, etc., to be used.

The survey was distributed via e-mail and online with qualtrics survey software. The invitation e-mail explained the purpose of the study and their role in this research project. After the survey link closed data was be downloaded from the secure server and stored as secure files with stripped of identifying information. All surveys were completed online in their setting of preference anywhere a computer and internet was accessible. The data will also be analyzed on the Oklahoma State University campus using appropriate statistical software packages.

4. Will the subjects encounter the possibility of stress or psychological, social, physical, or legal risks that are greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests?  Yes  No

If Yes, please justify your position: Subjects were asked to disclose their substance use behavior and to

rate their current stress levels, which could result in minor psychological risk. Given that many substance use behaviors are social in nature, we anticipated that these psychological risks were minor in nature; we allowed participants to skip any questions at any time to alleviate the risks. If subjects were underage, there is risk that they could have disclosed illegal behavior. Maintaining anonymous data, without links to identifying information, alleviated this risk.

5. Will medical clearance be necessary for subjects to participate because of tissue or blood sampling, administration of substances such as food or drugs, or physical exercise conditioning? Yes No

If Yes, please explain how the clearance will be obtained:

6. Will the subjects be deceived or misled in any way? Yes No

If Yes, please explain:

7. Will information be requested that subjects might consider to be personal or sensitive? Yes No

If Yes, please explain: Students may have found questions regarding their specific race or drinking habits to be personal.

8. Will the subjects be presented with materials that might be considered to be offensive, threatening, or degrading? Yes No

If Yes, please explain, including measures planned for intervention if problems occur.

9. Will any inducements be offered to the subjects for their participation? Yes No

If Yes, please explain: All participants will be entered into a sweepstakes with the opportunity to win 1 of 5 bursar credits of \$100 each. We recruited 568 participants; thus giving them 1 in 113 chance of winning a cash prize. Winners will be contacted by email by research staff.

NOTE: If extra course credit is offered, describe the alternative means for obtaining additional credit available to those students who do not wish to participate in the research project.

10. Describe the process to be used to obtain the consent/assent of all subjects including (as appropriate); who will seek the consent/assent, steps to minimize coercion or undue influence, and the method(s) to be used to document the consent.

Please provide copies of all consent documents with your application

Participants completed a set of survey questions about their perceived stress, acculturation and alcohol consumption behaviors. The surveys remained completely anonymous. Individual's participation in this study was strictly voluntary, and they could have withdrawn at any time without penalty.

11. Are you requesting a waiver of documentation of consent (no signature on consent/assent forms)? If you are conducting an anonymous survey, online or in paper form, check yes here.

Yes No

If yes, provide a justification for waiving documentation based on one of the two criteria allowing the waiver. We asked for subjects to consent by clicking an "agree" button; however we did not request a waiver of documentation of consent.

<p>12. Do you wish to waive of some of the elements of consent/assent or parental permission or the entire consent/assent or parent permission process?</p> <p><input type="checkbox"/>Yes <input checked="" type="checkbox"/>No</p> <p>If yes, provide a justification for the waiver that addresses each of the criteria that must be met for the waiver to be allowed.</p>
<p>13. Will the data be a part of a record that can be identified with the subject? <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No</p> <p>If Yes, please explain:</p>
<p>14. Describe the steps you are taking to protect the confidentiality of the subjects and how you are going to advise subjects of these protections in the consent process. Include information on data storage and access. If data will not be reported in the form of group means, please explain how the data will be reported.</p> <p>The anonymous nature of the survey protected participants.</p>
<p>15. Will the subject's participation in a specific experiment or study be made a part of any record available to his or her supervisor, teacher, or employer? <input type="checkbox"/>Yes <input checked="" type="checkbox"/>No</p> <p>If Yes, please describe:</p>
<p>16. Describe the benefits that might accrue to either the subjects or society. Note that 45 CFR 46, Section 46.111(a)(2) requires that the risks to subjects be reasonable in relation to the anticipated benefits. The investigator should specifically state the importance of the knowledge that reasonably may be expected to result from this research.</p> <p>It is our hope that this research study will influence decisions for future prevention programs; therefore, this study has the capacity to benefit students at OSU and other college campuses in the future.</p>



## Appendix B: IRB Approval Letter

### Oklahoma State University Institutional Review Board

Date: Monday, May 06, 2013  
IRB Application No ED1390  
Proposal Title: Influence of Perceived Stress on Alcohol Consumption in Hispanics in a Predominantly Causasian Environment  
Reviewed and Processed as: Exempt

**Status Recommended by Reviewer(s): Approved Protocol Expires: 5/5/2014**

Principal Investigator(s):

Benjamin Montemayor 717 W., University Apt. 34 Stillwater, OK 74074	Julie M. Croff 429 Willard Stillwater, OK 74078
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The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI, advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Cordell North (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,



Shelia Kennison, Chair  
Institutional Review Board

### Appendix C: Perceived Stress Short Scale

**In the last month, how often have you...**

	Never	Almost Never	Sometimes	Fairly Often	Very Often
Felt you were unable to control the important thing in your life?					
Felt confident about your ability to handle your personal problems?					
Felt things were going your way					
Felt difficulties were piling up so high that you could not overcome them?					

### Appendix D: Everyday Discrimination Scale

**In your day-to-day life, how often do any of the following things happen to you?**

	Almost Everyday	Once a week	Few times a month	Few time a year	Less than once a year	Never
You are treated with less courtesy than other people are.						
You are treated with less respect than other people are.						
You receive poorer service than other people at restaurants or stores.						
People act as if they think you are not smart.						
People act as if they are afraid of you.						
People act as if they think you are dishonest.						
People act as if they are better than you are.						
You are called names or insulted.						
You are threatened or harassed						

## Appendix E: Alcohol Quantity & Frequency Measure

**Within the last 30 days, how many days did you use (frequency):**

	Have used, but not in last 30 days	1 – 2 days	3 – 5 days	6 – 9 days	10 – 19 days	20 – 29 days	All 30 days
Alcohol							

**Of the past 30 days when you did drink an alcoholic beverage how much did you usually have at any one time?**

VITA

BENJAMIN NEIL MONTEMAYOR

Candidate for the Degree of

Master of Science

Thesis: PERCEIVED STRESS AND DISCRIMINATION INFLUENCE ON  
ALCOHOL USE AMONG HISPANICS IN A CULTURALLY PLURAL  
SOCIETY

Major Field: Health and Human Performance

Biographical:

Education:

Completed the requirements for the Master of Science in Health and Human Performance at Oklahoma State University, Stillwater, Oklahoma in July, 2013.

Completed the requirements for the Bachelor of Science in Sports and Exercise Science at West Texas A&M University, Canyon, Texas in May, 2011.

Experience:

**Graduate Assistant      OSU Health and Human Performance Department**  
Stillwater, Oklahoma      2012-2013

- Taught 120 undergraduates in a discussion section of Total Health and Wellness HHP 2603.
- Used socio-culture perspective to introduce new material in discussions over topics such as sexual health, personal health, substance abuse, and emotional wellness.
- Developed curriculum to emphasize in-class groups activities.

Professional Memberships: N/A