The Relationship Between Protective Behavioral Strategies and Negative Alcohol-Related Consequences

By

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Abstract

Excessive alcohol consumption is salient among the college population and many students are at risk of experiencing negative alcohol-related consequences. In an effort to reduce negative consequences, the use of protective behavioral strategies (PBS) emerged as a potential tool to aid students in safer and more responsible drinking practices. However, there was concern that not all PBS may be effective. The purpose of this study was to describe the relationship, if any, between protective behavioral strategy use and the experience of negative alcohol-related consequences as a result of alcohol consumption at a Midwestern university as measured by the American College Health Associations' National College Health Assessment – II and IIb. The participants in sample year 2011 were 632 (n = 224 male, n = 389 female), in 2013 were 674 (n = 255 male, n = 380 female), and in 2015 were 288 (n = 107 male, n = 180 female) undergraduate students, ages 18 to 23, enrolled at a large Midwestern university.

Descriptive statistics were used to describe PBS use and the experience of negative alcohol-related consequences. Results indicated that the most commonly used PBS were "eat before/during drinking", "use a designated driver", and "stay with the same group of friends". The top negative consequences experienced by participants were "did something you later regretted", "forgot where you were/what you did", "had unprotected sex", and "physically injured yourself". A series of independent sample t-tests were conducted to determine gender differences in PBS use. Results indicated that females use more PBS than males. Logistic regression analyses were run to determine the relationship between PBS and negative consequences, as well as to determine the

relationship between gender and negative consequences. Results indicated that less frequent use of PBS is associated with a greater likelihood of experiencing negative consequences, and being male increased the odds of experiencing negative alcohol-related consequences. PBS subscales stopping/limiting drinking (SLD), manner of drinking (MOD), and serious harm reduction (SHR) were related to negative consequences; however, the most solid relationship was with MOD strategies.

Findings resulted in the conclusion that MOD strategies are more effective in reducing alcohol consumption and negative consequences than SLD and SHR strategies. Even though not all PBS are equally effective, all PBS may be beneficial. Health educators should continue to promote and educate college students on PBS use. Based on the findings, PBS is a promising tool that college students can use to protect themselves against the experience of negative alcohol-related consequences.

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Table of Contents

List of Tables

List of Abbreviations

ACHA .....American College Health Association
CAS .....College Alcohol Study

DWI.....Driving While Intoxicated
DUI .....Driving Under the Influence

HERO.....Health Education Resource Office

MOD .....Manner of Drinking
MTF .....Monitoring the Future Study

NCHA .....National College Health Assessment
NCHRBS .....The National College Health Risk Behavior Survey
NCWSV .....The National College Women Sexual Victimization Survey
NIAAA .....National Institute on Alcohol Abuse and Alcoholism
NSDUH .....National Survey on Drug Use and Health

OIRP .....Office of Institutional Research and Planning
PBS .....Protective Behavioral Strategies

SAMHSA.....Substance Abuse and Mental Health Services Administration
SHR .....Serious Harm Reduction
SLD.....Stopping/Limiting Drinking

Chapter I

Introduction

Alcohol use and misuse on college campuses appears to be commonplace. Recent national surveys revealed that roughly 60% of college students indicated consuming alcohol in the past month, while nearly 40% reported drinking at binge levels (Substance Abuse and Mental Health Services Administration [SAMHSA], 2015; American College Health Association [ACHA], 2015). Findings from these surveys demonstrate that excessive alcohol consumption is salient among the college population and many students are at risk of experiencing a broad range of negative alcohol-related consequences, including academic problems, injuries, assaults, blackouts, car accidents, and death (O'Brien et al., 2006). Borden et al. (2011) linked binge drinking with negative alcohol-related consequences, where alcohol consumption at binge levels and beyond (5+ drinks per occasion for men and 4+ drinks per occasion for women) has a substantial impact on the academic achievement, personal relationships, risk-taking habits, and health of college students (Wechsler and Nelson, 2008). The excessive use and misuse of alcohol and the experience of negative alcohol-related consequences represents a significant problem among the college population.

Over the past few decades, there has been a growing concern regarding college students' experience of negative alcohol-related consequences. As a result of the widespread prevalence of consequences, the use of protective behavioral strategies (PBS) has emerged in the literature as a way to help students drink safely in college. PBS may alleviate or even eradicate the incidence of negative alcohol-related consequences. Although a strong basis of literature supports the use of PBS to reduce the experience of

negative alcohol-related consequences among college students, there appears to be some concern that not all PBS may be effective. Therefore, this study explored further the relationship between PBS and the experience of negative alcohol-related consequences among the population of interest.

Statement of Purpose

The purpose of this study was to describe the relationship, if any, between protective behavioral strategy use and the experience of negative alcohol-related consequences as a result of alcohol consumption at a Midwestern university as measured by the American College Health Associations' National College Health Assessment–II and IIb.

Research Questions

The research questions for this study were:

1. What is the relationship between protective behavioral strategies and negative alcohol-related consequences?
2. What percent of college students use protective behavioral strategies as described by the NCHA – II in the year 2011, and NCHA – IIb in the years 2013 and 2015?
3. What percent of college students experience negative alcohol-related consequences as described by the NCHA – II in the year 2011, and NCHA – IIb in the years 2013 and 2015?
4. What is the relationship between gender and protective behavioral strategies as described by the NCHA – II in the years 2011, and NCHA – IIb in the years 2013 and 2015?

5. What is the relationship between gender and negative alcohol-related consequences as described by the NCHA – II in the year 2011, and NCHA – IIb in the years 2013 and 2015?
6. What is the relationship between protective behavioral strategies, as organized as a three-factor subscale model (stopping/limiting drinking, manner of drinking, and serious harm reduction), and negative alcohol-related consequences?

Significance

Alcohol misuse on college campuses continues to be long-term public health concern. In order to address campus issues related to alcohol consumption and negative alcohol-related consequences, prevention efforts may attempt to resolve these issues through interventions. Interventions that incorporate the use of PBS are designed to assist students in more safe or responsible drinking practices to reduce alcohol-related harm, rather than promoting abstinence (Martens et al., 2005). Intervention programs that include a PBS component could be tailored to be more effective by understanding the type, frequency, and usefulness of PBS to reduce the experience of negative alcohol-related consequences among college students.

Extending the study of the relationship between PBS and negative alcohol-related consequences may accentuate certain PBS that may be more effective in the goal to reduce the incidence of alcohol-related consequences. Understanding the frequency of PBS use by the population of interest may contribute pivotal knowledge and insight for campus programming that induces alcohol-related behavior change. The college

environment is the ideal setting for prevention and intervention programs to promote safer drinking practices with the intent to alleviate alcohol-related harm.

Scope of the Study

Delimiting factors to this study were:

1. The participants were from a large Midwestern university.
2. The respondents to the survey were undergraduate students.
3. The only instruments used to obtain data is the ACHA's NCHA – II (2011) and ACHA's NCHA – IIb (2013; 2015) surveys.

Assumptions

Assumptions for this study were:

1. The participants responded truthfully and accurately to items on the survey.
2. The participants understood the survey items as intended by survey developers, thus permitting reliable responses.
3. The participants were a representative sample of the university student population.

Limitations

Limitations to this study were:

1. Participants were volunteers from classes where faculty agreed to permit the collection of data (2011; 2013) and randomly selected volunteers who completed an e-mailed survey (2015).
2. Due to the requirement of self-report items on the survey, it is possible that respondents were unable to accurately recall alcohol items.

3. Some survey items asked questions of a delicate nature (e.g., someone had sex with me without my consent; physically injured myself; seriously contemplated suicide) that may have caused respondents to omit specific items on the survey or cease participation in the study.
4. It is possible that students who completed the assessment in a survey period such as 2011, also completed the assessment in another survey period, such as 2013.
5. Some survey items that addressed negative alcohol-related consequences had low variability, which indicates the consequence was not experienced.

Definitions

For the purpose of this study, the following terms were defined as:

ACHA-NCHA-II: Items in the (Fall 2011) survey were written as the following: NQ16D "had sex without giving consent" and NQ16E "had sex without getting consent".

ACHA-NCHA-II: The (Spring 2013 and Spring 2015) surveys were modified to reflect a change in wording. Item NX16D was changed from "had sex without giving consent" to "someone had sex with me without my consent". Item NQ16E was changed from "had sex without getting consent" to "had sex with someone without their consent".

Protective Behavioral Strategies (PBS): A set of behaviors that are used immediately prior to, during, and/or after drinking that reduce alcohol use, intoxication, and/or alcohol-related harm (Pearson, 2013).

Binge Drinking: A pattern of drinking that brings blood alcohol concentration levels to 0.08g/dL, which typically occurs after five drinks for men and four drinks for women over a two-hour time period (The National Institute on Alcohol Abuse and Alcoholism, 2004).

Alcohol-Related Harm: An injury and/or violent act that occurs as a result of binge drinking (Ker & Ivers, 2006).

Conceptual Definitions

For the purpose of this study, the following conceptual definitions were used:

Negative Alcohol-Related Consequences: Alcohol-related physical or mental problems that occur as a result from the effects or actions of alcohol consumption.

Blackout: Having forgotten where you were or what you did as a result of alcohol consumption.

Chapter II

Review of the Literature

Introduction

Heavy alcohol consumption among college students continues to be a widespread public health concern. An overwhelming number of students use and misuse alcohol (Substance Abuse and Mental Health Services Administration [SAMHSA], 2016). Drinking appears to be a part of campus culture, an environment that often affords students opportunities to drink excessively (Merrill & Carey, 2016). Perhaps students view college as a period of time to explore drinking freely without the constraints of parental supervision, possibly as an expected part of their higher education experience. Although many incoming students start college with established drinking behaviors, research suggested that students begin to consume more alcohol while attending college (Nguyen, Walters, Wyatt, & Dejong, 2011). This type of research supports the need to address the problem associated with this study.

A survey of the literature indicated that college students engage in frequent and heavy alcohol consumption, which seems to be a prevailing behavior in a college environment. Excessive drinking may put students and others at an increased risk of experiencing a multitude of negative alcohol-related consequences. The consequences of excessive drinking may be severe, or even deadly. Students who choose to drink may employ protective behavioral strategies while drinking to reduce the risk of alcohol-related consequences. The literature seemed to support the notion that students who utilized protective behavioral strategies while consuming alcohol reported experiencing fewer negative alcohol-related consequences. Empirical research revealed that there

might be a relationship between protective behavioral strategies and negative alcohol-related consequences.

The review of literature covered a period of time from 1988 to 2016. This chapter is organized by topics that related to the problem. First, the definition of protective behavioral strategies and its use among college students, and gender differences is addressed. Second, negative alcohol-related consequences and the gender differences of students experiencing consequences are discussed. Third, a review of alcohol consumption rates among college students and gender differences is presented. Fourth, research on protective behavioral strategies and its relationship with negative alcohol-related consequences provided a critical segment of information to this study.

Protective Behavioral Strategies

Protective behavioral strategies are defined as "behaviors that are used immediately prior to, during, and/or after drinking that reduce alcohol use, intoxication, and/or alcohol-related harm" (Pearson, 2013, p.1030). Further, PBS can be described as a method to safeguard oneself against harm while consuming alcoholic beverages or safe drinking strategies (Pearson, 2013). These protective strategies are behaviors that can be taught and may be essential factors to keep in mind when designing interventions to address college student drinking (Martens, Ferrier, Sheehy, Corbett, Anderson, & Simmons, 2005; Martens, Martin, Littlefield, Murphy, & Cimini, 2011). Rather than promote abstinence on campus, PBS are purposed to help students drink responsibly and safely (Martens et al., 2005). Training students to use PBS may be the pivotal mechanism that drives forth prevention efforts to reduce the ubiquity of negative alcohol-related consequences experienced on college campuses.

Examples of PBS found on the National College Health Assessment include alternate non-alcoholic beverages with alcoholic beverages, avoid drinking games, choose not to drink alcohol, determine not to exceed a set number of drinks, eat before/during drinking, have a friend let you know when you have had enough, keep track of how many drinks being consumed, pace drinks to one or fewer per hour, stay with the same group of friends the entire time while drinking, and use a designated driver (American College Health Association [ACHA], 2015). These behaviors are practical strategies that demonstrate ways college students can manage drinking rates and blood alcohol level while consuming alcohol (Sugarman & Carey, 2007). For example, a college student attending a party may utilize protective strategies such as avoid drinking games and pace drinks to one or fewer per hour in order to control his or her rate of consumption. Additionally, students may use certain strategies that rely on friends to keep them safe while drinking like have a friend let you know when you have had enough, stay with the same group of friends the entire time while drinking, and use a designated driver.

Protective Behavioral Strategy Use Among College Students

According to a study conducted by Haines, Barker and Rice (2006), 73% of college students routinely use at least one protective behavioral strategy, and 64% of students who use protective behaviors use two or more. Several studies (Sugarman & Carey, 2007; Werch, 1990; Werch & Gorman, 1988) indicated that college students innately use protective behavioral strategies to control alcohol consumption. Werch and Gorman (1988) posit that efforts toward self-control are specifically linked to alcohol consumption rates and the level of experienced negative alcohol-related consequences. It

seems likely that students who suffer negative consequences, as a result of drinking, would employ protective strategies to avoid repeating the same outcome. Students' attempts to control the drinking situation by using PBS are meant to reduce the possibility that excessive alcohol use will lead to negative consequences (Benton et al., 2004). Werch and Gorman (1988) found that college students naturally increase efforts to manage alcohol consumption as they continue drinking; however, data indicates that most attempts seem to decline once they drink beyond moderation. Even though college students attempt to control the amount of alcohol they consume, it appears they may be incapable of managing drinking levels once they reach a certain threshold.

Researchers have identified specific protective behaviors employed by college students that focus on managing alcohol consumption, such as alternate non-alcoholic with alcoholic beverages, avoid drinking games, and determine not to exceed a set number of drinks (Benton et al., 2004; Haines et al., 2006; Martens et al., 2005). Some PBS involves depending on friends to help drinkers stick to preset limits; e.g., have a friend let you know when you have had enough or protect from situations that may be harmful; e.g., use a designated driver (Lewis et al., 2015). The use of such strategies may assist students in pre-arranging a plan to stay safe and drink responsibly.

Martens et al. (2004) conducted a study to examine the relationship between a set of PBS and negative alcohol-related consequences. Undergraduates from a large, public university in the northeast United States completed the National College Health Assessment (NCHA; American College Health Association, 2000). Results on the PBS scale indicated that approximately 75% of participants reported that they "sometimes" or "always" eat before/during drinking or use a designated driver. Only 33% of participants

reported utilizing strategies such as determine, in advance, not to exceed a set number of drinks or have a friend let you know when you have had enough. Martens et al. (2004) argued that results showed a distinct difference in the popularity of PBS. Eating before or after drinking alcohol is rather simple to implement, whereas not exceeding a set number of drinks or telling a friend when one has had enough necessitate a certain level of self-monitoring (Martens et al., 2004). Using a designated driver seems to be a highly utilized protective behavior, possibly because of the risk of punishment; e.g., being arrested for DWI or DUI charges. Perhaps the widespread educational campaigns addressing drunk driving contribute to its popularity (Martens et al., 2004). It is possible that students may see the ramifications of drinking and driving as more severe than other negative alcohol-related consequences. Planning for a designated driver and eating before or during drinking may be easy strategies to implement. However, it appears strategies that prevent excessive consumption such as avoiding drinking games and keeping track of how many drinks being consumed may be more difficult for students to employ. Peer pressure to engage in rapid alcohol consumption may be troublesome for students in social drinking situations. Research that investigates the frequency of PBS use among college students may be an important element in this study.

In a qualitative study, Howard, Griffin, Boekeloo, Lake, and Bellows (2007) recruited college freshman from a large, mid-Atlantic public university in the United States to participate in focus groups to discuss how to minimize alcohol-related harm to themselves and others while drinking. The results from this study suggested that college students have several strategies they use in an attempt to safeguard against negative alcohol-related consequences. Across all focus groups, participants indicated that

students should plan to stay with the same group of friends and designate at least one person to remain sober throughout the night (Howard et al., 2007). It appears the appointment of the sober person was a crucial aspect in safeguarding the drinkers in the group from harm. Howard et al. (2007) discussed the importance of empowering the sober person to make decisions that ensured everyone arrived home safely. Specifically, the role of the sober person consisted of helping friends stick to preset limits, preventing further consumption if drinking excessively, keeping the group together (e.g., not allowing anyone to leave with a stranger), making sure people get home safely, and taking care of friends who were getting sick, passing out, or experiencing negative consequences from drinking too much. Many participants mentioned use of other protective strategies such as eating before drinking, determining not to exceed a set number of drinks, and considered drinking only on weekends to reduce the risk of experiencing negative alcohol-related consequences. Constant across all focus groups, participants stated being in coed groups with friends was a way to be protected while drinking (Howard et al., 2007). It appears that students employ a variety of protective strategies to reduce the risk of negative alcohol-related consequences. According to the research, it seems that some strategies may be easier to implement than others that require a level of self-monitoring or reliance on a friend to ensure no harm takes place.

Protective Behavioral Strategies and Gender Differences

Several studies (Benton et al., 2004; Delva, Howell, Harrison, Wilke, & Jackson, 2004; Frank, Thake, & Davis, 2012; Haines et al., 2006; LaBrie, Lac, Kenney, & Mirza, 2011; Nguyen et al., 2011; Walters, Roudsari, Vader, & Harris, 2007) found that female college students are more likely to use PBS than male students. For instance, Walters et

al. (2007) concluded that gender was a significant predictor of PBS use, where female students reported greater protective behavior utilization than male students. Several factors may help explain gender differences. Delva et al. (2004) and Kenney & LaBrie (2013) indicated that students' natural use of PBS may exhibit cultural gender norms, such that males may feel insecure about using protective strategies perceived as cowardly (e.g., avoiding drinking games), and females may be attracted to PBS that offer them the capability to protect themselves from sexual harm (e.g., staying with the same group of friends the entire time while drinking). Additionally, Delva et al. (2004) reported that female students might be more apt to mingle and circulate in social groups that strengthen norms about protecting one another other. It seems females may have an innate need to feel safe, secure, and protected. Excessive drinking may place female students at greater risk of alcohol-related harm. The inherent need of protection and safety may persuade women to adopt the use of PBS while drinking. On the other hand, males may perceive themselves as the heroic protectors who are fearless, daring, and brave. Perhaps men underestimate the increased risks and associated negative consequences that may accompany excessive alcohol consumption.

Delva et al. (2004) conducted a study to identify the types of protective behavior strategies in which students engage in when they consume alcohol. Participants in the study completed the National College Health Assessment (NCHA, American College Health Association, 2002) at a large, public university. Males in the sample reported eating before or during drinking (70.7%), using a designated driver (63.9%), and keeping track of the number of drinks consumed (55.8%) when they partied or socialized. Females in the sample reported using a designated driver (74.6%), eating before or during

drinking (74.3%), and keeping track of number of drinks consumed (65.4%) when they partied or socialized. In this study sample, male and female college students seemed to have utilized the same top three protective behaviors. More females than males reported using a designated driver, eating before or during drinking, and keeping track of number of drinks consumed, which seems to support the notion that females are more likely to use PBS than males. Also, results indicated that men and women were equivocally unlikely to report the following protective behaviors: pacing the number of drinks to be consumed to one or fewer per hour, drinking alcohol look-alikes, choosing not to drink alcohol, and alternating nonalcoholic with alcoholic beverages (Delva et al., 2004). These results suggested that college students might not be interested in reducing the amount of alcohol consumed. Pacing one's drinks is a way to control the rate of consumption. Drinking too much too quickly may lead to intoxication, which may place students at a higher risk of experiencing alcohol-related harm. It is possible that students may intend to get drunk and have no intention of controlling consumption by alternating alcoholic and nonalcoholic beverages, as well as choosing not to drink at all.

Walters et al. (2007) evaluated PBS use among heavy drinking college students using the Protective Behavioral Strategy Survey (Martens et al., 2005). The most reported protective behaviors among male and female students were to know where your drink had been at all times, used a designated driver, and made sure that you went home with a friend. Using a designated driver was a top protective behavior for both males and females on the National College Health Assessment (NCHA, National College Health Association, 2002) and the Protective Behavioral Strategies Survey (PBSS, Martens et

al., 2005). Using a designated driver may be a chosen and useful protective behavior to avert serious consequences that emerge from drunk driving.

Protective behavioral strategies might be an effective means of decreasing negative alcohol-related consequences. Martens suggested that PBS might be an essential part of both prevention and treatment programs for college students (Martens et al., 2004). Promoting greater PBS use targeting the reduction of negative alcohol-related consequences seems to be not only beneficial, but also promising.

Negative Alcohol-Related Consequences

Excessive alcohol consumption leads to deficiencies in cognition and loss of motor abilities (White & Hingson, 2013). Heavy drinking college students who experience cognitive and motor impairments may be at increased risk of suffering negative alcohol-related consequences. Negative alcohol-related consequences are alcohol-related physical or mental problems that occur as a result from the effects or actions of alcohol consumption. Examples of negative alcohol-related consequences found on the National College Health Assessment include did something you later regretted; forgot where you were or what you did; got in trouble with the police; someone had sex with me without my consent; had sex with someone without their consent; had unprotected sex; physically injured yourself; physically injured another person; and seriously considered suicide (ACHA, 2015). In addition, consequences such as injuries, car accidents, physical or sexual assaults, blackouts, and even death may occur as a result of intoxication (O'Brien et al., 2006). The consequences associated with drinking too much may be severe and life threatening.

Negative Alcohol-Related Consequences Among College Students

According to O'Brien et al. (2006), college students are more susceptible to encounter a myriad of negative alcohol-related consequences because of the amount and frequency of alcohol use. Wechsler et al. (2000) found that frequent binge drinkers may be more at risk of experiencing alcohol-related problems than other students who drink. Further, Wechsler et al. (2002) reported that one in five college drinkers indicated encountering five or more negative alcohol-related consequences. From this research it seems that college students may be at risk of experiencing numerous negative alcohol-related consequences. This is concerning as it is possible these consequences could result in severe physical or mental damage, and even death.

Hingson, Zha, and Weitzman (2009) estimated that 599,000 college students experience unintentional injuries each year and 1,824 students die from injuries and car accidents as a consequence of alcohol consumption. In 2014, Hingson, Zha, and Smyth (2017) estimated that among 18-to 24-year olds, nearly 50% of traffic deaths occurred as a result of alcohol use. In addition, each year nearly 646,000 students experience assault by another student who has been drinking, and an estimated 97,000 students become victims of alcohol-related sexual assault (Hingson et al., 2009). Similarly, students may suffer academic consequences as a result of drinking. Approximately one in four students report academic consequences, such as missing class, falling behind in coursework, performing poorly on tests or papers, and getting lower grades in general (Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998). It appears students who drink frequently and excessively may experience negative alcohol-related consequences, which could adversely impact their overall health and success in college. Even though college

students may view social drinking of alcohol with friends as fun and exciting, consequences experienced from drinking could have lasting effects. For example, injuries could lead to permanent disability or death. Being a victim of physical or sexual assault may affect one's health status or ability to engage in healthy relationships. Furthermore, academic consequences might impact the potential to graduate in a timely manner or possibly lead to dropping out of college. The severities of negative alcohol-related consequences seem to exist and therefore, present a public health concern.

Borden et al. (2011) examined the relationship between binge drinking and alcohol-related problems in a study with a sample of 4,154 participants from 13 Midwestern universities. Results indicated a positive relationship between binge drinking and alcohol-related problems, where binge drinkers in the sample reported more alcohol-related problems than their counterparts, non-binge drinkers (Borden et al., 2011). Results support previous findings that suggested students who engage in frequent binge drinking are more likely than other students to suffer from alcohol-related problems (Wechsler, Lee, J., Kuo, M., & Lee, H., 2000). According to results from the Harvard School of Public Health College Alcohol Study (CAS), 50% of students who reported binge drinking three or more times in the past two weeks also indicated experiencing five or more negative alcohol-related consequences (Wechsler et al., 2000). It appears that frequent binge drinkers may put students at risk suffering from numerous consequences.

The College Alcohol Study has shown that consuming alcohol at and above binge levels directly affects students' academic achievement, relationships, engagement in risky behaviors, and wellbeing (Wechsler & Nelson, 2008). Powell, Williams, and Wechsler (2004) found that binge drinking was associated with a lower grade point average, which

was mediated by less time devoted to studying. It appears students who frequently consume alcohol at binge levels may experience difficulties in upholding academic responsibilities. Furthermore, researchers found that 54% of frequent binge drinkers reported a minimum of one blackout episode in the previous year and defined as having forgotten where they were or what they did while drinking (Wechsler, Lee, Kuo, & Lee, 2000; White, 2003). White, Signer, Kraus, and Swartzwelder (2004) conducted a study to understand college students' incidents with blackouts. Results from this study indicated involvement in risky behaviors during blackout episodes including sexual activity with both familiar and unfamiliar persons, vandalism, disagreements and conflicts, and others. White et al. (2004) suggested that students possibly consumed alcohol in a manner that led to elevated blood alcohol content (BAC) levels throughout the evening of their latest blackouts. It seems binge drinkers may be more likely to suffer from blackouts, with little to no recollection of where they were or what they did, which may be frightening. As a result, a blackout might intensify the magnitude of negative alcohol-related consequences. For example, it is possible that students may not recall engaging in sexual activity. Wechsler et al. (2000) found that binge drinking is associated with precarious sexual conduct, such as engaging in spontaneous sexual activity and neglecting the use of protection during sex. Furthermore, on the CAS, researchers found that nearly 400,000 respondents reported having unprotected sex with 110,000 students having been too drunk to know if they consented to sex (Hingson, Heeren, & Zakocs, 2002). Another risky behavior that binge drinkers seem to engage in is drunk driving or riding with someone under the influence of alcohol. Wechsler, Lee, J., Nelson, and Lee, H. (2003) found that binge drinkers are more inclined to put themselves and others at risk by

drinking and driving. According to Hingson et al. (2009), around 2.7 million college students operated vehicles while under the influence of alcohol and more than 3 million rode with a drunk driver (Hingson, Heeren, Winter, & Wecshler, 2005). It seems that engaging in risky behaviors while drinking might lead to consequences that could be life altering. For example, unintended pregnancies as a result of failing to use protection or getting into trouble with the police as a consequence of drunk driving.

It appears many college students adopt a drinking style that cultivates immoderation and drunkenness. Almost half of college drinkers indicated that drinking to intoxication is a major objective for drinking (Weschler et al., 2002). Moreover, 23% reported consuming alcohol 10 or more times in the past and nearly 30% stated they got drunk three or more times in the past month (Wechsler et al., 2002). According to Boekeloo, Novik, and Bush (2011), it is more plausible for college students who drink with the intention of getting drunk to suffer from an array of negative alcohol-related consequences than others who drink. In a study conducted by O'Brien et al. (2006), students who indicated getting drunk even one time in a normal week have an increased risk of experiencing injuries or accidents that necessitate medical care, causing injuries in motor vehicle crashes, being a victim of unwanted sexual contact, or harming others in different ways. From this research, it seems evident that drunkenness among college students is concerning. It is possible that students do not realize the severity of negative alcohol-related consequences. Consequences from drinking too much may have long-term implications for students that range from employment to their own health.

Students who drink excessively not only place themselves at risk of experiencing negative alcohol-related consequences but may also place other students and nearby

communities at risk of experiencing secondhand effects. Effects include secondary problems such as noise disturbances, vandalism, arguments and fights, and physical or sexual assault (Hingson et al., 2005; 2009; Wechsler et al., 2002). The CAS study found that abstaining or non-binge drinking students living on-campus suffered adverse effects from others' drinking, with 55% of respondents experiencing a minimum of two secondhand effects (Wechsler et al., 2002). In the same study, 60% of students indicated having study or sleep interruptions, 48% reported having to care for an intoxicated student, 29% said they had been disrespected or demeaned, and 19% said they had been in a major fight with a drunk student (Wechsler et al., 2002). It seems that negative alcohol-related consequences not only impact students who drink but may adversely affect peers and people in surrounding communities.

Negative Alcohol-Related Consequences and Gender Differences

Several studies (Haines et al., 2006; Park & Grant, 2005; Palmer at al., 2010) found that female college students report fewer negative alcohol-related consequences than male college students. Perhaps female students' utilization of protective behavioral strategies reduces the number of negative alcohol-related consequences they report. Benton et al. (2004) speculated that male students might experience more alcohol-related problems because of less use of protective behavior strategies or greater alcohol consumption. It appears that females experience fewer negative alcohol-related consequences, which supports the need to address gender differences in this study.

According to research conducted by Delva et al. (2004), results indicated that almost 55% of female drinking college students reported experiencing at least one negative alcohol-related consequence in the past year. Among the females in the sample,

43% reported doing something they later regretted, 37% indicated forgetting where they were or what they did, 24% stated they had physically injured themselves, and 21% said they had unprotected sex. In the same study, 64% of male drinking college students reported experiencing at least one negative alcohol-related consequence in the past year. Among the males in the sample, 46% reported doing something they later regretted, 38% indicated forgetting where they were or what they did, 25% stated they had unprotected sex, and 23% said they had physically injured themselves (Delva et al., 2004). According to trends found from the CAS study, the most prevalent reported negative alcohol-related consequences included doing something you regret, missing a class, driving after drinking, and forgetting where you were or what you did (Wechsler et al., 2002). It appears that the most common consequences for students on both, the CAS and NCHA, are doing something you regret and forgetting where you were or what you did. It seems many college students, both male and female, report experiencing regret and possible blackouts as a negative consequence of alcohol consumption. According to Abbey (2002), one of the prominent alcohol-related problems on campus is unsolicited sexual conduct or assault. Palmer, McMahon, Rounsaville, and Ball (2010) found that 34% of college women and 31% of college men indicated experiencing unsolicited sexual encounters, whereas men more frequently reported participating in sexually coercive behavior than women. A few studies (Abbey, McAuslan, & Ross, 1998; Abbey, 2002) found that 50% of all sexual assaults of students involve drinking by the victim, perpetrator or both. Moreover, Palmer et al. (2010) indicated that victims of unsolicited sexual encounters reported higher drinking rates, greater negative alcohol-related consequences, and less PBS use. Specifically, for women, Howard, Griffin, & Boekeloo

(2008) and Parks & Fals-Stewart (2004) found that binge drinking is associated with a higher risk of sexual victimization. Consequently, higher drinking rates and fewer PBS use among vulnerable victims may increase the probability of repeated victimization (Palmer et al., 2010). It appears that both, male and female college students, who experience unsolicited sexual behavior may benefit from using PBS to reduce alcohol consumption, negative alcohol-related consequences, and the risk of re-victimization.

Negative alcohol-related consequences can be serious and life threatening. It appears that college students who consume alcohol, especially binge drinkers, have a higher probability of suffering from alcohol-related problems. The severity of negative alcohol-related consequences is troublesome and a major concern that needs addressed in the college environment. The prevalence of negative alcohol-related consequences among college students supports the notion that the use of PBS may be especially warranted to minimize the risk of harm to self or others.

Alcohol Consumption

Numerous college students consume alcohol and it seems that they often drink before reaching legal age. According to the 2016 Monitoring the Future Study, around 80% of college students indicated drinking alcohol at least one time in the past and 67% reported being intoxicated (SAMHSA, 2016). Weitzman, Nelson, and Wechsler (2003) found that 64% of college freshman indicated drinking alcohol over the past year while still in high school. Moreover, in a study of college bound high school graduates, almost 70% of participants reported drinking alcohol with average consumption rates of nine drinks per week in the prior three months of the survey (Suftin et al., 2009). Further, Weitzman et al. (2008) found that nearly 50% of all student binge drinkers engaged in

binge drinking prior to attending college. Many college students seem to develop drinking habits in high school and continue to use alcohol in college.

Alcohol Consumption Among College Students

Results on national surveys revealed that approximately 60% of college students consumed alcohol in the past month, and nearly 40% reported drinking at binge levels (SAMHSA, 2015; ACHA, 2015). The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as "a pattern of drinking that brings blood alcohol concentration (BAC) levels to 0.08 g/dL, which typically occurs after five drinks for men and four drinks for women over a two-hour period" (NIAAA, 2004). The first College Alcohol Study, conducted in 1993, discovered that binge drinking was salient among the American college population (Wechsler & Nelson, 2008). Results from the study revealed that college students were drinking excessively, as indicated on survey measures such as frequency of consumption, frequency of intoxication, and frequency of drinking to get drunk (Wechsler et al., 2002). As a result, findings indicated that two out of five college students were binge drinkers (Wechsler et al., 2002). Over the past few decades, binge drinking rates have remained steady across national data sources such as the College Alcohol Study (CAS), Harvard School of Public Health; Monitoring the Future Study (MTF), University of Michigan; National College Health Risk Behavior Survey (NCHRBS), Centers for Disease Control and Prevention; National Survey on Drug Use and Health (NSDUH), Substance Abuse and Mental Health Services Administration; and the National College Health Assessment (NCHA), American College Health Association. Findings from these studies have suggested that a large percentage of college students, around 40-45%, engage in frequent binge drinking. Despite efforts to reduce heavy

alcohol consumption and the negative alcohol-related consequences associated with its use, it seems students are continuing to drink excessively.

Alcohol Consumption and Gender Differences

Male college students generally consume more alcohol than female college students (O'Malley & Johnston, 2002). Specifically, college men report higher rates of alcohol consumption in number of drinks per week (Benton et al., 2006; Kenney & LaBrie, 2013; Palmer et al., 2010; Suftin et al., 2009). Furthermore, several studies (Benton et al., 2004; Delva et al., 2004; Kenney & LaBrie, 2013) suggested that male students are more likely to be binge drinkers than female students. According to the National Survey on Drug Use and Health, nearly 45% of college males and approximately 34% of college females reported consuming alcohol at binge levels (SAMHSA, 2013). In addition, Delva et al. (2004) found that 29% of college men and 23% of college women indicated drinking five or more alcoholic beverages at a sitting on one or two occasions during the two weeks preceding the survey. In the same survey, 33% of males and 20% of females reported drinking equal amounts of alcohol on three or more occasions during the two-week time frame (Delva et al., 2004). Moreover, in a survey conducted by Benton et al. (2004), results indicated that on average male students consumed nine drinks per occasion and female students averaged five drinks per occasion. The findings reported in these studies demonstrate the consistent pattern of binge drinking among college students.

The high rate of alcohol use is alarming and according to the definition of the NIAAA, consuming five or more drinks for males and four or more drinks for females in about two hours, is the approximate consumption rate that may lead to BAC levels to

0.08g/dL. This BAC level is the most widely accepted metric of intoxication for legal purposes in several states. DeMartini et al. (2013) alluded that consuming alcohol at this level has become commonplace among the college population. In one study, findings indicated that over half of all drinkers in the sample reported getting drunk at least once a week, and this was more apparent for males than females (O'Brien et al., 2006). According to LaBrie et al. (2011), males consume more alcohol per occasion, more frequently, and over longer time frames, than females. From this research, it appears male college students are consuming alcohol at alarming rates that will likely lead to intoxication and the experience of negative alcohol-related consequences.

The binge drinking behavior among college students continues to be a matter of public health concern. It appears students are consuming excessive amounts of alcohol, with many purposing to get drunk. Thus, leaving students at increased risk of encountering negative alcohol-related consequences such as academic problems, injuries, death, or victims of sexual or physical assault.

PBS, Negative Alcohol-Related Consequences, and Alcohol Consumption

Protective behavioral strategies may be a promising technique that students can employ to control the rate of consumption, as well as reduce the occurrence of alcohol-related problems. In order to determine the effectiveness of protective behavioral strategies, a review of research examining the relationship between PBS and negative alcohol-related consequences were necessary to address the problem in this study.

Many studies supported the notion that a relationship exists between protective behavioral strategies and negative alcohol-related consequences (Araas & Adams, 2008; Arterberry et al., 2014; Barry et al., 2016; Benton et al., 2004; Delva et al., 2004; Haines

et al., 2006; LaBrie et al., 2010; Martens et al., 2004; 2005; 2007; Patrick et al., 2011; Suftin et al., 2009). Martens et al. (2004) found that lower use of PBS was associated with higher experience of negative alcohol-related consequences, even after controlling for gender and alcohol consumption. Araas and Adams (2008) examined the relationship between PBS and negative alcohol-related consequences among a national sample of college students who completed the National College Health Assessment in the spring of 2004. Results indicated that greater PBS use was associated with fewer negative alcohol-related consequences, while less frequent use of PBS was correlated with increased negative alcohol-related consequences (Araas & Adams, 2008). In addition, other studies found similar results where PBS use was associated with fewer negative alcohol-related consequences (Arterberry et al., 2014; Barry et al., 2016; Benton et al., 2004; Delva et al., 2004; Martens et al., 2005; 2007; Patrick et al., 2011) and less frequent use of PBS was related to increased negative alcohol-related consequences (Araas & Adams, 2008; Martens et al., 2004; Yusko et al., 2008). Moreover, Delva et al. (2004) found that college students who experienced a negative alcohol-related consequence also indicated employing the fewest PBS. Furthermore, in the study conducted by Haines et al. (2006), results suggested that the more often college students employ PBS the less likely they were to report negative alcohol-related consequences. The research seems to support a negative relationship between PBS and consequences, such that higher rates of PBS use may lower the rates of experiencing alcohol-related consequences. Therefore, employing PBS while drinking might be an effective technique for decreasing the incidence of negative alcohol-related consequences.

Martens et al. (2005) found that PBS is not only associated with negative alcohol-related consequences, but also with alcohol consumption (Martens et al., 2005). Several studies indicated that greater PBS use is related to less alcohol consumption (Benton et al., 2004; Frank et al., 2012; Linden, Lau-Barraco, & Milletich, 2014; LaBrie et al., 2010; 2011; Martens et al., 2005; 2007; Sugarman & Carey, 2007; Walters et al., 2007). For example, in one particular study, findings indicated that use of PBS was associated with consuming fewer drinks (LaBrie et al., 2011). Perhaps students employing protective strategies such as (e.g., alternate nonalcoholic beverages with alcoholic beverages, determine in advance not to exceed a set number of drinks, or avoid drinking games) contributed to this finding. Walters et al. (2007) reported that college students who indicated higher rates of alcohol consumption reported significantly lower total PBS scores. Therefore, it appears that college students who use PBS while drinking may consume less alcohol.

Benton et al. (2004) and Parks and Grant (2005) indicated that increased alcohol use is associated with a higher rate of negative alcohol-related consequences and as PBS use increased, the occurrence of negative alcohol-related consequences decreased (Benton et al., 2004; 2006). On the other hand, as students continued to consume more alcohol they were less likely to utilize protective strategies and more likely to experience negative alcohol-related consequences (Benton et al., 2004; 2006). In addition, several studies (Arterberry et al., Borden et al., 2011; Kenney & LaBrie, 2013; LaBrie et al., 2011; Linden et al., 2014; Martens et al., 2011) found that students who consumed lower levels of alcohol reported less negative alcohol-related consequences. According to the literature, it appears that greater use of PBS may be a critical and essential component for

college students to drink safely and responsibly. PBS may help college students limit the amount of alcohol they consume, which may lead to decreased alcohol-related problems.

In a study conducted by Borden et al. (2011), results indicated that the use of PBS was inversely related to binge drinking and negative alcohol-related consequences. Moreover, findings from this study suggested that a higher level of PBS was correlated with a weaker connection between binge drinking and negative alcohol-related consequences, whereas lower levels of PBS was correlated with a stronger connection between binge drinking and negative alcohol-related consequences (Borden et al., 2011). In another study, Benton et al. (2004) found that students utilizing PBS while binge drinking were not as likely to report negative alcohol-related consequences. Results from these studies appear to support the notion that PBS may be a beneficial and effective means for reducing alcohol-related problems, even among students who binge drink.

Although the majority of the literature supported a negative correlation between PBS, negative alcohol-related consequences, and alcohol consumption, there seemed to be some concern regarding the effectiveness of all PBS to reduce alcohol consumption and negative alcohol-related consequences. For example, Sugarman and Carey (2009) concluded that greater PBS use does not always reduce drinking volume. In fact, results suggested that all protective strategies were not equally effective in relation with alcohol consumption (Sugarman & Carey, 2009). Specifically, Lewis et al. (2015) found that more frequent use of strategies that reduce serious harm, such as (e.g., use a designated driver and make sure you go home with a friend) and target stopping or limiting alcohol use, such as (e.g., limiting the number of drinks and have a friend let you know when you have had enough) were related to higher consumption levels and greater likelihood of

experiencing negative alcohol-related consequences. In contrast, students who employed more strategies that aim to protect against rapid alcohol consumption, such as (e.g. avoid drinking games) reported lower alcohol use and were less likely to encounter alcohol-related problems (Lewis et al., 2015). Perhaps students purposely choose certain types of protective strategies that may lower the risk of harm, but increase alcohol consumption. For instance, Lewis et al. (2015) posited that college students might employ specific strategies (e.g., use a designated driver) because they plan to consume greater amounts of alcohol. Even though there is evidence that supports an inverse relationship between PBS and alcohol consumption, it appears some PBS might actually increase alcohol use in college students.

Moreover, Suftin et al. (2009) found that certain PBS was more strongly associated with negative alcohol-related consequences. For example, among males and females, strategies such as (e.g., choose not to drink, use a designated driver, keep track of how many drinks being consumed, pace drinks to one or fewer an hour, and avoid drinking games) were more strongly related with decreasing alcohol-related problems (Suftin et al., 2009). Even though an inverse relationship between PBS and negative alcohol-related consequences has been well supported in the literature, it appears that not all types of PBS are effective and equally beneficial.

Martens et al. (2007) categorized various types of PBS into three separate groups that were labeled: serious harm reduction (SHR) such as use a designated driver or make sure you go home with a friend, stopping/limiting drinking (SLD) such as limit the number of drinks or have a friend let you know when you have had enough, and manner of drinking (MOD) such as avoid drinking games. Combined, the PBS groups were

significantly related to alcohol consumption and negative alcohol-related consequences. However, the strongest relationship existed with manner of drinking (MOD) strategies (Martens et al., 2007).

Specific PBS targeting the manner in which one consumes alcohol appears to be the most effective strategies that reduce both alcohol consumption and negative alcohol-related consequences (Martens et al., 2007). Although these strategies seem to be more effective than others to reduce drinking rates, they are not frequently used by college students (Suftin et al., 2009). For example, Suftin et al. (2009) found that less than half of college students reported using the protective strategy, avoid drinking games. In a survey conducted by Hass, Smith, Kagen, and Jacob (2012) results indicated that incoming college freshman reported previous alcohol use and participating in drinking games about half of the time they drank alcohol. According to Zamboanga et al. (2013), drinking games are social events that consist of following a certain set of rules, doing some type of physical or cognitive task, dictating the amount of alcohol and the time in which participants should drink, and promoting rapid consumption to hasten intoxication. It appears that participation in drinking games may accelerate consumption rates in a short amount of time, which may also increase the likelihood of experiencing negative alcohol-related consequences. Therefore, the infrequent use of strategies that help control the amount and rate of alcohol consumption may be troubling. Even though certain protective strategies that target the manner of drinking may be most effective, there is strong and compelling evidence that suggests any use of PBS may be beneficial for college students.

PBS, Negative Alcohol-Related Consequences, Alcohol Consumption, and Gender Differences

Several studies (Benton et al., 2004; Borden et al., 2011; Haines et al., 2006; Walters et al., 2007) indicated that female college students are more likely than male college students to utilize PBS. According to Haines et al. (2006), females reported higher PBS use and lower negative alcohol-related consequences, whereas males indicated lower PBS use and higher negative alcohol-related consequences. Suftin et al. (2009) found that PBS use was significantly associated with negative alcohol-related consequences; however, this was only true for females. Similarly, Delva et al. (2004) reported a significant and stronger correlation between PBS and negative alcohol-related consequences for women but not for men. Even though PBS is linked to negative alcohol-related consequences, some research suggested that alcohol consumption (i.e., number of drinks) was the lone variable that predicted negative alcohol-related consequences for men (Benton et al., 2004; Delva et al., 2004). According to the research, it seems that females are more likely to use PBS and less likely to experience negative alcohol-related consequences than males. Perhaps male college students are more inclined to take risks and engage in rapid alcohol consumption (e.g., drinking games) than female students. It may be possible that in social settings, such as parties, college men perceive PBS use as weak. Perhaps the college environment promotes an atmosphere for male students to challenge one another in drinking games or other activities that encourage heavy alcohol use.

According to a study conducted by Frank et al. (2012), males reported higher levels of alcohol use, drank for longer periods of time, used less PBS, and experienced

more negative alcohol-related consequences than females in the study. Borden et al. (2011) found similar results such that males indicated higher rates of binge drinking, less use of PBS, and more frequent experience with negative alcohol-related consequences. There seems to be a clear gender difference in the utilization of PBS, alcohol use, and the experience of negative alcohol-related consequences, which further supports the need for this study.

Summary

It appears many college students engage in frequent and excessive alcohol use. As a result of alcohol consumption, students may be at risk of experiencing a myriad of negative alcohol-related consequences, which could be severe. Although abstaining or reducing alcohol use is the best way to prevent negative alcohol-related consequences, the use of PBS seems to be an effective means of decreasing alcohol-related harm among college students. Even though some research suggested that not all PBS are equally helpful, there is sufficient evidence to support the idea that students who drink can benefit from applying many PBS.

The review of literature revealed an inverse relationship between PBS use and negative alcohol-related consequences. Moreover, gender differences were found in PBS use, alcohol consumption, and the experience of negative alcohol-related consequences. Further investigation in the type and frequency of PBS use and its association with reduced consequences may provide additional insight for college alcohol prevention programs targeting increased PBS use to reduce the incidence of negative alcohol-related consequences.

Chapter III

Methods

Introduction

This study evolved as a request from the Health Education Resource Office (HERO) located in the Health Center at the participating university to analyze existing data obtained from the NCHA – II in 2011, and NCHA – IIb in 2013 and 2015, to determine if a relationship exists between PBS and negative alcohol-related consequences. The outcome of this study may provide critical and essential information for the HERO in future program development to address student alcohol use and the experience of negative alcohol-related consequences on campus. The Assistant Director of the Health Center and the Program Manager of the HERO granted access to the data for the purpose of this study.

Purpose

The purpose of this study was to describe the relationship, if any, between protective behavioral strategy use and the experience of negative, alcohol-related consequences as a result of alcohol consumption at a Midwestern university as measured by the American College Health Associations' National College Health Assessment-II and IIb.

Review of Literature

The literature review examined PBS use, alcohol consumption, and the experience of negative alcohol-related consequences among the college student population. Specifically, the review sought empirical literature assessing the relation among PBS use, alcohol consumption, negative alcohol-related consequences, and gender differences. For

the purpose of this study, the review of literature was conducted from 1988 to 2016, from the formative research to the time period when the review was conducted in 2017.

Research Design

This study was designed to analyze secondary data of the National College Health Assessment-II and National College Health Assessment – IIb results obtained from students at the participating university during the spring semesters of 2011, 2013, and 2015. All data employed a cross-sectional survey design. Cross-sectional research is designed to assess several groups of subjects at the same point in time (McMillan & Schumaker, 2010). Proportional, stratified sampling was utilized; a procedure where the population is divided into subgroups based upon chosen variables and replicates the proportion of the different strata in the population (McMillan & Schumaker, 2010). This study embraced a nonexperimental design, in which researchers describe and examine relationships between different phenomena without any intervention or manipulation of conditions (McMillan & Schumaker, 2010).

Specifically, this research was correlational and aimed to determine if a relationship exists between two phenomena, PBS and negative alcohol-related consequences. According to McMillan and Schumaker (2010), correlational research comprises a statistical measure of the degree of association between two or more variables of interest. Overall, this correlational research design was best suited for the study because it provided ease of acquiring survey-based data from a satisfactory amount of participants to describe and examine if a relationship exists between PBS and negative alcohol-related consequences as measured by recall on survey items.

Participants/Site Selection

The participants in the original studies were selected by the Health Education Resource Office staff located in the participating university's health center. The HERO staff followed a specific set of procedures to ensure a random selection of participants for both, paper-based surveys and online/web-based surveys. The 2011 and 2013 paper-based surveys were dispersed in randomly selected classrooms at the university. The 2015 online/web-based survey was emailed to a random selection of students at the participating institution. For all assessment years included in the study, the ACHA recommended a sample size of 1,500 participants in order to receive an accurate representation of the student population, which takes into account an imperfect return rate.

First, for assessment years 2011 and 2013, the HERO staff worked directly with the Office of Institutional Research and Planning (OIRP) to identify and select at random courses and participants to attain the recommended sample size and necessary demographics. The OIRP provided an interactive spreadsheet to the HERO staff to aid in the process of class selection for the study. Key course information comprising subject and catalog number, title, day and time, enrollment, and instructor name and email were included. Additionally, counts for demographics based on gender, ethnicity, level in school, and enrollment status was incorporated. The worksheet contained formulas to calculate the percentage of the number of required demographics needed to ensure an evenly distributed sample. The program manager of the HERO selected courses from the provided worksheet and put them into the formula to create a random grouping of courses. If a professor or instructor declined to participate, the class selection process

continued by choosing an alternate course until the participating classes best achieved a representative sample of the university's population.

For assessment year 2015, the HERO staff recruited the assistance of the OIRP to identify and select at random a list of participants for the emailed survey. The OIRP created a new process to achieve a representative sample of the university's population stratifying demographics by gender, ethnicity, level in school, and enrollment status. The OIRP provided the HERO staff with a list of names and email addresses in the week prior to the survey to ensure the most current data.

Second, for each assessment year included in the study, an application for project approval was submitted to the university's Human Subjects Committee (Appendix A), and a request was made to the Associate Vice Provost for Research and Graduate Studies for Project-Specific Principal Investigator Status for the Manager of the HERO within Student Health Services (Appendix B). In 2015, a special request was submitted to the participating university's Associate General Counsel to conduct the NCHA through an online/web-based survey that would be emailed to a random selection of students, which included a drawing for incentives (Appendix C). Approval for the request was granted.

Third, for assessment years 2011 and 2013, the HERO obtained approval for the project by the Human Subjects Committee (Appendix D). Following approval, a request for participation by email (Appendix E) was distributed from the Interim Senior Vice Provost for Academic Affairs and the Health Education Resource Office Manager to professors and instructors whose courses were chosen in the initial course selection process. Dates were scheduled for the administration of the survey in courses where the professor or instructor granted permission and access to the classes. If a professor or

instructor declined to participate, an alternate course with equitable demographics was selected. This process continued until the necessary demographics were secured to achieve a representative sample of the university population.

For assessment year 2015, the HERO obtained an assigned determination of Not Human Research from the Human Subjects Committee (Appendix F). Following the determination, the Vice Provost for Student Affairs sent a letter of support to the ACHA-NCHA Program Office to carry out the NCHA in the spring of 2015. For assessment year 2015, the email survey period transpired from April 7, 2015, to April 30, 2015, and was sent to 5,000 students at the participating university.

For this study, an application was submitted to the Human Subjects Committee for IRB approval (Appendix G) and was obtained (Appendix H). In the secondary analysis, the participants sampled were restricted to undergraduates, aged 18-23, identifying as male or female. This age group best represents the college population for this study.

Procedures

The Health Education Resource Office staff managed survey data collection for the assessments in years 2011, 2013, and 2015. In the years 2011 and 2013, HERO staff administered paper-based surveys in the classroom. An information statement was provided to students along with the survey (Appendix I). The information statement explained the purpose of the study, minimal risks and benefits, confidentiality, and the option to decline participation at any time. The survey took approximately 30 minutes to complete. Participants were instructed to place completed surveys in the data collection box. During the survey collection period, healthy snack bars were available for students

to obtain as an incentive. Immediately following the data collection period for each course, the completed surveys were returned and kept secure in the Health Education Resource Office. Once all data collection periods were complete, all participant surveys and the Institution of Higher Education Demographics Survey (Appendix J) were returned to the American College Health Association for tabulation.

In the assessment year 2015, the Health Education Resource Office staff conducted data collection for online/web-based surveys. A recruitment script, including the survey link, was emailed to 5,000 randomly selected students at the participating university (Appendix K). The email recruitment script explained the purpose of the study, confidentiality, and the option to decline participation at any time. In order to safeguard participant confidentiality, email addresses were destroyed by ACHA before data was compiled and shared with the participating university. The raw data file shared with the university did not contain any distinct identifiers. Participants were encouraged to complete the survey in one sitting, which was expected to take approximately 30 minutes. Participants who completed the NCHA-Web survey were entered into a drawing for a chance to receive an incentive. Incentives included an iPad 4 (16MB), beanbag chair, one of five 60-minute massages, and one of ten 30-minute massages. Upon completion of the online/web-based data collection period, the Institution of Higher Education Demographics Survey (Appendix L) was returned to the American College Health Association for tabulation.

Testing Instruments

National College Health Assessment. The National College Health Assessment (NCHA) is a nationally recognized survey, sponsored and distributed by the American

College Health Association (ACHA). The NCHA II and NCHA IIb surveys consist of 65 and 66 questions, respectively, and are designed to assess college student health behaviors such as: alcohol, tobacco, and other drug use; sexual health; weight, nutrition, and exercise; mental health; and personal safety and violence. An interdisciplinary team of college health professionals developed the original ACHA-NCHA (NCHA – I), and pilot-tested it in 1998-1999 (ACHA, 2005). The first administration of the survey took place in Spring 2000. The original NCHA circulated from Fall 2000 to Spring 2008. The NCHA – II was utilized from Fall 2008 until Spring 2011 (Appendix M). Some items on the NCHA – II were modified beginning with the Fall 2011 survey period. Edits were made to nq15 (alcohol consequences, nq54 (race and ethnicity), and nq65 (disabilities). Additionally, nq66 was added to secure student veteran status. In order to reflect the modifications at that time, the survey was named NCHA – IIb. The NCHA – IIb circulated from Fall 2011 to Spring 2015 (Appendix N).

Reliability and validity analyses were conducted by comparing pertinent percentages with nationally representative databases, performing item reliability analyses comparing overlapping items with a nationally representative database, conducting construct validity analyses comparing ACHA-NCHA results with a nationally representative database, and conducting measurement validity comparing results of the ACHA-NCHA with a nationally representative database (American College Health Association, 2005). The data sets used for evaluation of reliability and validity were the Centers for Disease Control and Prevention's National College Health Risk Behavior Survey (NCHRBS), 1995; Harvard School of Public Health 1999 College Alcohol Study (CAS); United States Department of Justice: The National College Women Sexual

Victimization Study (NCWSV) 2000; and the ACHA-National College Health Assessment (NCHA) 1998, Spring 1999 and Fall 1999 Pilots, ACHA-NCHA Spring 2000 (ACHA, 2005). Findings indicated that validity and reliability analysis on the NCHA – I and NCHA –II surveys produce valid and reliable data (American College Health Association, 2004; 2008). Construct validity analyses showed similar correlation coefficients when compared with the NCWSV (Fisher, Cullen, & Turner, 2000), and measurement validity analyses indicated similar odds ratios, obtained from a multiple variable logistic regression analysis, when likened to the CAS (Wechsler et al., 2000). Findings revealed consistent standardized alphas and average interitem correlation coefficients when compared to the NCHRBS (Douglas, Collins, Warren et al., 1997). The ACHA-NCHA – II is regarded as an established and widely used assessment tool that provides fundamental insight into college student health behaviors. For example, many campus communities utilize data collected from the ACHA-NCHA – II to determine health priorities, monitor trends, allocate resources, and measure progress of health initiatives (ACHA, 2005).

A subset of questions from the original surveys was used in a secondary analysis for this study to describe if a relationship exists between PBS use and negative alcohol-related consequences as a result of alcohol consumption. The items of interest for this study were sample demographics and measures that assessed PBS use when consuming alcohol, negative alcohol-related consequences, and alcohol consumption. Therefore, students who did not drink alcohol were excluded from the sample. The subset is identified as the following:

Demographics. Demographics utilized in the analysis included four questions from the NCHA – II and IIb and were used to identify the sample population's characteristics. Demographics included age, gender (female 0, male 1), year in school (1st year undergraduate 1, 2nd year undergraduate 2, 3rd year undergraduate 3, 4th year undergraduate 4, 5th year undergraduate or more 5), enrollment status (full-time 1, part-time 2, other 3), and ethnicity (Black or African American, Hispanic or Latino/a, Asian or Pacific Islander, American Indian, Alaskan Native or Native Hawaiian, Biracial or Multiracial, and Other, scored as 0, White, scored as 1).

Alcohol consumption. Alcohol consumption was measured by two questions from the NCHA – II and IIb, which was utilized to describe the sample population's current state of alcohol use. The questions were as follows:

Within the last 30 days, on how many days did you use alcohol (beer, wine, liquor)? (Response options are: Never used, Have used, not in the last 30 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, Used daily, scored as 1, 2, 3, 4, 5, 6, 7, and 8 respectively);

Over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting? (Response options are: N/A, don't drink, None, 1 time, 2 times, 3 times, 4 times, 5 times, 6 times, 7 times, 8 times, 9 times, 10 or more times, scored as 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 respectively).

Protective behavioral strategy use. The NCHA assesses how often an individual utilized eleven PBS when consuming alcohol in the past 12 months. PBS use was measured by ten questions from the NCHA – II and IIb, which was utilized to describe

the sample population's current state of PBS use. Internal consistency of the PBS subscale was found to be highly reliable (10 items; $\alpha = .80$).

This study was most interested in strategies that are utilized when drinking alcohol; therefore, this study did not include the following survey item on the original NCHA-II and IIb because it is not associated with using alcohol when socializing: During the last 12 months, when you "partied/socialized", how often did you choose not to drink alcohol? The ten questions included in the current study were as follows:

During the last 12 months, when you "partied"/socialized, how often did you alternate non-alcoholic with alcoholic beverages? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you avoid drinking games? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you determine, in advance, not to exceed a set number of drinks? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you eat before and/or during drinking? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you have a friend let you know when you have had enough? (Response options are: N/A, don't

drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you keep track of how many drinks being consumed? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you pace drinks to one or fewer an hour? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you stay with the same group of friends the entire time drinking? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you stick with only one kind of alcohol when drinking? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively);

During the last 12 months, when you "partied"/socialized, how often did you use a designated driver? (Response options are: N/A, don't drink, Never, Rarely, Sometimes, Most of the time, Always, scored as 1, 2, 3, 4, 5, and 6 respectively).

Protective behavioral strategy subscales. PBS items were grouped into a three-factor subscale model stopping/limiting drinking (SLD), manner of drinking (MOD), and serious harm reduction (SHR). The stopping/limiting drinking (SLD) subscale was

comprised of the protective strategies: alternate non-alcoholic with alcoholic beverages, determine not to exceed a set number of drinks, have a friend let you know when you have had enough, and keep track of how many drinks being consumed. The manner of drinking (MOD) subscale consisted of the protective behaviors: avoid drinking games, eat before/during drinking, pace drinks to one or fewer an hour, and stick with only one kind of alcohol. The serious harm reduction (SHR) subscale contained the protective behaviors: stay with the same group of friends the entire time while drinking and use a designated driver.

Negative alcohol-related consequences. Negative alcohol-related consequences were measured by nine questions from the NCHA – II and IIb, which were used to describe the sample population's current experience of negative alcohol-related consequences. The questions were as follows:

Within the last 12 months, have you experienced any of the following as a consequence of your drinking?

Did something you later regretted (Response options are: No, scored as 2, Yes, scored as 3);

Forgot where you were or what you did (Response options are: No, scored as 2, Yes, scored as 3);

Got in trouble with the police (Response options are: No, scored as 2, Yes, scored as 3);

Had sex without giving consent (NCHA – II 2011), Someone had sex with me without my consent (NCHA – IIb 2013; 2015), (Response options are: No, scored as 2, Yes, scored as 3);

Had sex without getting consent (NCHA – II 2011), Had sex with someone without their consent (NCHA 2013; 2015), (Response options are: No, scored as 2, Yes, scored as 3);

Had unprotected sex (Response options are: No, scored as 2, Yes, scored as 3);

Physically injured yourself (Response options are: No, scored as 2, Yes, scored as 3);

Physically injured another person (Response options are: No, scored as 2, Yes, scored as 3);

Seriously considered suicide (Response options are: No, scored as 2, Yes, scored as 3).

Data Analysis

All surveys for the original studies were returned to the American College Health Association for electronic tabulation upon completion of each data collection period in 2011, 2013, and 2015. Following tabulation for each data collection period, the American College Health Association returned a reports package to the Health Education Resource Office at the participating university, which included a Reference Group Executive Summary.

This study utilized descriptive statistics, independent sample t-tests, and logistic regression analyses as analyzed by the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics were used to describe the mean responses of items on the survey that measure PBS use and the experience of negative alcohol-related consequences. A series of independent sample t-tests were conducted to determine if a difference exists between the means of males and females on individual PBS items.

Logistic regression analyses were utilized to determine the relationship between PBS and negative alcohol-related consequences, to determine the relationship between gender and negative alcohol-related consequences, and to ascertain the relationship between protective behavioral strategies, as organized as a three-factor subscale model, and negative alcohol-related consequences. Logistic regression allows for a relationship to be modeled between multiple independent variables and a single dependent variable where the independent variables are being used to predict the dependent variable.

Holm's Sequential Procedure (1979) was used as an alternative method for familywise error adjustment. Holm's Sequential Procedure allows for protection against Type I error, while keeping a higher level of statistical power. The first step in the procedure is to conduct the tests to obtain their *p*-values. Second, the *p*-values are ordered from the smallest *p*-value to the largest *p*-value. The test with the smallest *p*-value is tested first with a Bonferroni correction including all tests. Next, the second test is tested with a Bonferroni correction comprising one less test and continues for the remaining tests. Finally, the procedure ends when the first non-significant test is obtained or when all the tests have been conducted.

The independent variables in this study were PBS, stopping/limiting drinking (SLD) subscale, manner of drinking (MOD) subscale, serious harm reduction (SHR) subscale, alcohol consumption, and gender. The dependent variables were negative, alcohol-related consequences, and were dichotomous with a response of "yes" or "no" on survey items.

Research question one. To determine the relationship between PBS and negative alcohol-related consequences, a series of logistic regression analyses were conducted

simultaneously adjusting statistically for gender and alcohol consumption. Individual scores from the PBS subscale will be added to create a total PBS score. Individual scores from the negative alcohol-related consequences subscale were assessed by a yes or no, dichotomous format. To correct for familywise error rates for multiple tests, the Holm's Sequential Procedure was conducted.

Research question two. To determine the percent of college students who use PBS, as described by the NCHA – II and IIb, the percentages were calculated and a frequency distribution was used to illustrate the frequencies for each of the PBS items on the survey.

Research question three. To determine the percent of college students who have experienced negative alcohol-related consequences, as described by the NCHA – II and IIb, the percentages were calculated, and a frequency distribution was used to illustrate the frequencies for each of the negative alcohol-related consequences on the survey.

Research question four. To determine the relationship between gender and PBS, a series of independent sample t-tests were conducted for each PBS survey item. To correct for familywise error rates for multiple tests, the Holm's Sequential Procedure was conducted.

Research question five. To determine the relationship between gender and negative alcohol-related consequences, a series of logistic regression analyses were conducted, with gender as the predictor variable adjusting statistically for the effects of alcohol consumption. A Holm's sequential procedure was run to correct for familywise error rates for multiple tests.

Research question six. To determine the relationship between protective behavioral strategies, as organized as a three-factor subscale model, and negative alcohol-related consequences, a series of logistic regression analyses were conducted simultaneously adjusting statistically for gender and alcohol consumption. Individual scores from the negative alcohol-related consequences subscale were assessed by a yes or no, dichotomous format. Holm's Sequential Procedure was conducted to correct for familywise error rates.

Chapter IV

Results

Purpose

The purpose of this study was to describe the relationship, if any, between protective behavioral strategy use and the experience of negative alcohol-related consequences as a result of alcohol consumption at a Midwestern university as measured by the American College Health Associations' National College Health Assessment – II and IIb.

Data Management

The total number for the population of respondents to the NCHA-II and IIb was reduced to identify those that consume alcohol and the age group that best represents the college population. Respondents who reported that they did not drink alcohol (e.g., responded n/a, don't drink on alcohol consumption variables, PBS items, and/or negative alcohol-related consequence variables) or provided inconsistent responses (e.g., they indicated on separate items n/a, don't drink and that they had consumed alcohol in the past 30 days) were excluded from the sample because PBS, as defined in this study, apply to those who use alcohol. Respondents who were age 24 and older and who were not undergraduates were excluded from the sample in order to best represent the college population. Additional respondents who had 25% or more total missing data were removed from the sample.

Missing Data

There were no variables with 5% or more missing values in the original data sets for 2011 and 2015. In the original 2013 data set, more than 5% of missing values were

found for age (5.4%), gender (5.3%), year in school (5.0%), and enrollment status (5.4%). It appears some respondents did not complete all demographic items. Therefore, the valid (n) and valid (percent) for each demographic variable may not equal the final sample size.

Sample Demographics 2011

In Table 1, the demographic characteristics of the sample for assessment year 2011 are presented. The NCHA – II was completed by 1,050 participants. Respondents who indicated that they did not drink alcohol or provided inconsistent responses (n = 204) were removed from the sample. Respondents who reported an age greater or equal to 24 (n = 130) and were not undergraduates (n = 73) were also removed. Additional respondents who had 25% or more total missing data (n = 11) were removed, leaving a final sample size of 632. The mean age of the students was 20.52. The majority of the participants were female 63.5% (n = 389), non-Hispanic white 85.9% (n = 543), and enrolled full time, 96.6% (n = 593). Year in school analysis resulted in 17.0% (n = 105) as first year undergraduates, 22.7% (n = 140) were second year undergraduates, 34.4% (n = 212) were third year undergraduates, 20.3% (n = 125) were fourth year undergraduates, and 5.5% (n = 34) were fifth year undergraduates.

Table 1

Demographic Characteristics for the 2011 NCHA – II (N = 632)

Demographic Characteristics	*n*	%
Age (n = 611; M = 20.52)		
18	31	5.0
19	118	19.3
20	137	22.4
21	185	30.3
22	107	17.5
23	33	5.4
Gender (n = 613)		
Male	224	36.5
Female	389	63.5
Ethnicity (n = 632)		
White, non Hispanic	543	85.9
Black, non Hispanic	25	4.0
Hispanic or Latino/a	27	4.3
Asian or Pacific Islander	22	3.5
American Indian, Alaskan Native, or Native Hawaiian	13	2.1
Biracial or Multiracial	11	1.7
Other	5	.8
Year in School (n = 616)		
1st year undergraduate	107	17.1
2nd year undergraduate	141	22.5
3rd year undergraduate	218	34.8
4th year undergraduate	126	20.1
5th year undergraduate	35	5.6
Enrollment Status (n = 614)		
Full-Time	593	96.6
Part-Time	17	2.8
Other	4	.7

Sample Demographics 2013

In Table 2, the demographic characteristics of the sample for assessment year 2013 are presented. The NCHA – IIb was completed by 1,100 participants. Respondents who indicated that they did not drink alcohol or provided inconsistent responses (n = 249) were removed from the sample. Respondents who reported an age greater or equal to 24 (n = 108) and were not undergraduates (n = 58) were also removed. Additional respondents who had 25% or more total missing data (n = 11) were removed, leaving a

final sample size of 674. The mean age of the students was 20.21. The majority of the participants were female 59.8% (n = 380), non-Hispanic white 81.9% (n = 552), and enrolled full time, 96.2% (n = 609). Year in school analysis resulted in 27.0% (n = 172) as first year undergraduates, 26.8% (n = 171) were second year undergraduates, 24.5% (n = 156) were third year undergraduates, 16.2% (n = 103) were fourth year undergraduates, and 5.5% (n = 35) were fifth year undergraduates.

Table 2

Demographic Characteristics for the 2013 NCHA – IIb (N =674)

Demographic Characteristics	*n*	%
Age (n = 635; M = 20.21)		
18	68	10.7
19	149	23.5
20	152	23.9
21	151	23.8
22	80	12.6
23	35	5.5
Gender (n = 635)		
Male	255	40.2
Female	380	59.7
Ethnicity (674)		
White, non Hispanic	552	81.9
Black, non Hispanic	22	3.3
Hispanic or Latino/a	41	6.1
Asian or Pacific Islander	28	4.2
American Indian, Alaskan Native, or Native Hawaiian	14	2.1
Biracial or Multiracial	13	1.9
Other	6	.9
Year in School (n = 639)		
1st year undergraduate	172	27.0
2nd year undergraduate	171	26.8
3rd year undergraduate	156	24.5
4th year undergraduate	103	16.2
5th year undergraduate	35	5.5
Enrollment Status (n = 635)		
Full-Time	609	96.2
Part-Time	20	3.2
Other	4	.6

Sample Demographics 2015

In Table 3, the demographic characteristics of the sample for assessment year 2013 are presented. The NCHA – IIb was completed by 613 participants. Respondents who indicated that they did not drink alcohol or provided inconsistent responses (n = 152) were removed from the sample. Respondents who reported an age greater or equal to 24 (n = 135) and were not undergraduates (n = 37) were also removed. Additional respondents who had 25% or more total missing data (n = 1) were removed, leaving a final sample size of 288. The mean age of the students was 20.22. The majority of the participants were female 62.7% (n = 180), non-Hispanic white 89.2% (n = 257), and enrolled full time, 97.2% (n = 279). Year in school analysis resulted in 26.5% (n = 76) as first year undergraduates, 24.0% (n = 69) were second year undergraduates, 21.3% (n = 61) were third year undergraduates, 23.0% (n = 66) were fourth year undergraduates, and 5.2% (n = 15) were fifth year undergraduates.

Table 3

Demographic Characteristics for the 2015 NCHA – IIb (N = 288)

Demographic Characteristics	*n*	%
Age (n = 287; M = 20.22)		
18	27	9.4
19	72	25.1
20	69	24.0
21	63	22.0
22	41	14.3
23	15	5.2
Gender (n = 287)		
Male	107	37.3
Female	180	62.7
Ethnicity (n = 288)		
White, non-Hispanic	257	89.2
Black, non-Hispanic	12	4.2
Hispanic or Latino/a	17	5.9
Asian or Pacific Islander	9	3.1
American Indian, Alaskan Native, or Native Hawaiian	9	3.1
Biracial or Multiracial	9	3.1
Other	1	.3
Year in School (n = 287)		
1st year undergraduate	76	26.5
2nd year undergraduate	69	24.0
3rd year undergraduate	61	21.3
4th year undergraduate	66	23.0
5th year undergraduate	15	5.2
Enrollment Status (n = 287)		
Full-Time	279	97.2
Part-Time	8	2.8

Alcohol Consumption 2011

Descriptive statistics were analyzed to describe the current state of alcohol use among the sample population. Of the sample, 22.3% drank alcohol on three to five days of the last month, 27.1% on six to nine days of the last month, and 22.8% on ten to nineteen days of the last month (M = 4.63; SD =1.36). This suggests that participants might consume alcohol, on average, three to five days a month. See Table 4 for a description of alcohol consumption within the last 30 days.

Table 4

Number of Days Students Reported Consuming Alcohol Within the Last Month in 2011 (N = 623)

Number of days	*n*	%
Have used, not in the last 30 days	39	6.3
1-2 days	99	15.9
3-5 days	139	22.3
6-9 days	169	27.1
10-19 days	142	22.8
20-29 days	23	3.7
Used Daily	12	1.9

Note: "Within the last 30 days, on how many days did you use alcohol (beer, wine, liquor)?" Respondents who reported *not applicable/don't drink* were excluded.

On average, respondents reported consuming five or more alcoholic beverages at a sitting on one or two occasions within the last two weeks prior to the survey (M = 3.83; SD = 2.08). Alcohol consumption over the last two weeks are presented in Table 5.

Table 5

Number of Times Students Reported Consuming Five or More Drinks of Alcohol at a Sitting Over the Last Two Weeks in 2011 (N = 629)

Number of Times	*n*	%
None	217	34.5
1 time	131	20.8
2 times	107	17.0
3 times	58	9.2
4 times	42	6.7
5 times	29	4.6
6 times	23	3.7
7 times	10	1.6
8 times	3	.5
9 times	4	.6
10 or more times	5	.8

Note: "Over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting?" Respondents who reported *not applicable/don't drink* were excluded.

Alcohol Consumption 2013

Descriptive statistics were analyzed to describe the current state of alcohol use among the sample population. Results indicated that 20.7% of the sample drank alcohol on three to five days of the last month, 23.3% on six to nine days of the last month, and

24.6% on ten to nineteen days of the last month (M = 4.64; SD =1.43). Results indicate that participants might drink alcohol, on average, three to five days a month. See Table 6 for a description of alcohol consumption within the last 30 days.

Table 6

Number of Days Students Reported Consuming Alcohol Within the Last Month in 2013 (N = 666)

Number of Days	*n*	*%*
Have used, not in the last 30 days	48	7.2
1-2 days	114	17.1
3-5 days	138	20.7
6-9 days	155	23.3
10-19 days	164	24.6
20-29 days	34	5.1
Used daily	13	2.0

Note: "Within the last 30 days, on how many days did you use alcohol (beer, wine, liquor)?" Respondents who reported *not applicable/don't drink* were excluded.

On average, respondents reported consuming five or more alcoholic beverages at a sitting on one or two occasions within the last two weeks prior to the survey (M = 3.80; SD = 1.97). Alcohol consumption over the last two weeks are presented in Table 7.

Table 7

Number of Times Students Reported Consuming Five or More Drinks of Alcohol at a Sitting Over the Last Two Weeks in 2013 (N = 670)

Number of times	*n*	%
None	221	33.0
1 time	155	23.1
2 times	101	15.1
3 times	65	9.7
4 times	60	9.0
5 times	31	4.6
6 times	22	3.3
7 times	5	.7
8 times	4	.6
9 times	1	.1
10 or more times	5	.7

Note: "Over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting?" Respondents who reported *not applicable/don't drink* were excluded.

Alcohol Consumption 2015

Descriptive statistics were analyzed to describe the current state of alcohol use among the sample population. Of the sample, 21.7% consumed alcohol on three to five days of the last month, 26.2% on six to nine days of the last month, and 17.8% on ten to nineteen days of the last month (M = 4.33; SD =1.35). Results indicate that participants might consume alcohol, on average, three to five days a month. See Table 8 for a description of alcohol consumption within the last 30 days.

Table 8

Number of Days Students Reported Consuming Alcohol Within the Last Month in 2015 (N = 286)

Number of days	*n*	%
Have used, but not in last 30 days	26	9.1
1-2 days	62	21.7
3-5 days	62	21.7
6-9 days	75	26.2
10-19 days	51	17.8
20-29 days	8	2.8
Used Daily	2	.7

Note: "Within the last 30 days, on how many days did you use alcohol (beer, wine, liquor)?" Respondents who reported *not applicable/don't drink* were excluded.

Respondents, on average, reported consuming five or more alcoholic beverages at a sitting on one occasion within the last two weeks prior to the survey (M = 3.32; SD = 1.84). Alcohol consumption over the last two weeks are presented in Table 9.

Table 9

Number of Times Students Reported Consuming Five or More Drinks of Alcohol at a Sitting in 2015 (N = 288)

Number of times	*n*	%
None	135	46.9
1 time	66	22.9
2 times	28	9.7
3 times	26	9.0
4 times	13	4.5
5 times	4	1.4
6 times	9	3.1
7 times	2	.7
8 times	4	1.4
9 times	1	.3

Note: "Over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting?" Respondents who reported *not applicable/don't drink* were excluded. No responses were reported for 10 or more times.

Research Question One

To determine the relationship between PBS and negative alcohol-related consequences, a series of logistic regression analyses were conducted simultaneously adjusting statistically for gender and alcohol consumption. The logistic regression is purposed to predict the probability that an observation lands into one of two categories of the dichotomous dependent variable, such as "yes" or "no" categories, based on one or more independent variables (Cox, 1958). In the series of logistic regression models, each negative alcohol-related consequence was run as the dependent variable with gender, alcohol consumption variables (last 30 days and over the last two weeks), and total PBS score as the independent variables.

Holm's Sequential Procedure (1979) was conducted to correct for familywise error rates. This procedure provides an alternative method for familywise error adjustment that safeguards against committing Type I error, while preserving a higher level of statistical power.

Results 2011

In Table 10, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS total scores in 2011 model fit and R^2 are presented. The logistic regression model for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except for "had sex without getting consent" ($p = .071$) and "seriously considered suicide" ($p = .589$). To correct for familywise error rates for multiple tests, Holm's Sequential Procedure was conducted. Results of the correction retained non-significance for "had sex without getting consent" and "seriously considered suicide". The models explained 8.7% to 29.8% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 10

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS Total Scores in 2011 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	*df*	Sig.	R^2
Did something you later regretted	91.846	4	.000	.190
Forgot where you were/what you did	151.092	4	.000	.298
Got in trouble with police	17.245	4	.002	.087
Had sex without giving consent	20.851	4	.000	.204
Had sex without getting consent	8.644	4	.071	.186
Had unprotected sex	84.051	4	.000	.186
Physically injured yourself	83.177	4	.000	.202
Physically injured another person	22.674	4	.000	.124
Seriously considered suicide	2.818	4	.589	.039

The results for the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS total scores in 2011 are shown in Table 11. After simultaneously adjusting statistically for gender and alcohol consumption, PBS total score was related to "did something you later regretted" ($p < .0005$), "forgot where you were/what you did" ($p < .0005$), "got in trouble with police ($p = .006$), "had unprotected sex ($p < .0005$), "physically injured yourself" ($p < .0005$), and "physically injured another

person" (p = .002). Lower PBS scores were associated with an increased likelihood of experiencing the negative alcohol-related consequences. This suggests that students who utilize fewer PBS are more likely to experience the negative consequences "did something you later regretted", "forgot where you were/what you did", "got in trouble with police", "had unprotected sex, "physically injured yourself", and "physically injured another person" as a result of alcohol consumption.

Table 11

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS Total Scores in 2011

Consequences	*B*	SE	Wald	*df*	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratio Lower	Upper
Did something you later regretted	-.089	.015	35.014	1	.000	.915	.888	.942
Forgot where you were/what you did	-.094	.016	33.977	1	.000	.911	.882	.940
Got in trouble with police	-.089	.032	7.641	1	.006	.914	.858	.974
Had sex without giving consent	-.056	.055	1.030	1	.310	.945	.848	1.054
Had sex without getting consent	.130	.068	3.655	1	.056	1.139	.997	1.301
Had unprotected sex	-.069	.016	17.668	1	.000	.933	.903	.964
Physically injured yourself	-.075	.019	15.925	1	.000	.928	.894	.963
Physically injured another person	-.106	.035	9.322	1	.002	.900	.841	.963
Seriously considered suicide	-.074	.060	1.526	1	.217	.929	.826	1.044

Note: Gender, alcohol consumption variables, and PBS total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher PBS scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower PBS scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval.

Results 2013

In Table 12, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS total scores in 2013 model fit and R^2 are presented. The logistic regression model for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except "had sex with someone without their consent" ($p = .698$) and "seriously considered suicide" ($p = .145$). The Holm's Sequential Procedure was conducted, and results indicated that "had sex with someone without their consent" and "seriously considered suicide" remained nonsignificant. The models explained 8.3% to 27.2% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 12

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS Total Scores in 2013 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	*df*	*p*	R^2
Did something you later regretted	84.958	4	.000	.171
Forgot where you were/what you did	140.192	4	.000	.270
Got in trouble with police	44.182	4	.000	.174
Someone had sex with me w/o my consent	13.555	4	.009	.097
Had sex with someone w/o their consent	2.206	4	.698	.083
Had unprotected sex	61.314	4	.000	.132
Physically injured yourself	87.525	4	.000	.199
Physically injured another person	53.021	4	.000	.272
Seriously considered suicide	6.839	4	.145	.085

The logistic regression predicting likelihood of negative alcohol-related consequences based on PBS total scores in 2013 are shown in Table 13. After simultaneously adjusting statistically for gender and alcohol consumption, the PBS total score was associated with the negative consequences "did something you later regretted ($p = .001$), "forgot where you were/what you did ($p < .0005$), "got in trouble with police

(p = .011), "someone had sex with me without my consent (p = .001), and "had unprotected sex" (p = .003). Lower PBS scores were associated with an increased likelihood of experiencing "did something you later regretted", "forgot where you were/what you did", "got in trouble with police", "someone had sex with me without my consent", and "had unprotected sex".

Table 13

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS Total Scores in 2013

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios	
							Lower	Upper
Did something you later regretted	-.044	.014	10.473	1	.001	.956	.931	.983
Forgot where you were/what you did	-.061	.015	17.336	1	.000	.941	.915	.968
Got in trouble with police	-.068	.027	6.407	1	.011	.934	.886	.985
Someone had sex with me w/o my consent	-.128	.040	10.346	1	.001	.880	.814	.951
Had sex with someone w/o their consent	-.039	.105	.140	1	.708	.961	.783	1.181
Had unprotected sex	-.043	.015	8.551	1	.003	.958	.931	.986
Physically injured yourself	-.011	.016	.428	1	.513	.989	.958	1.022
Physically injured. another person	-.028	.035	.646	1	.422	.972	.908	1.041
Seriously considered suicide	.134	.058	5.455	1	.020	1.144	1.022	1.281

Note: Gender, alcohol consumption variables, and PBS total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher PBS scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower PBS scores are associated with greater likelihood of experiencing the negative consequence. Conversely, Exp(B) values above 1 indicate that higher PBS scores are associated with less likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval. "Seriously considered suicide" was found nonsignificant in the model.

Results 2015

In Table 14, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS total scores in 2015 model fit and R^2 are shown. The logistic regression model for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except "someone had sex with me without my consent" ($p = .068$) and "seriously considered suicide" ($p = .162$). "Had sex with someone without their consent" was not included in the model because there were no responses in the "yes" category, indicating the consequence had not been experienced. A Holm's Sequential Procedure was conducted to correct for familywise error rates and "someone had sex with me without my consent" and "seriously considered suicide" remained nonsignificant. As a result of the correction, "got in trouble with police" and "physically injured another person" were also found to be nonsignificant. The models explained 8.1% to 38.0% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 14

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS Total Scores in 2015 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	40.907	4	.000	.179
Forgot where you were/what you did	93.923	4	.000	.380
Got in trouble with police	12.298	4	.015	.173
Someone had sex with me without my consent	8.748	4	.068	.187
Had unprotected sex	58.965	4	.000	.274
Physically injured self	61.751	4	.000	.327
Physically injured another person	11.908	4	.018	.298
Seriously considered suicide	6.540	4	.162	.081

Note: "Had sex with someone without their consent" was not included in the model because there were no responses in the "yes" category.

The results for the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS total scores in 2015 are shown in Table 15. After simultaneously adjusting statistically for gender and alcohol consumption, the PBS total score was related to the negative consequences "did something you later regretted" (p = .003), "forgot where you were/what you did" (p < .0005), "had unprotected sex" (p < .0005), and "physically injured self" (p < .0005). Less frequent PBS use was related to an increased likelihood of experiencing "did something you later regretted", forgot where you were/what you did", "had unprotected sex", and "physically injured self" as a result of alcohol consumption.

Table 15

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS Total Scores in 2015

	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios	
Consequences							Lower	Upper
Did something you later regretted	-.062	.021	1.031	1	.003	.940	.903	.940
Forgot where you were/what you did	-.142	.025	31.274	1	.000	.867	.825	.912
Got in trouble with police	-.155	.067	5.332	1	.021	.856	.750	.977
Someone had sex with me w/o consent	-.145	.077	3.545	1	.060	.865	.744	1.060
Had unprotected sex	-.092	.026	12.816	1	.000	.912	.867	.959
Physically injured yourself	-.146	.034	19.006	1	.000	.864	.809	.923
Physically injured another person	-.234	.127	3.397	1	.065	.791	.617	1.015
Seriously considered suicide	-.066	.052	1.655	1	.198	.936	.846	1.035

Note: Gender, alcohol consumption variables, and PBS total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher PBS scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower PBS scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval. "Got in trouble with police" and "physically injured another person" were found not significant in the model as a result of the Holm's Sequential Procedure. "Had sex with someone without their consent" is not shown because there were no responses indicating experiencing this consequence.

Research Question Two

To determine the percent of college students who use PBS, as described by the NCHA – II and IIb, the percentages were calculated and summarized for each PBS item. Frequency distributions for each of the PBS items are presented in Table 16 for 2011, Table 17 for 2013, and Table 18 for 2015.

Results 2011

Results are presented in Table 16, and summarized as follows:

a. 45.9% of students sometimes, most of the time, and always alternate non-alcoholic with alcoholic beverages.
b. 40.7% of students sometimes, most of the time, and always avoid drinking games.
c. 54.3% of students sometimes, most of the time, and always determine, in advance, not to exceed a set number of drinks.
d. 93.6% of students sometimes, most of the time, and always eat before and/or during drinking.
e. 51.5% of students sometimes, most of the time, and always have a friend let you know when you have had enough.
f. 72.3% of students sometimes, most of the time, and always keep track of how many drinks being consumed.
g. 42.0% of students sometimes, most of the time, and always pace drinks to one or fewer an hour.
h. 92.0% of students sometimes, most of the time, and always stay with the same group of friends the entire time drinking.

i. 71.9% of students sometimes, most of the time, and always stick with only one kind of alcohol when drinking.

j. 93.5% of students sometimes, most of the time, and always use a designated driver.

Table 16

Frequency of PBS Use as Reported on the 2011 NCHA – II (N = 632)

Behavior	n	%
Alternate non-alcoholic with alcoholic beverages (n = 629)		
Never	166	26.4
Rarely	174	27.7
Sometimes	166	26.4
Most of the time	87	13.8
Always	36	5.7
Avoid drinking games (n = 630)		
Never	173	27.5
Rarely	201	31.9
Sometimes	134	21.3
Most of the time	68	10.8
Always	54	8.6
Determine not to exceed a set number of drinks (n = 631)		
Never	139	22.0
Rarely	149	23.6
Sometimes	170	26.9
Most of the time	126	20.0
Always	47	7.4
Eat before and/or during drinking (n = 632)		
Never	15	2.4
Rarely	25	4.0
Sometimes	126	19.9
Most of the time	251	39.7
Always	215	34.0
Have a friend let know when had enough (n = 630)		
Never	170	27.0
Rarely	136	21.6
Sometimes	143	22.7
Most of the time	93	14.8
Always	88	14.0
Keep track of how many drinks (n = 631)		
Never	64	10.1
Rarely	111	17.6
Sometimes	143	22.7

Most of the time	155	24.6
Always	158	25.0
Pace drinks to one or less per hour (n = 630)		
Never	177	28.1
Rarely	188	29.8
Sometimes	145	23.0
Most of the time	80	12.7
Always	40	6.3
Stay with same group of friends (n = 627)		
Never	14	2.2
Rarely	36	5.7
Sometimes	91	14.5
Most of the time	262	41.8
Always	224	35.7
Stick with only one kind of alcohol (n = 632)		
Never	48	7.6
Rarely	130	20.6
Sometimes	214	33.9
Most of the time	189	29.9
Always	51	8.1
Use a designated driver (n = 631)		
Never	12	1.9
Rarely	29	4.6
Sometimes	92	14.6
Most of the time	187	29.6
Always	311	49.3

Results 2013

Results are presented in Table 17, and summarized as follows:

a. 43.7% of students sometimes, most of the time, and always alternate non-alcoholic with alcoholic beverages.

b. 38.8% of students sometimes, most of the time, and always avoid drinking games.

c. 49.9% of students sometimes, most of the time, and always determine, in advance, not to exceed a set number of drinks.

d. 93.1% of students sometimes, most of the time, and always eat before and/or during drinking.

e. 53.6% of students sometimes, most of the time, and always have a friend let you know when you have had enough.

f. 69.1% of students sometimes, most of the time, and always keep track of how many drinks being consumed.

g. 37.9% of students sometimes, most of the time, and always pace drinks to one or fewer an hour.

h. 91.2% of students sometimes, most of the time, and always stay with the same group of friends the entire time drinking.

i. 66.5% of students sometimes, most of the time, and always stick with only one kind of alcohol when drinking.

j. 93.1% of students sometimes, most of the time, and always use a designated driver.

Table 17

Frequency of PBS Use as Reported on the 2013 NCHA – IIb (N = 674)

PBS	*n*	%
Alternate non-alcoholic with alcoholic beverages (n = 673)		
Never	179	26.6
Rarely	200	29.7
Sometimes	161	23.9
Most of the time	84	12.5
Always	49	7.3
Avoid drinking games (n = 673)		
Never	226	33.6
Rarely	186	27.6
Sometimes	144	21.4
Most of the time	68	10.1
Always	49	7.3
Determine not to exceed a set number of drinks (n = 669)		
Never	193	28.8
Rarely	142	21.2
Sometimes	167	25.0
Most of the time	110	16.4
Always	57	8.5

Eat before and/or during drinking (n = 673)		
Never	15	2.2
Rarely	31	4.6
Sometimes	122	18.1
Most of the time	256	38.0
Always	249	37.0
Have a friend let know when had enough (n = 672)		
Never	178	26.5
Rarely	134	19.9
Sometimes	151	22.5
Most of the time	114	17.0
Always	95	14.1
Keep track of how many drinks (n = 674)		
Never	97	14.4
Rarely	112	16.6
Sometimes	146	21.7
Most of the time	152	22.6
Always	167	24.8
Pace drinks to one or less per hour (n = 672)		
Never	215	32.0
Rarely	202	30.1
Sometimes	141	21.0
Most of the time	70	10.4
Always	44	6.5
Stay with same group of friends (n = 672)		
Never	28	4.2
Rarely	31	4.6
Sometimes	88	13.1
Most of the time	254	37.8
Always	271	40.3
Stick with only one kind of alcohol (n = 672)		
Never	79	11.8
Rarely	146	21.7
Sometimes	230	34.2
Most of the time	157	23.4
Always	60	8.9
Use a designated driver (n = 672)		
Never	19	2.8
Rarely	27	4.0
Sometimes	72	10.7
Most of the time	166	24.7
Always	388	57.7

Results 2015

Results are shown in Table 18, and summarized as follows:

a. 57.9% of students sometimes, most of the time, and always alternate non-alcoholic with alcoholic beverages.
b. 47.9% of students sometimes, most of the time, and always avoid drinking games.
c. 57.8% of students sometimes, most of the time, and always determine, in advance, not to exceed a set number of drinks.
d. 97.8% of students sometimes, most of the time, and always eat before and/or during drinking.
e. 62.4% of students sometimes, most of the time, and always have a friend let you know when you have had enough.
f. 83.6% of students sometimes, most of the time, and always keep track of how many drinks being consumed.
g. 50.5% of students sometimes, most of the time, and always pace drinks to one or fewer an hour.
h. 99.3% of students sometimes, most of the time, and always stay with the same group of friends the entire time drinking.
i. 80.5% of students sometimes, most of the time, and always stick with only one kind of alcohol when drinking.
j. 95.1% of students sometimes, most of the time, and always use a designated driver.

Table 18

Frequency of PBS Use as Reported on the 2015 NCHA – IIb (N = 288)

PBS	*n*	%
Alternate non-alcoholic with alcoholic beverages (n = 288)		
Never	59	20.5
Rarely	62	21.5
Sometimes	79	27.4
Most of the time	66	22.9
Always	22	7.6
Avoid drinking games (n = 288)		
Never	72	25.0
Rarely	78	27.1
Sometimes	62	21.5
Most of the time	41	14.2
Always	35	12.2
Determine not to exceed a set number of drinks (n = 287)		
Never	74	25.8
Rarely	47	16.4
Sometimes	68	23.7
Most of the time	52	18.1
Always	46	16.0
Eat before and/or during drinking (n = 287)		
Never	1	.3
Rarely	5	1.7
Sometimes	34	11.8
Most of the time	135	47.0
Always	112	39.0
Have a friend let know when had enough (n = 287)		
Never	55	19.2
Rarely	53	18.5
Sometimes	57	19.9
Most of the time	62	21.6
Always	60	20.9
Keep track of how many drinks (n = 287)		
Never	18	6.3
Rarely	29	10.1
Sometimes	58	20.2
Most of the time	71	24.7
Always	111	38.7
Pace drinks to one or less per hour (n = 285)		
Never	77	27.0
Rarely	64	22.5
Sometimes	79	27.7
Most of the time	42	14.7
Always	23	8.1

Stay with same group of friends (n = 287)		
Never	1	.3
Rarely	1	.3
Sometimes	29	10.1
Most of the time	106	36.9
Always	150	52.3
Stick with only one kind of alcohol (n = 287)		
Never	11	3.8
Rarely	45	15.7
Sometimes	117	40.8
Most of the time	89	31.0
Always	25	8.7
Use a designated driver (n = 287)		
Never	6	2.1
Rarely	8	2.8
Sometimes	23	8.0
Most of the time	44	15.3
Always	206	71.8

Research Question Three

To determine the percent of college students who have experienced negative alcohol-related consequences, as described by the NCHA – II and IIb, the percentages were calculated and summarized for each of the negative alcohol-related consequences. Frequency distributions for each of the consequences are presented in Table 19 for 2011, Table 20 for 2013, and Table 21 for 2015.

Results 2011

Results are presented in Table 19, and summarized within the last 12 months as:

a. 48.4% of students did something they later regretted.

b. 45.7% of students forgot where they were or what they did.

c. 4.9% of students got in trouble with the police.

d. 1.9% of students had sex without giving consent.

e. 0.8% of students had sex without getting consent.

f. 29.3% of students had unprotected sex.

g. 21.0% of students physically injured themselves.

h. 4.4% of students physically injured another person.

i. 1.3% of students seriously considered suicide.

Table 19

Frequency of Negative Alcohol-Related Consequences as Reported on the 2011 NCHA – II (N = 632)

Negative Alcohol-Related Consequence	*n*	%
Did something you later regretted (n = 630)		
No	325	51.6
Yes	305	48.4
Forgot where you were and what you did (n = 630)		
No	342	54.3
Yes	288	45.7
Got in trouble with police (n = 630)		
No	599	95.1
Yes	31	4.9
Had sex without giving consent (n = 631)		
No	619	98.1
Yes	12	1.9
Had sex without getting consent (n = 632)		
No	627	99.2
Yes	5	.8
Had unprotected sex (n = 632)		
No	447	70.7
Yes	185	29.3
Physically injured yourself (n = 632)		
No	499	79.0
Yes	133	21.0
Physically injured another person (n = 632)		
No	604	95.6
Yes	28	4.4
Seriously considered suicide (n = 631)		
No	623	98.7
Yes	8	1.3

Results 2013

Results are shown in Table 20, and summarized within the last 12 months as:

a. 51.0% of students did something they later regretted.

b. 52.0% of students forgot where they were or what they did.

c. 7.9% of students got in trouble with the police.

d. 2.7% of students reported someone had sex with them without their consent.

e. 0.3% of students reported they had sex with someone without their consent.

f. 29.8% of students had unprotected sex.

g. 23.4% of students physically injured themselves.

h. 4.6% of students physically injured another person.

i. 1.2% of students seriously considered suicide.

Table 20

Frequency of Negative Alcohol-Related Consequences as Reported on the 2013 NCHA – IIb (N = 674)

Negative Alcohol-Related Consequence	*n*	%
Did something you later regretted (n = 673)		
No	330	49.0
Yes	343	51.0
Forgot where you were and what you did (n = 673)		
No	323	48.0
Yes	350	52.0
Got in trouble with police (n = 673)		
No	620	92.1
Yes	53	7.9
Someone had sex with me without my consent (n = 674)		
No	656	97.3
Yes	18	2.7
Had sex with someone without their consent (n = 674)		
No	672	99.7
Yes	2	.3
Had unprotected sex (n = 674)		
No	473	70.2
Yes	201	29.8
Physically injured yourself (n = 674)		
No	516	76.6
Yes	158	23.4
Physically injured another person (n = 673)		
No	642	95.4
Yes	31	4.6
Seriously considered suicide (n = 673)		
No	665	98.8
Yes	8	1.2

Results 2015

Results are presented in Table 21, and summarized within the last 12 months as:

a. 43.1% of students did something they later regretted.

b. 39.2% of students forgot where they were or what they did.

c. 3.1% of students got in trouble with the police.

d. 1.7% of students reported someone had sex with them without their consent.

e. 0.0% of students reported they had sex with someone without their consent.

f. 26.0% of students had unprotected sex.

g. 16.7% of students physically injured themselves.

h. 1.4% of students physically injured another person.

i. 3.8% of students seriously considered suicide.

Table 21

Frequency of Negative Alcohol-Related Consequences as Reported on the 2015 NCHA – IIb (N = 288)

Negative Alcohol-Related Consequence	*n*	%
Did something you later regretted (n = 288)		
No	164	56.9
Yes	124	43.1
Forgot where you were and what you did (n = 288)		
No	175	60.8
Yes	113	39.2
Got in trouble with police (n = 287)		
No	278	96.9
Yes	9	3.1
Someone had sex with me without my consent (n = 288)		
No	283	98.3
Yes	5	1.7
Had sex with someone without their consent (n = 288)		
No	288	100.0
Yes	0	.0
Had unprotected sex (n = 288)		
No	213	74.0
Yes	75	26.0
Physically injured yourself (n =287)		
No	239	83.3
Yes	48	16.7
Physically injured another person (n = 288)		
No	284	98.6
Yes	4	1.4
Seriously considered suicide (n = 288)		
No	277	96.2
Yes	11	3.8

Research Question Four

To determine the relationship between gender and PBS, a series of independent samples t-tests were conducted for each PBS survey item. The independent samples t-tests compared the means between males and females to determine if there was a statistically significant difference in PBS use. The Holm's Sequential Procedure was conducted to correct for familywise error rates for multiple tests.

Results 2011

Descriptive statistics are presented by means and standard deviations in Table 22. Data are mean ± standard deviation, unless otherwise stated. A series of independent-samples t-tests were conducted to determine if there were significant differences in PBS use between females and males. Results indicated that mean female scores were higher than mean male scores for all PBS items.

Table 22

Means and Standard Deviations for 2011

PBS and Gender	Mean	SD
Alternate nonalcoholic with alcoholic beverages		
Female (N = 387)	3.53	1.21
Male (N = 223)	3.32	1.11
Avoid drinking games		
Female (N = 387)	3.53	1.24
Male (N = 224)	3.25	1.22
Determine not to exceed a set number of drinks		
Female (N = 388)	3.75	1.24
Male (N = 224)	3.54	1.18
Eat before/during drinking		
Female (N = 389)	5.14	.88
Male (N = 224)	4.76	1.00
Have a friend let you know when you have had enough		
Female (N = 388)	3.95	1.41
Male (N = 223)	3.22	1.18
Keep track of how many drinks being consumed		
Female (N = 389)	4.57	1.26
Male (N = 223)	4.07	1.32
Pace drinks to one or less per hour		
Female (N = 388)	3.55	1.24
Male (N = 223)	3.16	1.10
Stay with the same group of friends while drinking		
Female (N = 387)	5.25	.80
Male (N = 221)	4.69	1.07
Stick with only one kind of alcohol		
Female (N = 389)	4.19	1.08
Male (N = 224)	4.00	1.00
Use a designated driver		
Female (N = 388)	5.40	.83
Male (N = 224)	4.89	1.07

There was homogeneity of variances, as assessed by Levene's test for equality of variances for "alternate non-alcoholic with alcoholic beverages" (p = .161), "avoid drinking games" (p = .483), "determine not to exceed a set number of drinks" (p = .352), and "keep track of how many drinks being consumed" (p = .943). Results where the

assumption of homogeneity of variances were met are summarized as follows with statistical differences in:

a. the mean PBS score "alternate non-alcoholic and alcoholic beverages" between females and males, with females scoring higher than males, 0.20 (95% CI, 0.01 to 0.40), $t(608) = 2.073$, $p = .039$, $d = .18$. Cohen's effect size value ($d = .18$) suggested small practical significance.
b. the mean PBS score "avoid drinking games" between females and males, with females scoring higher than males, 0.28 (95% CI, 0.07 to 0.48), $t(609) = 2.682$, $p = .008$, $d = .23$. Cohen's effect size value ($d = .23$) suggested small practical significance.
c. the mean PBS score "determine not to exceed a set number of drinks" between females and males, with females scoring higher than males, 0.22 (95% CI, 0.02 to 0.42), $t(610) = 2.118$, $p = .035$, $d = .17$. Cohen's effect size value ($d = .17$) suggested small practical significance.
d. the mean PBS score "keep track of how many drinks being consumed" between females and males, with females scoring higher than males, 0.50 (95% CI, 0.29 to 0.71), $t(610) = 4.621$, $p < .001$, $d = .39$. Cohen's effect size value ($d = .39$) suggested small practical significance.

The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances for "eat before/during drinking" ($p = .020$), "have a friend let you know when you have had enough" ($p < .001$), "pace drinks to one or less per hour" ($p = .001$), "stay with the same group of friends while drinking" ($p < .001$), "stick with only one kind of alcohol" ($p = .004$), and "use a designated driver" ($p = .004$).

Welch t-tests were run to determine if there were differences in PBS scores between females and males due to the assumption of homogeneity of variances being violated. Results are summarized as follows with statistical differences in:

a. the mean PBS score "eat before/during drinking" between females and males, with females scoring higher than males, 0.38 (95% CI, 0.22 to 0.54), $t(418.858) = 4.688$, $p < .001$.
b. the mean PBS score "have a friend let you know when you've had enough" between females and males, with females scoring higher than males, 0.73 (95% CI, 0.52 to 0.94), $t(532.429) = 6.855$, $p < .001$.
c. the mean PBS score "pace drinks to one or less per hour" between females and males, with females scoring higher than males, 0.39 (95% CI, 0.20 to 0.58), $t(507.462) = 4.048$, $p < .001$.
d. in the mean PBS score "stay with the same group of friends while drinking" between females and males, with females scoring higher than males, 0.57 (95% CI, 0.40 to 0.73), $t(363.262) = 6.837$, $p < .001$.
e. the mean PBS score "stick with only one kind of alcohol" between females and males, with females scoring higher than males, 0.20 (95% CI, .03 to .37), $t(495.702) = 2.282$, $p = .023$.
f. the mean PBS score "use a designated driver" between females and males, with females scoring higher than males, 0.52 (95% CI, 0.35 to 0.68), $t(379.630) = 6.228$, $p < .001$.

The Holm's Sequential Procedure was conducted to correct for familywise error rates. Based on this correction, there was a significant difference in the mean PBS scores

“avoid drinking games”, “keep track of how many drinks being consumed”, “eat before/during drinking”, “have a friend let you know when you have had enough”, “pace drinks to one or less per hour”, “stay with the same group of friends while drinking”, and “use a designated driver” between females and males. These results suggest that females utilize more PBS than males when consuming alcohol.

Results 2013

Descriptive statistics are shown by means and standard deviations in Table 23. Data are mean ± standard deviation, unless otherwise stated. A series of independent samples t-tests were conducted to determine if there were significant differences in PBS use between females and males. Results indicated that mean female scores were higher than mean male scores for all PBS items.

Table 23

PBS and Gender Descriptive Statistics in 2013

PBS and Gender	Mean	SD
Alternate nonalcoholic with alcoholic beverages		
Female (N = 380)	3.56	1.21
Male (N = 256)	3.28	1.20
Avoid drinking games		
Female (N = 380)	3.44	1.24
Male (N = 256)	3.03	1.15
Determine not to exceed a set number of drinks		
Female (N = 379)	3.72	1.27
Male (N = 253)	3.25	1.28
Eat before/during drinking		
Female (N = 380)	5.13	.92
Male (N = 256)	4.88	1.03
Have a friend let you know when you have had enough		
Female (N = 380)	4.01	1.39
Male (N = 255)	3.25	1.24
Keep track of how many drinks being consumed		
Female (N = 380)	4.44	1.30
Male (N = 257)	3.95	1.42
Pace drinks to one or less per hour		
Female (N = 380)	3.53	1.24
Male (N = 256)	2.93	1.05
Stay with the same group of friends while drinking		
Female (N = 379)	5.27	.93
Male (N = 256)	4.70	1.14
Stick with only one kind of alcohol		
Female (N = 379)	4.06	1.14
Male (N = 256)	3.76	1.10
Use a designated driver		
Female (N = 380)	5.46	.85
Male (N = 255)	5.10	1.14

There was homogeneity of variances, as assessed by Levene's test for equality of variances for "alternate non-alcoholic with alcoholic beverages" (p = .726), "determine not to exceed a set number of drinks" (p = .713), "eat before/during drinking" (p = .110), "have a friend let you know when you have had enough" (p = .099), "keep track of how many drinks being consumed" (p = .168), and "stick with the only one kind of alcohol"

(p = .611). Results where the assumption of homogeneity of variances were met are summarized as follows with statistical differences in:

a. the mean PBS score "alternate non-alcoholic and alcoholic beverages" between females and males, with females scoring higher than males, 0.28 (95% CI, 0.09 to 0.47), $t(634) = 2.856$, $p = .004$, $d = .23$. Cohen's effect size value ($d = .23$) suggested small practical significance.
b. the mean PBS score "determine not to exceed a set number of drinks" between females and males, with females scoring higher than males, 0.47 (95% CI, 0.27 to 0.67), $t(630) = 4.541$, $p < .0005$, $d = .90$. Cohen's effect size value ($d = .90$) suggested large practical significance.
c. the mean PBS score "eat before/during drinking" between females and males, with females scoring higher than males, 0.24 (95% CI, 0.09 to 0.40), $t(634) = 3.121$, $p = .002$, $d = .26$. Cohen's effect size value ($d = .26$) suggested small practical significance.
d. the mean PBS score "have a friend let you know when you have had enough" between females and males, with females scoring higher than males, 0.76 (95% CI, .55 to .97), $t(633) = 7.031$, $p < .0005$, $d = .57$. Cohen's effect size value ($d = .57$) suggested medium practical significance.
e. the mean PBS score "keep track of how many drinks being consumed" between females and males, with females scoring higher than males, 0.50 (95% CI, 0.29 to 0.71), $t(610) = 4.621$, $p < .0005$, $d = .36$. Cohen's effect size value ($d = .36$) suggested small practical significance.

f. the mean PBS score "stick with only one kind of alcohol" between females and males, with females scoring higher than males, 0.30 (95% CI, 0.12 to 0.48), $t(633) = 3.298$, $p = .001$, $d = .27$. Cohen's effect size value ($d = .27$) suggested small practical significance.

The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances for "avoid drinking games" ($p = .003$), "pace drinks to one or less per hour" ($p < .0005$), "stay with the same group of friends while drinking" ($p < .0005$), and "use a designated driver" ($p < .0005$). Welch t-tests were conducted to determine if there were differences in PBS scores between females and males due to the assumption of homogeneity of variances being violated. Results are summarized as follows with statistical differences in:

g. the mean PBS score "avoid drinking games" between females and males, with females scoring higher than males, 0.41 (95% CI, 0.22 to 0.60), $t(575.005) = 4.284$, $p < .0005$.
h. the mean PBS score "pace drinks to one or less per hour" between females and males, with females scoring higher than males, 0.61 (95% CI, 0.43 to 0.79), $t(601.580) = 6.626$, $p < .0005$.
i. the mean PBS score "stay with the same group of friends while drinking" between females and males, with females scoring higher than males, 0.57 (95% CI, 0.40 to 0.74), $t(471.314) = 6.671$, $p < .0005$.
j. the mean PBS score "use a designated driver" between females and males, with females scoring higher than males, 0.36 (95% CI, 0.20 to 0.53), $t(439.276) = 4.294$, $p < .0005$.

The Holm's Sequential Procedure was conducted to correct for familywise error rates. As a result of this correction, all differences in PBS mean scores remained significant between females and males. These results suggest that females use more PBS than males when drinking alcohol.

Results 2015

Descriptive statistics are presented by means and standard deviations in Table 24. Data are mean ± standard deviation, unless otherwise stated. A series of independent-samples t-tests were run to determine if there were significant differences in PBS use between females and males. Results indicated that mean female scores were higher than mean male scores for all PBS items.

Table 24

Means and Standard Deviations for 2015

PBS and Gender	Mean	SD
Alternate nonalcoholic with alcoholic beverages		
Female (N = 180)	3.85	1.19
Male (N = 107)	3.62	1.28
Avoid drinking games		
Female (N = 180)	3.66	1.31
Male (N = 107)	3.52	1.36
Determine not to exceed a set number of drinks		
Female (N = 180)	3.90	1.36
Male (N = 106)	3.67	1.48
Eat before/during drinking		
Female (N = 180)	5.34	.72
Male (N = 106)	5.03	.76
Have a friend let you know when you have had enough		
Female (N = 180)	4.24	1.37
Male (N = 106)	3.79	1.45
Keep track of how many drinks being consumed		
Female (N = 180)	4.86	1.15
Male (N = 106)	4.68	1.36
Pace drinks to one or less per hour		
Female (N = 179)	3.70	1.24
Male (N = 105)	3.26	1.22
Stay with the same group of friends while drinking		
Female (N = 180)	5.49	.69
Male (N = 106)	5.25	.73
Stick with only one kind of alcohol		
Female (N = 179)	4.28	.96
Male (N = 107)	4.22	.93
Use a designated driver		
Female (N = 179)	5.54	.89
Male (N = 107)	5.52	.89

There was homogeneity of variances, as assessed by Levene's test for equality of variances for "alternate non-alcoholic with alcoholic beverages" (p = .150), "avoid drinking games" (p = .583), "have a friend let you know when you have had enough" (p = .369), "pace your drinks to one or fewer per hour" (p = .844), "stay with the same group of friends the entire time you were drinking" (p = .597), "stick with only one kind

of alcohol when drinking" (p = .838), and "use a designated driver" (p = .960). Results where the assumption of homogeneity of variances were met are summarized as follows with statistical differences in:

a. the mean PBS score "have a friend let you know when you have had enough" between females and males, with females scoring higher than males, 0.45 (95% CI, 0.11 to 0.78), $t(284) = 2.606$, p = .01, d = .32. Cohen's effect size value (d = .32) suggested small practical significance.
b. the mean PBS score "pace your drinks to one or fewer per hour" between females and males, with females scoring higher than males, 0.44 (95% CI, 0.14 to 0.74), $t(284) = 2.914$, p = .004, d = .36. Cohen's effect size value (d = .36) suggested small practical significance.
c. the mean PBS score of "stay with the same group of friends the entire time drinking" between females and males, with females scoring higher than males, 0.24 (95% CI, 0.07 to 0.41), $t(284) = 2.778$, p = .006, d = .34. Cohen's effect size value (d = .34) suggested small practical significance.

Results where the assumption of homogeneity of variances were met are summarized as follows with no statistical difference in:

d. the mean PBS score "alternate non-alcoholic with alcoholic beverages" between females and males, 0.23 (95% CI, -.06 to .53), $t(285) = 1.558$, p = .120.
e. the mean PBS score "avoid drinking games" between females and males, 0.14 (95% CI, -.18 to .46), $t(285) = .851$, p = .395.
f. the mean PBS score "stick with only one kind of alcohol" between females and males, 0.07 (95% CI, -.16 to .30), $t(284) = .605$, p = .546.

g. the mean PBS score "use a designated driver" between females and males, .01 (95% CI, -.20 to .23), $t(284) = .119$, $p = .905$.

The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances for "determine not to exceed a set number of drinks" ($p = .03$), "eat before/during drinking" ($p = .026$), and "keep track of how many drinks being consumed" ($p = .006$). Welch t-tests were run to determine if there were differences in PBS scores between females and males due to the assumption of homogeneity of variances being violated. Results are summarized as follows with statistical significance in:

a. the mean PBS score "eat before/during drinking" between females and males, with females scoring higher than males, 0.32 (95% CI, 0.14 to 0.50), $t(210.265) = 3.460$, $p < .001$.

Results where the assumption of homogeneity of variances were violated are summarized as follows with no statistical difference in:

b. the mean PBS score "determine not to exceed a set number of drinks" between females and males, 0.23 (95% CI, -.12 to .58), $t(204.817) = 1.306$, $p = .193$.
c. the mean PBS score "keep track of how many drinks being consumed" between females and males, 0.18 (95% CI, -.13 to .49), $t(191.554) = 1.118$, $p = .265$.

To correct for familywise error rates for multiple tests, the Holm's Sequential Procedure was conducted. Based on this correction, significance was retained for "eat before/during drinking", "pace drinks to one or fewer per hour", and "stay with the same group of friends the entire time drinking" between females and males. The results indicated that there was a statistically significant difference in PBS scores for females

and males, with females scoring higher than males in using the protective strategies “eat before/during drinking”, “pace drinks to one or fewer per house”, and “stay with the same group of friends the entire time drinking”.

Research Question Five

To determine the relationship between gender and negative alcohol-related consequences, a series of logistic regression analyses were conducted, with gender as the predictor variable adjusting statistically for the impact of alcohol consumption. The Holm’s Sequential Procedure was run to correct for familywise error rates for multiple tests.

Results 2011

In Table 25, the logistic regression predicting likelihood of negative alcohol-related consequences based on gender in 2011 model fit and R^2 are presented. The logistic regression model for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except for “had sex without getting consent” ($p = .185$) and “seriously considered suicide” ($p = .725$). A Holm’s Sequential Procedure was applied to correct for familywise error rates resulting in nonsignificant findings for “got in trouble with police”, “had sex without getting consent”, and “seriously considered suicide”. The models explained 1.8% to 23.1% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 25

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on Gender in 2011 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	53.362	3	.000	.114
Forgot where you were/what you did	113.872	3	.000	.231
Got in trouble with police	9.329	3	.025	.047
Had sex without giving consent	19.735	3	.000	.194
Had sex without getting consent	4.823	3	.185	.104
Had unprotected sex	65.524	3	.000	.148
Physically injured yourself	66.553	3	.000	.164
Physically injured another person	12.984	3	.005	.071
Seriously considered suicide	1.319	3	.725	.018

Note: Got in trouble with police was determined to be nonsignificant after conducting the Holm's Sequential Procedure.

In Table 26, the logistic regression predicting the likelihood of negative alcohol-related consequences based on gender in 2011 are shown. After simultaneously adjusting statistically for alcohol consumption, gender predicted the likelihood of experiencing the consequences "did something you later regretted" ($p = .020$) and "forgot where you were or what you did" ($p = .036$). The odds are 1.562 times greater for males to experience the negative alcohol-related consequence of "did something you later regretted" and 1.529 times greater to experience "forgot where you were/what you did" as a result of alcohol consumption than females. This suggests that being male places one at greater odds of experiencing the negative consequences "did something you later regretted" and "forgot where you were/what you did" when drinking.

Table 26

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on Gender in 2011

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	.446	.191	5.426	1	.020	1.562	1.073	2.272
Forgot where you were/what you did	.425	.203	4.395	1	.036	1.529	1.028	2.275
Got in trouble with police	-.440	.405	1.180	1	.277	.644	.858	1.425
Had sex without giving consent	1.208	.787	2.355	1	.125	3.346	.716	15.651
Had sex without getting consent	.274	1.157	.056	1	.813	1.315	.136	12.698
Had unprotected sex	.261	.212	1.513	1	.219	1.298	.857	1.965
Physically injured yourself	.109	.234	.216	1	.642	1.115	.705	1.764
Physically injured. another person	-.833	.442	3.558	1	.059	.435	.183	1.033
Seriously considered suicide	-.874	.806	1.177	1	.278	.417	.086	2.024

Note: Gender and alcohol consumption variables were entered simultaneously into the logistic regression models. The results for alcohol consumption are not shown. Gender is coded as female = 0; male = 1. Exp = exponeniate; CI = confidence interval.

Results 2013

In Table 27, the logistic regression predicting likelihood of negative alcohol-related consequences based on gender in 2013 model fit and R^2 are presented. The logistic regression model for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except for "someone had sex with me without my consent" ($p = .423$), "had sex with someone without their consent" ($p = .559$), and "seriously considered suicide" ($p = .755$). Holm's Sequential Procedure was conducted to correct for familywise error rates for multiple tests. Based on the correction, non-significant findings for "someone had sex with me without my consent", "had sex

without getting consent", and "seriously considered suicide" were retained. The models explained 1.5% to 26.9% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 27

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on Gender in 2013 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	74.211	3	.000	.150
Forgot where you were/what you did	122.072	3	.000	.238
Got in trouble with police	37.673	3	.000	.149
Someone had sex w/me w/o my consent	2.801	3	.423	.020
Had sex without getting consent	2.064	3	.559	.078
Had unprotected sex	52.573	3	.000	.114
Physically injured yourself	87.096	3	.000	.198
Physically injured another person	52.376	3	.000	.269
Seriously considered suicide	1.191	3	.755	.015

In Table 28, the logistic regression predicting the likelihood of negative alcohol-related consequences based on gender in 2013 are presented. After simultaneously adjusting statistically for alcohol consumption, gender predicted the likelihood of experiencing the consequences "did something you later regretted" ($p = .002$), "forgot where you were or what you did" ($p = .046$), "got in trouble with police" ($p = .032$), and "physically injured another person" ($p = .004$). The odds are 1.742 times greater for males to experience the negative alcohol-related consequence of "did something you later regretted" and 1.449 times greater to experience "forgot where you were/what you did" than females. The odds are about 2 times greater for males to experience "got in trouble with police" and about 4 times greater to experience "physically injured another person" than females as a result of alcohol consumption. This suggests that being male may place one at greater odds of experiencing negative alcohol-related consequences.

Table 28

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on Gender in 2013

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	-.556	.180	9.561	1	.002	.574	.403	.816
Forgot where you were/what you did	-.372	.186	3.981	1	.046	.690	.479	.993
Got in trouble with police	.745	.347	4.601	1	.032	2.106	1.066	4.160
Someone had sex w/me w/o consent	-.849	.589	2.082	1	.149	.482	.135	1.356
Had sex w/someone w/o their consent	.655	1.424	.212	1	.645	1.925	.118	31.346
Had unprotected sex	-.337	.191	3.112	1	.078	.714	.490	1.038
Physically injured yourself	-.035	.212	.027	1	.870	.966	.637	1.464
Physically injured another person	1.499	.523	8.226	1	.004	4.478	1.608	12.475
Seriously considered suicide	-.113	.749	.023	1	.880	.893	.206	3.875

Note: Gender and alcohol consumption variables were entered simultaneously into the logistic regression models. The results for alcohol consumption are not shown. Gender is coded as female = 0; male = 1. Exp = exponeniate; CI = confidence interval.

Results 2015

In Table 29, the logistic regression predicting likelihood of negative alcohol-related consequences based on gender in 2015 model fit and R^2 are presented. The logistic regression model for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except for "got in trouble with police" ($p = .105$), "someone had sex with me without my consent" ($p = .185$), "physically injured another person" ($p = .060$), and "seriously considered suicide" ($p = .184$). Respondents did not report experiencing the consequence "had sex with someone without their consent" in the last 12 months; therefore, the consequence was not included in the model.

A Holm's Sequential Procedure was applied to correct for familywise error rates. As a result of the correction, nonsignificant findings for "got in trouble with police", "someone had sex with me without my consent", "physically injured another person", and "seriously considered suicide" were retained. The models explained 6.0% to 24.5% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 29

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on Gender in 2015 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	31.847	3	.000	.142
Forgot where you were/what you did	56.854	3	.000	.245
Got in trouble with police	6.138	3	.105	.087
Someone had sex with me without my consent	4.830	3	.185	.104
Had unprotected sex	45.032	3	.000	.214
Physically injured yourself	39.030	3	.000	.215
Physically injured another person	7.392	3	.060	.187
Seriously considered suicide	4.845	3	.184	.060

Note: "Had sex with someone without their consent" is not shown because there were no responses indicating experiencing this consequence.

In Table 30, the logistic regression predicting the likelihood of negative alcohol-related consequences based on gender in 2015 are shown. After simultaneously adjusting statistically for alcohol consumption, gender predicted the likelihood of experiencing the consequence "had unprotected sex" ($p = .025$). All other consequences were nonsignificant. The odds are about 2 times greater for males to experience the negative alcohol-related consequence of "had unprotected sex" than females as a result of alcohol consumption.

Table 30

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on Gender in 2015

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	-.439	.458	2.627	1	.105	.645	.380	1.096
Forgot where you were/what you did	.330	.281	1.382	1	.240	1.392	.802	2.414
Got in trouble with police	.075	.713	.011	1	.916	1.078	.266	4.365
Someone had sex w/me w/o consent	-17.650	3881.369	.000	1	.966	.000	.000	.000
Had unprotected sex	-.740	.330	5.043	1	.025	.477	.250	.910
Physically injured yourself	-.701	.387	3.280	1	.070	.496	.232	1.059
Physically injured another person	1.417	1.205	1.383	1	.240	4.126	.389	43.803
Seriously considered suicide	-.113	.749	.023.	1	.880	.893	.206	3.875

Note: Gender and alcohol consumption variables were entered simultaneously into the logistic regression models. The results for alcohol consumption are not shown. Gender is coded as female = 0; male = 1. Exp = exponeniate; CI = confidence interval. "Had sex with someone without their consent" is not shown because there were no responses indicating experiencing this consequence.

Research Question Six

To determine the relationship between protective behavioral strategies, as organized as a three-factor subscale model (stopping/limiting drinking, manner of drinking, and serious harm reduction), and negative alcohol-related consequences, a series of logistic regression analyses were conducted simultaneously adjusting statistically for gender and alcohol consumption. Individual scores from the negative alcohol-related consequences subscale were assessed by a yes or no, dichotomous format. The Holm's Sequential Procedure was applied to correct for familywise error rates for multiple tests.

Results 2011

A series of logistic regression analyses was run to determine the relationship between PBS, as grouped as three separate subscales for stopping/limiting drinking (SLD), manner of drinking (MOD), and serious harm reduction (SHR), on the likelihood that participants experience each negative alcohol-related consequence after simultaneously adjusting statistically for gender and alcohol consumption.

In Table 31, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by stopping/limiting drinking (SLD) strategies in 2011 model fit and R^2 are presented. The logistic regression for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except "seriously considered suicide" ($p = .414$). A Holm's Sequential Procedure was applied to correct for familywise error rates. As a result of the correction, "had sex without getting consent" and "seriously considered suicide" were found to be nonsignificant. The models explained 5.5% to 27.2% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 31

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Stopping/Limiting Drinking (SLD) Strategies in 2011 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	73.232	4	.000	.154
Forgot where you were/what you did	136.146	4	.000	.272
Got in trouble with police	16.368	4	.003	.082
Had sex without giving consent	21.510	4	.000	.211
Had sex without getting consent	10.564	4	.032	.227
Had unprotected sex	81.594	4	.000	.181
Physically injured yourself	83.121	4	.000	.202
Physically injured another person	24.038	4	.000	.131
Seriously considered suicide	3.944	4	.414	.055

Note: "Had sex without getting consent" was found to be nonsignificant as a result of the Holm's Sequential Procedure.

In Table 32, the logistic regression predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by stopping/limiting drinking (SLD) strategies in 2011 are presented. After accounting for gender and alcohol consumption, results indicated that stopping/limiting drinking (SLD) strategies were related to experiencing the consequences "did something you later regretted" ($p < .0005$), "forgot where you were/what you did" ($p < .0005$), "got in trouble with police" ($p = .01$), "had unprotected sex" ($p < .0005$), "physically injured yourself" ($p < .0005$), and "physically injured another person" ($p = .002$). Results indicated that less frequent use of SLD strategies are associated with an increased likelihood of experiencing the negative alcohol-related consequences of "did something you later regretted", "forgot where you were/what you did", "got in trouble with police", "had sex without getting consent", "had unprotected sex, "physically injured yourself", and "physically injured another person". This suggests that students who utilize fewer stopping/limiting drinking (SLD) strategies are more likely to experience negative consequences as a result of alcohol consumption.

Table 32

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Stopping/Limiting Drinking (SLD) Strategies in 2011

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	-.116	.027	19.106	1	.000	.890	.845	.938
Forgot where you were/what you did	-.131	.028	21.242	1	.000	.877	.830	.927
Got in trouble with police	-.159	.062	6.614	1	.010	.853	.755	.963
Had sex without giving consent	-.137	.108	1.604	1	.205	.872	.706	1.078
Had sex without getting consent	.327	.147	4.968	1	.026	1.386	1.040	1.848
Had unprotected sex	-.119	.030	15.503	1	.000	.887	.836	.942
Physically injured yourself	-.139	.035	15.884	1	.000	.870	.813	.932
Physically injured another person	-.223	.070	10.016	1	.002	.801	.697	.919
Seriously considered Suicide	-.190	.120	2.495	1	.114	.827	.653	1.047

Note: Gender, alcohol consumption variables, and SLD total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher SLD scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower SLD scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval. "Had sex without getting consent" was found to be nonsignificant as a result of the Holm's Sequential Procedure.

In Table 33, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by manner of drinking (MOD) strategies in 2011 model fit and R^2 are shown. The logistic regression for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except "had sex without getting consent" ($p = .158$) and "seriously considered suicide" ($p = .854$). Holm's Sequential Procedure was conducted to correct for familywise error rates. As a result of the correction, "had sex without getting consent" and "seriously

considered suicide" were retained as nonsignificant. The models explained 1.9% to 32.0% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 33

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Manner of Drinking (MOD) Strategies in 2011 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	93.683	4	.000	.193
Forgot where you were/what you did	164.081	4	.000	.320
Got in trouble with police	18.767	4	.001	.094
Had sex without giving consent	19.804	4	.001	.194
Had sex without getting consent	6.617	4	.158	.142
Had unprotected sex	80.660	4	.000	.179
Physically injured yourself	80.635	4	.000	.197
Physically injured another person	19.098	4	.001	.104
Seriously considered suicide	1.342	4	.854	.019

In Table 34, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS as grouped by manner of drinking (MOD) strategies in 2011 are presented. After simultaneously accounting for gender and alcohol consumption, results revealed a statistically significant relationship between manner of drinking (MOD) strategies and the negative alcohol-related consequences" did something you later regretted" ($p < .0005$), "forgot where you were/what you did" ($p < .0005$), "got in trouble with police" ($p = .003$), "had unprotected sex" ($p < .0005$), "physically injured yourself" ($p < .0005$), "physically injured another person" ($p = .016$). Overall, lower manner of drinking (MOD) scores were associated with a higher likelihood of experiencing negative alcohol-related consequences.

Table 34

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Manner of Drinking (MOD) Strategies in 2011

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios	
							Lower	Upper
Did something you later regretted	-.200	.033	36.539	1	.000	.819	.767	.873
Forgot where you were/what you did	-.241	.036	44.236	1	.000	.786	.732	.843
Got in trouble with police	-.222	.074	8.926	1	.003	.801	.693	.927
Had sex without giving consent	-.031	.119	.067	1	.795	.970	.768	1.224
Had sex without getting consent	.209	.151	1.915	1	.166	1.233	.917	1.658
Had unprotected sex	-.137	.036	14.578	1	.000	.872	.812	.935
Physically injured yourself	-.153	.042	13.572	1	.000	.858	.791	.931
Physically injured another person	-.191	.079	5.844	1	.016	.826	.708	.964
Seriously considered suicide	-.020	.134	.022	1	.881	.980	.753	1.276

Note: Gender, alcohol consumption variables, and MOD total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher MOD scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower MOD scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval.

In Table 35, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by serious harm reduction (SHR) strategies in 2011 model fit and R^2 are displayed. The logistic regression for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except “had sex without getting consent” ($p = .239$) and “seriously considered suicide” ($p = .640$). In order to correct for familywise error rates, Holm’s Sequential Procedure was applied. As a result of the correction, “got in trouble with police”, “had sex without getting consent”, and “seriously considered suicide” were

nonsignificant. The models explained 3.5% to 23.4% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 35

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Serious Harm Reduction (SHR) Strategies in 2011 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	66.395	4	.000	.140
Forgot where you were/what you did	115.339	4	.000	.234
Got in trouble with police	9.344	4	.053	.047
Had sex without giving consent	20.611	4	.000	.202
Had sex without getting consent	5.512	4	.239	.119
Had unprotected sex	67.656	4	.000	.152
Physically injured yourself	67.118	4	.000	.165
Physically injured another person	14.099	4	.007	.077
Seriously considered suicide	2.526	4	.640	.035

Note: "Got in trouble with police" was found to be nonsignificant as a result of the Holm's Sequential Procedure.

In Table 36, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS as grouped by serious harm reduction (SHR) strategies in 2011 are presented. After simultaneously accounting for gender and alcohol consumption, results indicated that there was a statistically significant relationship between serious harm reduction (SHR) strategies and the negative alcohol-related consequence "did something you later regretted" ($p < .0005$). All other consequences were not significant. Lower serious harm reduction (SHR) scores were associated with a higher likelihood of experiencing the consequence "did something you later regretted".

Table 36

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Serious Harm Reduction (SHR) Strategies in 2011

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	-.210	.059	12.486	1	.000	.811	.722	.911
Forgot where you were/what you did	-.074	.061	1.469	1	.226	.929	.824	1.047
Got in trouble with police	-.014	.117	.015	1	.904	.986	.784	1.240
Had sex without giving consent	-.178	.185	.930	1	.335	.837	.582	1.202
Had sex without getting consent	.288	.365	.623	1	.430	1.334	.652	2.727
Had unprotected sex	-.091	.062	2.158	1	.142	.913	.809	1.031
Physically injured yourself	-.052	.069	.573	1	.449	.949	.829	1.086
Physically injured another person	-.123	.114	1.178	1	.278	.884	.707	1.105
Seriously considered suicide	-.227	.194	1.363	1	.243	.797	.544	1.167

Note: Gender, alcohol consumption variables, and SHR total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher SHR scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower SHR scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval.

Results 2013

A series of logistic regression analyses was conducted to determine the relationship between PBS, as grouped as three separate subscales for stopping/limiting drinking (SLD), manner of drinking (MOD), and serious harm reduction (SHR), on the likelihood that participants experience each negative alcohol-related consequence after simultaneously adjusting statistically for gender and alcohol consumption.

In Table 37, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by stopping/limiting drinking (SLD) strategies in 2013 model fit and R^2 are presented. The logistic regression for each

negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except "had sex with someone without their consent" ($p = .723$) and "seriously considered suicide" ($p = .141$). A Holm's Sequential Procedure was applied to correct for familywise error rates. As a result of the correction, "someone had sex with me without my consent", "had sex with someone without their consent" and "seriously considered suicide" were found to be nonsignificant. The models explained 7.8% to 26.9% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 37

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Stopping/Limiting Drinking (SLD) Strategies in 2013 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	77.982	4	.000	.157
Forgot where you were/what you did	131.161	4	.000	.254
Got in trouble with police	40.892	4	.000	.161
Someone had sex w/me w/o my consent	11.168	4	.025	.080
Had sex w/someone w/o their consent	2.071	4	.723	.078
Had unprotected sex	54.529	4	.000	.118
Physically injured yourself	87.013	4	.000	.198
Physically injured another person	52.381	4	.000	.269
Seriously considered suicide	6.912	4	.141	.086

Note: "Someone had sex with me without my consent" was found nonsignificant as a result of the Holm's Sequential Procedure.

In Table 38, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS as grouped by stopping/limiting drinking (SLD) strategies in 2013 are presented. After simultaneously accounting for gender and alcohol consumption, results indicated that there was a statistically significant relationship between stopping/limiting drinking (SLD) strategies and the negative alcohol-related consequences "did something you later regretted" ($p = .053$) and "forgot where you where/what you did" ($p = .003$). Lower stopping/limiting drinking (SLD) scores were

associated with a higher likelihood of experiencing the consequences "did something you later regretted and "forgot where you where/what you did".

Table 38

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Stopping/Limiting Drinking (SLD) Strategies in 2013

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	-.048	.025	3.749	1	.053	.953	.907	1.001
Forgot where you were/what you did	-.078	.026	8.947	1	.003	.925	.879	.973
Got in trouble with police	-.093	.052	3.135	1	.077	.912	.823	1.010
Someone had sex w/me w/o consent	-.217	.079	7.602	1	.006	.805	.690	.939
Had sex w/someone w/o their consent	-.015	.191	.006	1	.937	.985	.677	1.433
Had unprotected sex	-.037	.027	1.948	1	.163	.963	.914	1.015
Physically injured yourself	-.002	.030	.007	1	.935	.998	.940	1.059
Physically injured another person	-.004	.067	.004	1	.947	.996	.873	1.135
Seriously considered suicide	.249	.107	5.381	1	.020	1.283	1.039	1.583

Note: Gender, alcohol consumption variables, and SLD total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher SLD scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower SLD scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval. "Someone had sex with me without my consent" and "seriously considered suicide" were found nonsignificant in the model.

In Table 39, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by manner of drinking (MOD) strategies in 2013 model fit and R^2 are shown. The logistic regression for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except "had sex with someone without their consent" ($p = .666$) and "seriously considered suicide" ($p = .350$). A Holm's Sequential Procedure was conducted to correct

for familywise error rates. As a result of the correction, “someone had sex with me without my consent”, “had sex with someone without their consent” and “seriously considered suicide” were found to be nonsignificant. The models explained 5.5% to 29.9% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 39

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Manner of Drinking (MOD) Strategies in 2013 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	92.179	4	.000	.184
Forgot where you were/what you did	157.765	4	.000	.299
Got in trouble with police	46.297	4	.000	.182
Someone had sex w/me w/o my consent	11.397	4	.022	.082
Had sex w/someone w/o their consent	2.380	4	.666	.090
Had unprotected sex	65.238	4	.000	.141
Physically injured yourself	89.721	4	.000	.203
Physically injured another person	53.353	4	.000	.274
Seriously considered suicide	4.442	4	.350	.055

Note: “Someone had sex with me without my consent” was found nonsignificant as a result of the Holm’s Sequential Procedure.

In Table 40, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS as grouped by manner of drinking (MOD) strategies in 2013 are presented. After simultaneously accounting for gender and alcohol consumption, results revealed that there was a statistically significant relationship between manner of drinking (MOD) strategies and the negative alcohol-related consequences “did something you later regretted” ($p < .0005$), “forgot where you where/what you did” ($p < .0005$), “got in trouble with police” ($p = .004$), and “had unprotected sex” ($p < .0005$). Lower manner of drinking (MOD) scores were associated with a higher likelihood of experiencing the consequences “did something you later

regretted and “forgot where you where/what you did”, “got in trouble with police”, and “had unprotected sex”.

Table 40

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Manner of Drinking (MOD) Strategies in 2013

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios	
							Lower	Upper
Did something you later regretted	-.129	.031	17.160	1	.000	.879	.827	.934
Forgot where you were/what you did	-.195	.034	32.455	1	.000	.823	.770	.880
Got in trouble with police	-.189	.066	8.226	1	.004	.828	.727	.942
Someone had sex w/me w/o consent	-.262	.092	8.091	1	.004	.770	.643	.922
Had sex w/someone w/o their consent	-.132	.237	.311	1	.577	.876	.550	1.395
Had unprotected sex	-.118	.034	12.296	1	.000	.889	.832	.949
Physically injured yourself	-.062	.038	2.596	1	.107	.940	.872	1.013
Physically injured another person	-.084	.085	.966	1	.326	.920	.778	1.087
Seriously considered suicide	.226	.127	3.184	1	.074	1.254	.978	1.608

Note: Gender, alcohol consumption variables, and MOD total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher MOD scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower MOD scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval. “Someone had sex with me without my consent” was found nonsignificant in the model.

In Table 41, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by serious harm reduction (SHR) strategies in 2013 model fit and R^2 are displayed. The logistic regression for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except “someone had sex with me without my consent” ($p = .228$), “had sex with someone without their consent” ($p = .705$) and “seriously considered suicide”

(p = .658). A Holm's Sequential Procedure was conducted to correct for familywise error rates for multiple tests. Based on the correction, "someone had sex with me without my consent", "had sex with someone without their consent" and "seriously considered suicide" were retained as nonsignificant. The models explained 3.0% to 27.5% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 41

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Serious Harm Reduction (SHR) Strategies in 2013 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	75.968	4	.000	.154
Forgot where you were/what you did	121.580	4	.000	.238
Got in trouble with police	39.430	4	.000	.156
Someone had sex w/me w/o my consent	5.461	4	.228	.041
Had sex w/someone w/o their consent	2.165	4	.705	.082
Had unprotected sex	58.649	4	.000	.127
Physically injured yourself	86.853	4	.000	.197
Physically injured another person	53.623	4	.000	.275
Seriously considered suicide	2.426	4	.658	.030

In Table 42, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS as grouped by serious harm reduction (SHR) strategies in 2013 are presented. After simultaneously accounting for gender and alcohol consumption, results indicated that there was a statistically significant relationship between serious harm reduction (SHR) strategies and the negative alcohol-related consequences "had unprotected sex" (p = .011). All other negative alcohol-related consequences were not statistically significant. Lower serious harm reduction (SHR) scores were associated with a higher likelihood of experiencing the consequence "had unprotected sex".

Table 42

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Serious Harm Reduction (SHR) Strategies in 2013

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	-.083	.055	2.303	1	.129	.920	.827	1.025
Forgot where you were/what you did	-.001	.057	.000	1	.983	.999	.893	1.117
Got in trouble with police	-.119	.087	1.879	1	.170	.888	.748	1.053
Someone had sex w/me w/o consent	-.236	.131	3.265	1	.071	.790	.612	1.020
Had sex w/someone w/o their consent	-.129	.379	.115	1	.734	.879	.418	1.849
Had unprotected sex	-.141	.055	6.425	1	.011	.869	.779	.969
Physically injured yourself	.019	.063	.087	1	.768	1.019	.900	1.153
Physically injured another person	-.125	.106	1.386	1	.239	.882	.717	1.087
Seriously considered suicide	.297	.291	1.042	1	.307	1.346	.761	2.383

Note: Gender, alcohol consumption variables, and SHR total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher SHR scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower SHR scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval.

Results 2015

A series of logistic regression analyses was conducted to determine the relationship between PBS, as grouped as three separate subscales for stopping/limiting drinking (SLD), manner of drinking (MOD), and serious harm reduction (SHR), on the likelihood that participants experience each negative alcohol-related consequence after simultaneously adjusting statistically for gender and alcohol consumption.

In Table 43, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by stopping/limiting drinking (SLD) strategies in 2015 model fit and R^2 are presented. The logistic regression for each

negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences except "got in trouble with police" ($p = .076$), "someone had sex with me without my consent" ($p = .159$) and "seriously considered suicide" ($p = .285$). Respondents did not report experiencing the consequence "had sex with someone without their consent" in the last 12 months; therefore, the consequence was removed from the model. In order to correct for familywise error, a Holm's Sequential Procedure was run. As a result, "physically injured another person", "got in trouble with police", "someone had sex with me without my consent", and "seriously considered suicide" were nonsignificant. The models explained 6.3% to 33.2% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 43

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Stopping/Limiting Drinking (SLD) Strategies in 2015 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	35.315	4	.000	.156
Forgot where you were/what you did	80.242	4	.000	.332
Got in trouble with police	8.450	4	.076	.120
Someone had sex w/me w/o my consent	6.597	4	.159	.141
Had unprotected sex	52.717	4	.000	.248
Physically injured yourself	51.876	4	.000	.280
Physically injured another person	10.573	4	.032	.265
Seriously considered suicide	5.025	4	.285	.063

Note: "Physically injured another person" was found nonsignificant as a result of the Holm's Sequential Procedure.

In Table 44, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS as grouped by stopping/limiting drinking (SLD) strategies in 2015 are shown. After simultaneously accounting for gender and alcohol consumption, results indicated that there was a statistically significant relationship between stopping/limiting (SLD) strategies and the negative alcohol-related

consequences “forgot where you were/what you did” ($p < .0005$), “had unprotected sex” ($p = .006$), and “physically injured yourself” ($p = .001$). All other negative alcohol-related consequences were not statistically significant. Lower stopping/limiting drinking (SLD) scores were associated with a higher likelihood of experiencing the consequences “forgot where you were/what you did”, “had unprotected sex”, and “physically injured yourself”.

Table 44

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Stopping/Limiting Drinking (SLD) Strategies in 2015

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	-.064	.035	3.441	1	.064	.938	.876	1.004
Forgot where you were/what you did	-.183	.040	21.314	1	.000	.832	.770	.900
Got in trouble with police	-.149	.102	2.141	1	.143	.861	.705	1.052
Someone had sex w/me w/o consent	-.168	.129	1.707	1	.191	.845	.657	1.088
Had unprotected sex	-.113	.041	7.431	1	.006	.893	.823	.969
Physically injured yourself	-.175	.051	11.899	1	.001	.839	.759	.927
Physically injured another person	-.291	.187	2.425	1	.119	.747	.518	1.078
Seriously considered suicide	-.036	.084	.180	1	.672	.965	.818	1.138

Note: Gender, alcohol consumption variables, and SLD total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher SLD scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower SLD scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval.

In Table 45, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by manner of drinking (MOD) strategies in 2015 model fit and R^2 are displayed. The logistic regression for each negative alcohol-related consequence was statistically significant ($p < .05$) for all

consequences except “physically injured another person” (p = .086) and “seriously considered suicide” (p = .105). Respondents did not report experiencing the consequence “had sex with someone without their consent” in the last 12 months; therefore, the consequence was removed from the model. A Holm’s Sequential Procedure was applied to correct for familywise error rates. As a result of the correction, “someone had sex with me without my consent”, “got in trouble with the police”, “physically injured another person”, and “seriously considered suicide” were nonsignificant. The models explained 9.5% to 35.8% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 45

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Manner of Drinking (MOD) Strategies in 2015 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	44.980	4	.000	.196
Forgot where you were/what you did	87.346	4	.000	.358
Got in trouble with police	9.993	4	.041	.141
Someone had sex w/me w/o my consent	12.244	4	.016	.260
Had unprotected sex	60.787	4	.000	.282
Physically injured yourself	59.040	4	.000	.314
Physically injured another person	8.161	4	.086	.206
Seriously considered suicide	7.657	4	.105	.095

Note: “Got in trouble with police” and “someone had sex with me without my consent” was found nonsignificant as a result of the Holm’s Sequential Procedure.

In Table 46, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS as grouped by manner of drinking (MOD) strategies in 2015 are presented. After simultaneously accounting for gender and alcohol consumption, results indicated that there was a statistically significant relationship between manner of drinking (MOD) strategies and the negative alcohol-related consequences “did something you later regretted” (p < .0005), “forgot where you were/what you did” (p < .0005),“had unprotected sex” (p < .0005), and “physically

injured yourself" ($p < .0005$). All other negative alcohol-related consequences were not statistically significant. Lower manner of drinking (MOD) scores were associated with a higher likelihood of experiencing the consequences "did something you later regretted", "forgot where you were/what you did", "had unprotected sex", and "physically injured yourself".

Table 46

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Manner of Drinking (MOD) Strategies in 2015

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios Lower	Upper
Did something you later regretted	-.172	.049	12.200	1	.000	.842	.764	.927
Forgot where you were/what you did	-.299	.059	25.443	1	.000	.741	.660	.833
Got in trouble with police	-.282	.152	3.464	1	.063	.754	.560	1.015
Someone had sex w/me w/o consent	-.489	.194	6.339	1	.012	.613	.419	.897
Had unprotected sex	-.235	.063	13.809	1	.000	.791	.699	.895
Physically injured yourself	-.329	.081	16.492	1	.001	.720	.614	.844
Physically injured another person	-.198	.238	.695	1	.405	.820	.514	1.308
Seriously considered suicide	-.200	.123	2.648	1	.104	.819	.644	1.042

Note: Gender, alcohol consumption variables, and MOD total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher MOD scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower MOD scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval. "Someone had sex with me without my consent" was found nonsignificant in the model.

In Table 47, the logistic regression model predicting the likelihood of negative alcohol-related consequences based on PBS as grouped by serious harm reduction (SHR) strategies in 2015 model fit and R^2 are shown. The logistic regression for each negative alcohol-related consequence was statistically significant ($p < .05$) for all consequences

except “someone had sex with me without my consent” (p = .290) and “seriously considered suicide” (p = .154). Respondents did not report experiencing the consequence “had sex with someone without their consent” in the last 12 months; therefore, the consequence was removed from the model. Holm’s Sequential Procedure was conducted to correct for familywise error rates. As a result of the correction, “physically injured another person”, “someone had sex with me without my consent”, and “seriously considered suicide” were nonsignificant. The models explained 8.3% to 29.7% (Nagelkerke R^2) of the variance in negative alcohol-related consequences.

Table 47

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Serious Harm Reduction (SHR) Strategies in 2015 Model Fit and R^2 (Nagelkerke)

Outcome Variable (Consequence)	χ^2	df	Sig.	R^2
Did something you later regretted	34.300	4	.000	.152
Forgot where you were/what you did	70.525	4	.000	.297
Got in trouble with police	13.042	4	.011	.183
Someone had sex w/me w/o my consent	4.975	4	.290	.107
Had unprotected sex	47.963	4	.000	.227
Physically injured yourself	48.046	4	.000	.261
Physically injured another person	10.819	4	.029	.271
Seriously considered suicide	6.681	4	.154	.083

Note: “Physically injured another person” was found nonsignificant as a result of the Holm’s Sequential Procedure.

In Table 48, the logistic regression predicting likelihood of negative alcohol-related consequences based on PBS as grouped by serious harm reduction (SHR) strategies in 2015 are displayed. After simultaneously accounting for gender and alcohol consumption, results indicated that there was a statistically significant relationship between serious harm reduction (SHR) strategies and the negative alcohol-related consequences “forgot where you were/what you did” (p < .0005), “got in trouble with police” (p = .006), and “physically injured yourself” (p = .002). All other negative

alcohol-related consequences were not statistically significant. Lower serious harm reduction (SHR) scores were associated with a higher likelihood of experiencing the consequences "forgot where you were/what you did", "got in trouble with police", and "physically injured yourself".

Table 48

Logistic Regression Predicting Likelihood of Negative Alcohol-Related Consequences Based on PBS as Grouped by Serious Harm Reduction (SHR) Strategies in 2015

Consequences	B	SE	Wald	df	Sig.	Odds Ratio Exp(B)	95% CI for Odds Ratios	
							Lower	Upper
Did something you later regretted	-.153	.098	2.439	1	.118	.858	.709	1.040
Forgot where you were/what you did	-.389	.108	13.015	1	.000	.678	.549	.837
Got in trouble with police	-.543	.199	7.470	1	.006	.581	.394	.858
Someone had sex w/me w/o consent	-.124	.313	.156	1	.693	.884	.479	1.632
Had unprotected sex	-.185	.107	2.982	1	.084	.831	.673	1.025
Physically injured yourself	-.363	.120	9.148	1	.002	.696	.550	.880
Physically injured another person	-.542	.286	3.585	1	.058	.582	.332	1.019
Seriously considered suicide	-.279	.195	2.040	1	.153	.757	.516	1.109

Note: Gender, alcohol consumption variables, and SHR total score were entered simultaneously into the logistic regression models. The results for gender and alcohol consumption are not shown. Because higher SHR scores are indicative of greater use of the strategies, Exp(B) values below 1 indicate that lower SHR scores are associated with greater likelihood of experiencing the negative consequence. Exp = exponeniate; CI = confidence interval.

Chapter V

Discussion

Purpose

The purpose of this study was to describe the relationship, if any, between protective behavioral strategy use and the experience of negative alcohol-related consequences as a result of alcohol consumption at a Midwestern university as measured by the American College Health Associations' National College Health Assessment – II and IIb.

Research Question One

Research question one investigated the relationship between PBS use and the experience of negative alcohol-related consequences. In this study, the results indicated that less frequent use of PBS was related to a greater likelihood of experiencing negative alcohol-related consequences, even after simultaneously adjusting for gender and alcohol consumption. These results mirrored the findings of previous studies where lower use of PBS was associated with a higher experience of negative alcohol-related consequences (Araas & Adams, 2008; Martens et al., 2004; Yusko et al., 2008). Findings from these studies support the relationship between PBS and negative alcohol-related consequences.

Although the relationship is supported, there were some negative alcohol-related consequences that were not related to PBS use. "Seriously considered suicide" and "had sex without getting consent/had sex with someone without their consent" were not statistically significant in the logistic regression analyses for all assessment years. It is possible that the non-significance of these consequences may be due to low variability, as most all of the participants in the samples did not report experiencing these consequences

in the past year. This supports a similar finding by Martens et al. (2004) where the alcohol-related consequence of having sex as a result of force or threat of force was not included in the logistic regression analyses due to the low number of participants who reported experiencing it. “Seriously considered suicide” and “had sex without getting consent/had sex with someone without their consent” seem to be items of a sensitive nature; therefore, it is also possible that students did not feel comfortable reporting these consequences.

The negative consequences “did something you later regretted”, “forgot where you were/what you did”, and “had unprotected sex” were associated with PBS in all sample years, which also imitates the results found in Martens et al. (2004). Overall, the findings of this study support the notion that PBS is related to negative consequences, where less frequent use of PBS is associated with a greater likelihood of experiencing negative alcohol-related consequences as a result of alcohol consumption.

Research Question Two

Research question two examined the percent of college students who use PBS while consuming alcohol. In this study, the most common PBS participants indicated they “sometimes”, “most of the time”, and “always” used when they partied or socialized were “eat before/during drinking”, “use a designated driver, and “stay with the same group of friends the entire time while drinking”. On average and across sample years, approximately 94% of students indicated “eat before/during drinking”, around 93% reported “use a designated driver”, and about 94% disclosed “stay with the same group of friends the entire time while drinking”. In contrast, “pace drinks to one or fewer per hour” (43%), “alternate non-alcoholic with alcoholic beverages” (48%), and “avoid

drinking games" (41%) were the least used strategies. This supports prior research that shows that "eat before/during drinking" and "use a designated driver" were top choices for PBS use (Delva et al., 2004; Martens et al., 2004); whereas, "pace drinks to one or fewer per hour" and "alternate non-alcoholic with alcoholic beverages" were the least used protective behaviors (Delva et al., 2004).

It appears college students are commonly using protective behaviors that are easier to implement than others. Choosing protective behaviors, such as "eat before/during drinking", "use a designated driver", and "stay with the same group of friends" can be made in advance of a drinking occasion. Therefore, it may be easier for students to adopt them because the decisions have been predetermined and take little effort to reinforce while actively drinking. For example, students may eat before they attend a party, decide how they will get home from the party (e.g., a sober friend or Uber service), and purpose to stay with their friends the entire night. However, PBS targeting the consumption rate of alcohol, such as "alternate non-alcoholic with alcoholic beverages", "pace drinks to one or fewer per hour", and "avoid drinking games" are minimally used to safeguard students from experiencing negative consequences. Martens et al. (2004) proposed a distinction in the popularity of PBS use, such that some PBS are easier to adopt than others that require a certain level of self-monitoring. The results of this study seem similar. It may be increasingly difficult to self-monitor one's drinking behavior as the amount and rate of consumption progresses. For example, intentions to use PBS such as "alternate non-alcoholic and alcoholic beverages" and "pace drinks to one or fewer per hour" may be forgotten or dismissed once a certain threshold of consumption is reached. Once this threshold is reached, one may experience cognitive

impairment that negates any continued attempt to control the amount and rate of consumption. Furthermore, perhaps the college environment plays a role in the selection of PBS because it affords students the opportunity to drink in excess (Merrill & Carey, 2016). It is possible that implementation of PBS to control the rate of consumption may be difficult for college students to employ, due to the nature of social drinking and the presence of peer pressure. For example, an invitation to participate in a drinking game may be arduous for a student to decline, even if they intend not to play. Perhaps the peer pressure to "fit in" and the desire to be socially accepted override the willpower to monitor one's drinking, despite best intentions.

Some of the PBS in this study may be easy to implement or very difficult for college students to carry out when drinking. The college environment might also help explain the difference in the use of PBS, as students may experience peer pressure to continue drinking and disregard any plans to keep track of consumption. Thus, health educators should keep in mind that some PBS may be easier to implement than others when using PBS for the purpose of intervention.

Research Question Three

Research question three purposed to determine the percent of college students who had experienced negative alcohol-related consequences as a result of alcohol consumption. The most common negative consequences experienced by participants in the last year were "did something you later regretted", "forgot where you were/what you did", "had unprotected sex", and "physically injured yourself". On average and across sample years, around 47% of students reported they "did something you later regretted", about 45% indicated "forgot where you were/what you did", approximately 28% revealed

they “had unprotected sex”, and around 20% reported “physically injured yourself”. Contrarily, some of the least experienced negative consequences were “had sex without getting consent/had sex with someone without their consent” (0.5%), “had sex without giving consent/someone had sex with me without my consent” (2.1%), “seriously considered suicide” (2.1%), and “physically injured another person” (3.5%). Like this study, prior research utilizing the NCHA revealed similar findings. Specifically, Martens et al. (2004) found that 48.2% of respondents indicated experiencing the negative alcohol-related consequence “did something you later regretted”. These results are notably similar to this study’s finding of 48%, an average across all three samples. Further, Delva et al. (2004) found that among males and females, the top reported negative consequences were “did something you later regretted”, “forgot where you were/what you did”, “had unprotected sex”, and “physically injured yourself”. It appears that among similar studies using the NCHA, the findings of this study are akin to the top negative alcohol-related consequences as reported by participants in other studies.

According to O’Brien et al. (2006), college students are more inclined to experience negative alcohol-related consequences because of the amount and frequency of alcohol use. In this study, on average and across all samples, approximately 21% of participants reported consuming alcohol ten or more times in the past month; correspondingly, Wechsler et al. (2002) found that 23% of respondents indicated drinking alcohol on ten or more times in the past month. The results of this study were comparable. Additionally, on average and across all samples, about 61% of participants reported consuming five or more drinks of alcohol at a sitting at least once in the two

weeks prior to the survey. This means that in this study more than half of respondents engaged in binge drinking at least once in the last two weeks.

Prior research has shown that frequent binge drinkers may be more at risk of experiencing negative alcohol-related consequences than other students who drink (Wechsler et al., 2000). It appears that college students who binge drink may be more likely to experience blackouts, forgetting where they were or what they did. The experience of a black out may lead to experiencing regret or neglecting to use protection during sex. Prior research found that binge drinking is associated with risky sexual conduct, such as unplanned sex and not using protection (Wechsler et al., 2000). Further, White et al. (2000), suggested that blackouts may result in risky behaviors including sex with familiar and unfamiliar persons, arguments, and vandalism. Therefore, it is possible that the most commonly experienced negative alcohol-related consequences found in this study (doing something you later regretted; forgetting where you were/what you did; and had unprotected sex) may be explained by the amount and frequency of alcohol consumption. Even though the relationship between alcohol consumption and the experience of negative consequences was not investigated in this study, it can be inferred that the amount and frequency of alcohol use may help explain the most common negative consequences experienced by the participants. Some studies found a positive relationship between alcohol use and negative alcohol-related consequences (Benton et al., 2004; Parks & Grant, 2005). However, further study on the relationship between alcohol consumption and the experience of negative alcohol-related consequences would need to be investigated.

Research Question Four

Research question four investigated the relationship between gender and PBS. In this study, results varied across samples. In 2011, there was a significant difference between females and males in PBS use except for "alternate non-alcoholic with alcoholic beverages", "determine, in advance, not to exceed a set number of drinks", and "stick with only one kind of alcohol" when drinking. In 2013, there was a significant difference between females and males in all protective strategies, with a medium effect (d = .57) for "have a friend let you know when you have had enough" and a large effect (d = .90) for "determine, in advance, not to exceed a set number of drinks". In 2015, there was a significant difference between females and males in PBS use for "stay with the same group of friends the entire time while drinking", "eat before/during drinking", and "pace drinks to one or fewer per hour". The findings of this research varied and were somewhat inconsistent among sample years.

It appears that the results for sample year 2015 were different in comparison to years 2011 and 2013. It is possible that the difference in results could be attributed to the difference in sample size and the change in the administration of the survey. The sample size for 2015 was less than half of the size of the samples for 2011 and 2013. In 2015, the survey was changed from a paper-based survey to an online/web-based survey. It is possible that the lower response rate was due to the change in the way the survey was administered. It is also possible that the lower response rate could be explained by the fact that students were not interested in completing an online/web-based survey.

Even though the results of the data vary, it appears that overall females use PBS more often than males. Several prior studies made similar conclusions; thus, supporting

the notion that female college students are more likely to utilize PBS than male students (Benton et al., 2004; Delva et al., 2004). Differences in the use of PBS may be explained by traditional gender norms, where females might respond to their innate need to feel safe and males may avoid behaviors that could be perceived as weak or lacking in masculinity (Delva et al., 2004; Kenney & LaBrie, 2013). In this study, it seems female students were more likely to use protective strategies that require dependence on a social group, such as "stay with the same group of friends the entire time while drinking" and "have a friend let you know when you have had enough" than their male counterparts. This finding is supported in previous studies such that female college students may be more likely to utilize PBS that offer a level of protection through social support while drinking (Delva et al., 2004). Females may be attracted to certain PBS, where relying on friends to let them know when they should stop drinking and staying with their friends might help them feel more protected from harm or sexual victimization (Kenny & LaBrie, 2013). On the other hand, male students might shy away from protective behaviors that rely on social support in order to keep up the appearance of masculinity and the idea of being the protector and not the protected. In comparison to female students, males were not as likely to use protective behaviors that prevent rapid alcohol consumption, such as "avoid drinking games", "pace drinks to one or fewer per hour", and "keep track of drinks being consumed". It is possible that male college students do not want to appear weak when challenged to a drinking game or too cowardly by placing limits on the amount of alcohol consumed. Therefore, it seems that male college students may not be drawn to utilize PBS (i.e., have a friend let you know when you have had enough) that relies heavily upon social support.

The findings from this study indicate there were gender differences in PBS use and support prior research that posits that students' innate use of PBS may be indicative of gender norms (Delva et al., 2004; Kenny & LaBrie, 2013). Health educators should keep in mind that natural gender differences exist when using PBS as an intervention tool. It is also worthwhile to note that PBS are skills that can be taught and learned. A skills-based training approach to PBS may empower students to overcome natural gender barriers, where those who do not naturally use PBS may learn effective strategies for implementation.

Research Question Five

Research question five examined the relationship between gender and negative alcohol-related consequences. The findings of this study varied across sample years. In 2011, results indicated that even after controlling for gender and alcohol consumption, being male increased the odds of experiencing the negative consequences "did something you later regretted" and "forgot where you were/what you did". In 2013, results indicated that the odds are greater for males to experience the consequences "did something you later regretted" and "forgot where you were/what you did". Additionally, the odds are about two times greater for males to experience "got in trouble with police" and about four times greater to experience "physically injured another person" than females as a result of alcohol consumption. In 2015, males were twice as likely to experience the consequence "had unprotected sex". Although the results varied among samples, these findings suggested that males are more likely to experience negative alcohol-related consequences than females.

It is interesting that in sample year 2013, male college students were twice as likely to experience the consequence "got in trouble with police", and four times more likely to experience the consequence "physically injured another person" than female college students. These results were only evident in the sample year 2013, and there are no reasonable explanations for the difference other than it being a different sample year. It is possible that males are more likely to experience these consequences as research has shown that males reported higher levels of alcohol use, drank for longer periods of time, used less PBS, and experienced more negative alcohol-related consequences than females (Frank et al., 2012).

In both sample years 2011 and 2013, results indicated that being male increases the odds of experiencing "did something you later regretted" and "forgot where you were/what you did". In 2015, males reported being twice as likely to experience "had unprotected sex" than females. These consequences are experienced by males and females alike; however, these findings indicated that being male increases the odds of experiencing them. The findings in this study seem to tie in well with previous studies wherein females reported fewer consequences than males (Haines et al., 2006; Parks & Grant, 2005; Palmer et al., 2010). A potential explanation for this is the finding that females use more PBS than males (Benton et al., 2004; Delva et al., 2004; Frank et al., 2006; LaBrie et al., 2011; Ngyen et al., 2011; Walters et al., 2007). It appears that females' higher use of PBS may lower their experience of negative alcohol-related consequences. Conversely, for males, less frequent use of PBS may have increased their experience of negative consequences.

Research Question Six

Research question six determined to examine the relationship between PBS, as organized as a three-factor subscale model (stopping/limiting drinking, manner of drinking, and serious harm reduction) and negative alcohol-related consequences. The results of this study varied across each sample year. It appears that each sample year rendered inconsistent results for SLD strategies and SHR strategies; however, MOD strategies for each sample year seemed more consistent.

In 2011, SLD strategies were related to 6 out of 9 consequences, whereas SLD strategies were only associated with 2 out of 9 in 2013, and 3 out of 9 in 2015. It is unclear why each sample year rendered varied results. It is possible that SLD strategies are somewhat inconsistent and not as effective as other strategies at protecting students from alcohol-related harm. SLD strategies (alternate non-alcoholic with alcoholic beverages; determine, in advance, not to exceed a set number of drinks; have a friend let you know when you have had enough; and keep track of drinks consumed) require a level of self-monitoring. Lewis et al. (2015) found that strategies that target stopping or limiting strategies, such as "determine, in advance, not to exceed a set number of drinks" and "have a friend let you know when you have had enough" were related to higher consumption levels and greater likelihood of experiencing negative alcohol-related consequences. This suggests that SLD strategies could possibly be counterproductive. It is possible that students may fail at attempts to stop or limit consumption once they reach a certain drinking threshold. It is also possible that a friend may neglect their duty in letting you know when you have had enough.

Overall, SLD strategies were associated with some common negative consequences such as “did something you later regretted”, “forgot where you were/what you did”, “had unprotected sex”, and “physically injured yourself”. Even though the results of this study are somewhat inconsistent across sample years, SLD strategies may provide some benefit in protection against experiencing alcohol-related harm. Although previous research suggests they could be counterproductive, it may not be true in every case. Therefore, it remains unclear whether SLD strategies are effective.

Findings for MOD strategies appear to be more consistent across all samples. In 2011, MOD strategies were associated with 6 out of 9 consequences, and 4 out of 9 for both sample years in 2013 and 2015. The results from this study indicated that MOD strategies were related to the consequences “did something you later regretted”, “forgot where you were/what you did”, and “had unprotected sex” across all sample years. MOD strategies (avoid drinking games; eat before/during drinking; pace drinks to one or fewer per hour; and stick with only one kind of alcohol when drinking) target the manner in which one consumes alcohol. Prior research found that MOD strategies appear to be the most effective protective strategies that reduce both alcohol consumption and negative alcohol-related consequences (Martens et al., 2007). Even though MOD strategies may be most effective in reducing consumption rates and decreasing the occurrence of alcohol-related consequences, previous research shows that they are not frequently used by college students (Suftin et al., 2009). According to Suftin et al. (2009), less than half of college students reported using the protective strategy “avoid drinking games”. A similar pattern was obtained in this study, where on average and across all samples, only 41% of participants reported using it. This suggests that nearly 60% of college students

participate in drinking games which may lead to rapid consumption, quick intoxication, and increased risk of experiencing negative alcohol-related consequences. It is possible that college students may not intend to control the rate of alcohol consumption. Thus, presenting a need for future research to examine the reason behind the selection of certain PBS.

In this study, results for SHR strategies were varied across samples. In 2011, SHR strategies were related to the negative consequence "did something you later regretted". In 2013, SHR strategies were associated with the consequence "had unprotected sex". For 2015, SHR strategies were related to "forgot where you were/what you did", "got in trouble with police", and "physically injured yourself". There seems to be a lack of consistency across sample sizes for these results. SHR strategies (use a designated driver and stay with the same group of friends the entire time while drinking) purpose to reduce the incidence of serious alcohol-related harm. Previous research indicated that students reported heavier drinking episodes and the experience of more alcohol-related problems on days with greater use of SHR and SLD strategies (Lewis et al., 2015). This may be due to the fact that students may use SHR strategies as the opportunity to drink excessively. For example, a student may plan to drink to intoxication. So, in an effort to protect themselves from serious harm, they might preplan for a safe ride home (e.g., a sober friend or Uber service) and purpose to stay with the same group of friends for the night. It is possible that these strategies may protect them from drunk driving or the opportunity to be assaulted (physically/sexually), but these do not necessarily reduce the amount of alcohol being consumed.

Although SHR strategies were negatively associated with some negative consequences such as “did something you later regretted”, “forgot where you were/what you did”, “had unprotected sex”, “physically injured yourself”, and “got in trouble with police” the results for this study are somewhat inconsistent. Even though it is unclear whether SHR strategies are effective in reducing negative alcohol-related consequences, there may be some benefit in the protection of serious harm from drunk driving, trouble with police, or potential physical or sexual assault.

Contributions to the Field

The findings of this study indicated that there was a relationship between PBS use and the experience of negative alcohol-related consequences. Less frequent use of PBS is associated with a greater likelihood of experiencing negative consequences. Gender differences were found in PBS use and the experience of negative alcohol-related consequences, whereas females use more PBS than males and experience fewer negative alcohol-related consequences than their male counterparts. The most commonly used protective strategies among participants in this study were “eat before/during drinking”, “use a designated driver”, and “stay with the same group of friends”. These protective strategies seem to be easier to implement than other strategies that target the amount and rate of alcohol consumption, such as “avoid drinking games”, “pace drinks to one or fewer per hour”, and “alternate non-alcoholic with alcoholic beverages”. Notably, these are the same protective behaviors that participants report using the least. Furthermore, results from this study indicated that stopping/limiting drinking (SLD), manner of drinking (MOD), and serious harm reduction (SHR) strategies were associated with negative alcohol-related consequences; however, the most solid relationship was with

manner of drinking (MOD) strategies. This finding is important because health educators using PBS for intervention purposes should understand that certain PBS may be more beneficial and easier to implement than others. Based upon the findings of this study, health educators should also consider gender differences and student selection of protective strategies when planning promotion and education efforts to inform college students on PBS use.

Chapter VI

Summary, Conclusions, and Recommendations

Summary

Alcohol use and misuse on college campuses is commonplace. The excessive use of alcohol and the experience of negative alcohol-related consequences among college students is a public health concern. In an effort to reduce alcohol consumption and the occurrence of negative consequences, PBS emerged as a potential tool to aid students in safer and more responsible drinking practices. However, there was concern that not all PBS may be effective. Therefore, this study was designed to confirm the relationship between PBS and negative alcohol-related consequences. Specifically, the purpose of this study was to describe the relationship, if any, between protective behavioral strategy use and the experience of negative alcohol-related consequences as a result of alcohol consumption at a Midwestern university as measured by the American College Health Associations' National College Health Assessment – II and IIb.

The results of this study indicated that a relationship exists between PBS use and the experience of negative alcohol-related consequences, where less frequent use of PBS was related to a greater likelihood of experiencing negative consequences. The most common PBS used by the participants in this study were "eat before/during drinking", "use a designated driver", and "stay with the same group of friends the entire time while drinking". The least used PBS were "avoid drinking games", "pace drinks to one or fewer per hour", and "alternate non-alcoholic beverages with alcoholic beverages". The top negative alcohol-related consequences experienced by the participants in this study were "did something you later regretted", "forgot where you were/what you did", "had

unprotected sex", and "physically injured yourself". The least reported negative consequences were "had sex without giving consent/someone had sex with me without me consent", "had sex without getting consent/had sex with someone without their consent", and "seriously considered suicide". Gender differences were found in PBS use and the experience of negative alcohol-related consequences, where females used more PBS than males and reported experiencing fewer negative alcohol-related consequences. Being male increased the odds of experiencing the negative consequences "did something you later regretted", "forgot where you were/what you did", "got in trouble with police", "had unprotected sex", and "physically injured another person". Finally, PBS subscales SLD, MOD, and SHR were associated with negative alcohol-related consequences; however, the most solid relationship was with MOD strategies.

The findings in this study extend the growing body of literature that confirms the relationship between PBS and negative alcohol-related consequences. It appears that PBS use may be a useful tool in the reduction of negative consequences. However, the results of this study show that not all PBS are equally effective. It seems that MOD strategies may be more effective in reducing negative alcohol-related consequences than SLD and SHR strategies. The effectiveness of SLD and SHR strategies remain unclear. However, all PBS may be beneficial; therefore, health educators should continue to promote and educate college students on PBS use. Students' lack of MOD strategy use is an important finding and should be further investigated in future studies to determine the reason behind the lack or selection of certain PBS. Nonetheless, PBS is a promising technique that students can use to protect themselves from experiencing negative alcohol-related consequences.

Conclusions

Nine conclusions were made based on the results of this study. The conclusions are:

1. Students who use less PBS are more likely to experience negative alcohol-related consequences.
2. Some PBS may be easier to implement than others; therefore, health educators using PBS for intervention purposes should understand that some strategies may be easier to implement than others.
3. The most common PBS reported by college students were eat before/during drinking, use a designated driver, and stay with the same group of friends.
4. The least reported PBS used by college students were avoid drinking games, pace drinks to one or fewer per hour, and alternate non-alcoholic with alcoholic beverages.
5. The most common reported negative alcohol-related consequences experienced by college students were did something you later regretted, forgot where you were/what you did, had unprotected sex, and physically injured yourself.
6. The least reported negative alcohol-related consequences were seriously considered suicide, someone had sex with me without my consent, and had sex with someone without their consent.
7. Females report higher use of PBS and lower experience of negative alcohol-related consequences.
8. Male college students use PBS less frequently than female college students and exhibit a greater likelihood of experiencing negative alcohol-related consequences.

9. Overall, subscale PBS groups (SLD, MOD, and SHR) were related to negative alcohol-related consequences; however, the most solid relationship was with MOD strategies.

Recommendations

Based on the findings from this study, the following recommendations for future studies are:

1. Replicate this study using data from higher institutions of various kinds, sizes, and geographical locations using the NCHA.
2. Replicate this study using national NCHA data.
3. Examine the intention to utilize PBS using the Theory of Planned Behavior.
4. Investigate the reason behind the selection of certain PBS.
5. Examine the relationship between alcohol consumption and negative alcohol-related consequences.

References

Abbey, A., McAuslan, P., & Ross, L.T. (1998). Sexual assault perpetration by college men: The role of alcohol, misperception of sexual intent, and sexual beliefs and experiences. *Journal of Social and Clinical Psychology, 17*, 167-195. doi:10.1521/jscp.1998.17.2.167

Abbey, A. (2002). Alcohol-related sexual assault: A common problem among college students. *Journal of Studies on Alcohol, Suppl.14,* 118-128. Retrieved from https://www-jsad-com.www2.lib.ku.edu/doi/pdf/10.15288/jsas.2002.s14.118

American College Health Association. (n.d.). Generalizability, reliability, and validity analysis. Retrieved from https://www.acha.org/NCHA/About_ACHA_NCHA/Generalizability__Reliability__and_Validity_Analysis/NCHA/About/Generalizability__Reliability__and_Validity_Analysis.aspx?hkey=0d3e8e2b-561a-43da-a004-b3f4901c6956

Araas, T.E. & Adams, T.B. (2008). Protective behavioral strategies and negative alcohol-related consequences in college students. *Journal of Drug Education, 38*, 211-224. Retrieved from https://doi.org/10.2190%2FDE.38.3.b

Arterberry, B.J., Smith, A.E., Martens, M.P., Cadigan, J.M., & Murphy, J.G. (2014). Protective behavioral strategies, social norms, and alcohol-related outcomes. *Addiction Research and Theory, 22*, 279-285.doi:10.3109/16066359.2013.838226

Barry, A., Madson, M., Moorer, K., & Christman, K. (2016). Predicting use of protective behavioral strategies: Does fraternity/sorority affiliation matter? *Journal of Student Affairs Research and Practice, 53*, 294-304. doi:10.1080/19496591.2016.1165107

Benton, S.L., Benton, S.A., & Downey, R.G. (2006). College student drinking attitudes toward risks and drinking consequences. *Journal of Studies on Alcohol, 67*, 543-551. doi: 10.15288/jsa.2006.67.543

Benton, S.L., Schmidt, J.L., Newton, F.B., Shin, K., Benton, S.A., & Newton, D.W. (2004). College student protective strategies and drinking consequences. *Journal of Studies on Alcohol, 65*, 115-121. doi: 10.15288/jsa.2004.65.115

Boekeloo, B.O., Novik, M.G., & Bush, E. (2011). Drinking to get drunk among incoming freshmen college students. *American Journal of Health Education, 42*, 88-95. doi: 10.1080/19325037.2011.10599176

Borden, L.A., Martens, M.P., McBride, M.A., Sheline, K.T., Bloch, K.K., & Dude, K. (2011). The role of college students' use of protective behavioral strategies in the relation between binge drinking and alcohol-related problems. *Psychology of Addictive Behaviors, 25*, 346-351. doi: 10.1037/a0022678

Cox, D.R. (1958). The regression analysis of binary sequences (with discussion). *Journal of the Royal Statistical Society: Series B, 20*(2), 215-242.

Delva, J., Smith, M.P., Howell, R.L., Harrison, D.F., Wilke, D., & Jackson, D.L. (2004). A study of the relationship between protective behaviors and drinking consequences among undergraduate college students. *Journal of American College Health, 53,* 19-26. doi: 10.3200/JACH.53.1.19-27

DeMartini, K.S., Palmer, R.S., Leeman, R.F., Corbin, W.R., Toll, B.A., Fucito, L.M. (2013). Drinking less and drinking smarter: Direct and indirect protective strategies in young adults. *Psychology of Addictive Behaviors, 29,* 615-626. doi: 10.1037/a0030475

Douglas, K.A., Collins, J.L., Warren, C., Kann, L., Gold, R., Clayton, S…Kolbe, L.J. (1997). Results from the 1995 National College Health Risk Behavior Survey. *Journal of American College Health, 46,* 55–66. doi:10.1080/07448489709595589

Fisher, B., Turner, Michael G, Cullen, Francis T, & National Institute of Justice. (2000). *The sexual victimization of college women*. U.S. Dept. of Justice, Office of Justice Programs, National Institute of Justice. Retrieved from https://hdl.handle.net/2027/mdp.39015050002180?urlappend=%3Bseq=1

Frank, C., Thake, J., & Davis, C.G. (2012). Assessing the protective value of protective behavioral strategies. *Journal of Studies on Alcohol and Drugs, 73*, 839-843. doi:10.15288/jsad.2012.73.839

Haines, M.P., Barker, G., & Rice, R.M. (2006). The personal protective behaviors of college student drinkers: Evidence of indigenous protective norms. *Journal of American College Health, 55*, 69-75. doi:10.3200/JACH.55.2.69-76

Haas, A. L., Smith, S. K., Kagan, K., & Jacob, T. (2012). Pre-college pregaming: Practices, risk factors, and relationship to other indices of problematic drinking during the transition from high school to college. *Psychology of Addictive Behaviors, 26*(4), 931-938. doi:10.1037/a0029765

Hingson, R. Heeren, T., Winter, M.R., & Wechsler, H. (2003a). Early age of first drunkenness as a factor in college students' unplanned and unprotected sex attributable to drinking. *Pediatrics, 111*, 34-41. doi: 10.1542/peds.111.1.34

Hingson, R., Heeren, T., Winter, M., & Wechsler, H. (2005). Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18-24: changes rom 1998 to 2001. *Annual Review of Public Health, 26,* 259-279. Retrieved from https://doi-org.www2.lib.ku.edu/10.1146/annurev.publhealth.26.021304.144652

Hingson, R., Heeren, T., Zakocs, R., Kopstein, A., & Wechsler, H. (2002). Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18-24. *Journal of Studies on Alcohol, 63,* 136-144. doi: 10.15288/jsa.2002.63.136

Hingson, R. Heeren, T., Zakocs, R., Winter, M., & Wechsler, H. (2003b). Age of first intoxication, heavy drinking, driving after drinking and risk of unintentional injury among U.S. college students. *Journal of Studies on Alcohol, 64,* 23-31. Retrieved from https://doi-org.www2.lib.ku.edu/10.15288/jsa.2003.64.23

Hingson, R. Zha, W., & Smyth, D. (2017). Magnitude and trends in heavy episodic drinking, alcohol-impaired driving, and alcohol-related mortality and overdose hospitalizations among emerging adults of college ages 18-24 in the United States, 1998-2014. *Journal of Studies on Alcohol and Drugs, 78,* 540-548. Retrieved from https://doi-org.www2.lib.ku.edu/10.15288/jsad.2017.78.540

Hingson, R.W., Zha, W., & Weitzman, E.R., (2009). Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18-24, 1998-2005. *Journal of Studies on Alcohol and Drugs, 70*(4), S12+. Retrieved from http://link.galegroup.com.www2.lib.ku.edu/apps/doc/A203134682/EAIM?u=ksstate_ukans&sid=EAIM&xid=636f73c1

Holm, S. (1979). A simple sequentially rejective multiple test procedure. *Scandinavian Journal of Statistics, 6*(2), 65-70.

Howard, D.E., Griffin, M., Boekeloo, B., Lake, K., & Bellows, D. (2007). Staying safe while consuming alcohol: A qualitative study of the protective strategies and informational needs of college freshman. *Journal of American College Health, 56,* 247-254. doi: 10.3200/JACH.56.3.247-254

Howard, D.E., Griffin, M.A., & Boekeloo, B.O. (2008). Prevalence and psychosocial correlates of alcohol-related sexual assault among university students. *Adolescence, 43,* 733-750. Retrieved from http://www2.lib.ku.edu/login?url=https://searchproquestcom.www2.lib.ku.edu/docview/195939374?accountid=14556

Kenney, S.R., & Labrie, J.W. (2013). Use of protective behavioral strategies and reduced alcohol risk: Examining the moderating effects of mental health, gender, and race. *Psychology of Addictive Behaviors, 27,* 997-1009. doi:10.1037/a0033262

LaBrie, J.W., Lac, A., Kenney, S.R., & Mirza, T. (2011). Protective behavioral strategies mediate the effect of drinking motives on alcohol use among heavy drinking college students: Gender and race differences. *Addictive Behaviors, 36,* 354-361. doi: 10.1016/j.addbeh.2010.12.013

Lewis, M.A., Sheng, E., Geisner, I.M., Rhew, I.C., Patrick, M.E., & Lee, C.M. (2015). Friend or foe: Personal use and friends' use of protective behavioral strategies and spring break drinking. *Addictive Behaviors, 50,* 96-101. doi: 10.1016/j.addbeh.2015.06.029

McMillan, J.H., & Schumacher, S. (2010). *Research in education: Evidence-based inquiry* (7th ed.). Upper Saddle River, New Jersey: Pearson.

Martens, M.P., Ferrier, A.G., Sheehy, M.J., Corbett, K., Anderson, D.A., & Simmons, A. (2005). Development of the Protective Behavioral Strategies Survey. *Journal of Studies on Alcohol, 66,* 698-705. doi: 10.15288/jsa.2005.66.698

Martens, M.P., Taylor, K.K., Damann, K.M., Page, J.C., Mowry, E.S., & Cimini, M.D. (2004). Protective behavioral strategies when drinking alcohol and their relationship to negative alcohol-related consequences in college students. *Psychology of Addictive Behaviors, 18,* 390-393. doi: 10.1037/0893-1 64X.18.4.390

Martens, M.P., Martin, J.L., Littlefield, A.K., Murphy, J.G., & Cimini, M.D. (2011). Changes in protective behavioral strategies and alcohol use among college students. *Drug and Alcohol Dependence, 118,* 504-507. doi: 10.1016/j.drugalcdep.2011.04.020

Merrill, J.E. & Carey, K.B. (2016). Drinking over the lifespan: Focus on college ages. *Alcohol Research: Current Reviews, 38,* 103-114. Retrieved from http://www.2.lib.ku.edu/login?URL=http://search.ebscohost.com.www.2lib.ku.edu/login.aspx?diret=true&db=aph&AN=115170587&site=ehost-live

Nguyen, N. Walters, S.T., Wyatt, T.M., & Dejong, W. (2011). Use and correlates of protective drinking behaviors during the transitions to college: Analysis of a national sample. *Addictive Behaviors, 36,* 1008-1014. doi: 10.1016/j.addbeh.2011.06.002

O'Brien, M.C., McCoy, T.P., Champion, H., Mitra, A., Robbins, A., Teuschlser, H. (2006). Single question about drunkenness to detect college students at risk for injury. *Academic Emergency Medicine, 13,* 629-636. doi: 10.1197/j.aem.2005.12.023

O'Malley, P.M. & Johnston, L.D. (2002). Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol, (S14),* 23-39. Supplement. doi:10.15288/jsas.2002.s14.23

Park, C.L. & Grant, C. (2005). Determinants of positive and negative consequences of alcohol consumption in college students: Alcohol use, gender, and psychological characteristics. *Addictive Behaviors, 30,* 755-765. doi:10.1016/j.addbeh.2004.08.021

Parks, K. & Fals-Stewart, W. (2004). The temporal relationship between college women's alcohol consumption and victimization experiences. Alcoholism: Clinical and Experimental Research, 28, 625-629. doi: 10.1097/01.ALC.0000122105.56109.70

Palmer, R.S., McMahon, T.J., Rounsaville, B.J., & Ball, S.A. (2010). Coercive sexual experiences, protective behavioral strategies, alcohol expectancies and consumption among male and female college students. *Journal of Interpersonal Violence, 25,* 1563-1578. doi: 10.1177/0886260509354581

Patrick, M.E., Lee, C.M., & Larimer, M.E. (2011). Drinking motives, protective behavioral strategies, and experienced consequences: Identifying students at risk. *Addictive Behaviors, 36,* 270-273. doi: 10.1016/j.addbeh.2010.11.007

Pearson, M.R. (2013). Use of alcohol protective behavioral strategies among college students: A critical review. *Clinical Psychology Review, 33,* 1025-1040. doi: 10.1016/j.cpr.2013.08.006

Powell, L.M., Williams, J., & Wechsler, H. (2004). Study habits and the level of alcohol use among college students. *Education Economics, 12,* 135-149. doi: 10.1080/0964529042000239159

Substance Abuse and Mental Health Services Administration (SAMHSA). 2015 National Survey on Drug Use and Health (NSDUH). Table 6.8B4 – Tobacco Product and Alcohol Use in Past Month among Persons Aged 18 to 22, by College Enrollment Status: Percentages, 2014 and 2015. Available at: https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015.htm#table-84b.

Sugarman, D.E. & Carey, K.B. (2007). The relationship between drinking control strategies and college student alcohol use. *Psychology of Addictive Behaviors, 21*, 338-345. doi: 10.1037/0893-164X.21.3.338

Suftin, E.L., Light, L.S., Wagoner, K.G., McCoy, T.P., Thompson, M.P., & Rhodes, S.D. (2009). Protective behaviors and high-risk drinking among entering freshmen. *American Journal of Health Behavior, 33,* 610-619. doi: 10.5993/AJHB.33.5.14

Walters, S.T., Roudsari, B.S., Vader, A.M., & Harris, T.R. (2007). Correlates of protective behavior utilization among heavy-drinking college students. *Addictive Behaviors, 32,* 2633-2644. doi: 10.1016/j.addbeh.2007.06.022

Wechsler, H., Dowdall, G.W., Maenner, G., Gledhill-Hoyt, J., & Lee, H. (1998). Changes in binge drinking and related problems among American college students between 1993 and 1997 results of the Harvard School of Public Health College Alcohol

Study. *Journal of American College Health, 47,* 57-68. doi: 10.1080/07448489809595621

Wechsler, H., Lee, J.E., Kuo, M., & Lee, H. (2000). College binge drinking in the 1990s: A continuing problem. Results of the Harvard School of Public Health 1999 College Alcohol Survey. *Journal of American College Health, 48,* 199-210. doi: 10.1080/07448480009599305

Wechsler, H., Lee, J.E., Kuo, M., Seibring, M., Nelson, T.F., & Lee, H. (2002). Trends in college binge drinking during a period of increased prevention efforts: Findings from 4 Harvard School of Public Health College Alcohol Study surveys: 1993-2001. *Journal of American College Health, 50,* 203-217. doi: 10.1080/07448480209595713

Wechsler, H. Lee, J.E., Nelson, T.F., & Lee, H. (2003). Drinking and driving among college students: The influence of alcohol-control policies. *American Journal of Preventive Medicine, 25,* 212-218. doi: 10.1016/S0749-3797(03)00199-5

Wechsler, H. & Nelson, T.F. (2008). What we have learned from the Harvard School of Public Health College Alcohol Study: Focusing attention on college student alcohol consumption and the environmental conditions that promote it. *Journal of Studies on Alcohol and Drugs, 69,* 481-490. doi: 10.15288/jsad.2008.69.481

Weitzman, E.R., Nelson, T.F., & Wechsler, H. (2003). Taking up binge drinking in college: The influences of person, social group, and environment. *Journal of Adolescent Health, 32,* 26-35. doi: 10.1016/S1054-139X(02)00457-3

Werch, C.E. (1990). Behavioral self-control strategies for deliberately limiting drinking among college students. *Addictive Behaviors, 15,* 199-128. doi: 10.1016/0306-4603(90)90015-P

Werch, C.E., & Gorman, D.R. (1988). Relationship between self-control and alcohol consumption patterns and problems of college students. *Journal of Studies on Alcohol, 49,* 30-37. doi: 10.15288/jsa.1988.49.30

White, A. (2003). What Happened? Alcohol, memory blackouts, and the brain. *Alcohol Research and Health, 27*, 186-96. Retrieved from http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=5cae7flc-8ba9-4abe-82c6-b07652a8cecd%40sessionmgr4007

White, A., & Hingson, R. (2013). The burden of alcohol use: Excessive alcohol consumption and related consequences among college students. *Alcohol Research: Current Reviews, 35*(2), 201-18. Retrieved from http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=b27cb025-b065-4495-b35d-fe7b5790c373%40pdc-v-sessmgr05

White, A.M., Signer, M.L., Kraus, C.L., & Swartzwelder, H.S. (2004). Experiential aspects of alcohol-induced blackouts among college students. *The American Journal of Drug and Alcohol Abuse,30*, 205-224, doi: 10.1081/ADA-120029874

Yusko, Buckman, White, & Pandina. (2008). Risk for excessive alcohol use and drinking-related problems in college student athletes. *Addictive Behaviors, 33*(12), 1546-1556. doi: 10.1016/j.addbeh.2008.07.010

Zamboanga, B.L., Pearce, M.W., Kenney, S.R., Ham, L.S., Woods, O.E., & Borsari, B. (2013). Are extreme consumption games drinking games? Sometimes it's a matter of perspective. *The American Journal of Drug and Alcohol Abuse, 39(5),* 275-279. doi: 10.3109/00952990.2013.827202

Appendix A: HSC Application for Project Approval

6/2010 HSCL #_____
(to be assigned)

UNIVERSITY OF KANSAS
Human Subjects Committee Lawrence
Application for Project Approval

1. Name of Investigator(s) Heidi Garcia
2. Department Affiliation Student Health Services
3. Campus or Home Mailing Address: 1200 Schwegler Dr Lawrence, KS 66045
   a. Email address: hmgarcia@ku.edu
   Phone Number(s): (a) Campus: 4.9752 (b) Home 785.542.1069
5. Name of Faculty Member Responsible for Project: NA

HSCL must receive faculty approval via email notification or hard copy signature before a student application may be processed.

   a. Email address of Faculty Member: NA
6. Type of investigator and nature of activity. (Check appropriate categories)
   ☒ Faculty or staff of University of Kansas
   ☐ Project to be submitted for extramural funding; Agency:_____
   KU/KUCR project number:_____

(HSCL must compare all protocols in grant applications with the protocols in the corresponding HSCL application)

   ☐ Project to be submitted for intramural funding; Source: _____
   ☐ Project unfunded
   ☐ Other: _____
   ☐ Student at University of Kansas: ☐ Graduate ☐ Undergraduate ☐ Special
   ☐ Class project (number & title of class): _____
   ☐ Independent study (name of faculty supervisor): _____
   ☐ Other (please explain): _____
   ☐ Investigators not from the Lawrence campus but using subjects obtained through the University of Kansas
   Activity to be registered with clinical trials.gov (when registered, notify HSCL of registration number)

7.a. Title of investigation:

National College Health Assessment

7.b. Title of sponsored project, if different from above:

8. Individuals other than faculty, staff, or students at Kansas University.
   Please identify investigators and research group:

9. Certifications: By submitting this application via email or hard copy I am certifying that I have read, understand, and will comply with the policies and procedures of the University of Kansas regarding human subjects in research. I subscribe to the standards and will adhere to the policies and procedures of the HSCL, and I am familiar with the published guidelines for the ethical treatment of subjects associated with my particular field of study. I also certify that I have verified and disclosed any potential conflict of interest between myself and/or my team members and the project sponsor (if applicable). **Type or write name(s) in the signature lines below depending on your electronic or hard copy submission.**

Date: 11/28/	Date: _____
Signature: Heidi Garcia	Signature: _____
First Investigator	Faculty Supervisor
Date: 11/28/	Date: _____
Signature: Jenny Donham	Signature: _____
Second Investigator	Third Investigator

First Investigator: Heidi Garcia

Project Title: National College Health Assessment

10. Please answer "Yes" or "No" for the following questions about the proposed research activity. (Provide details about questions checked "Yes" on the last page of the application.)

Does the research involve:

No a. drugs or other controlled substances?

No b. payment of subjects for participation?

No c. access to subjects through a cooperating institution (other than KU)?

No d. substances taken internally by or applied externally to the subjects?

No e. mechanical or electrical devices (e.g., electrodes) applied to the subjects?

No f. collection of fluids (e.g., blood, urine, etc.) or tissues from subjects or exposure of subjects to hazardous materials (chemical, biological, radiation, etc.)?
Environment Health & Safety (EHS) Approval number (required):

Yes g. subjects experiencing stress (physiological or psychological)?

No h. omission of information concerning any aspect of purposes or procedures (misleading or withheld information)?

No i. deception of subjects (active misinformation or false feedback provided)?

No j. subjects who could be judged to have limited freedom of consent (e.g., minors, developmentally delayed persons, or those institutionalized)?

No k. any procedure or activities that might place the subjects at risk (psychological, physical, or social)?

Yes l. use of ☐ participant observation ☐interviews, ☐focus groups, ☒questionnaires, ☐audio or ☐video recordings? (check all that apply)

No m. data collection over a period greater than one year?

Yes n. indicate the consent procedure(s) to be used ☐signed, ☐oral, ☒information statement, ☐ parent/guardian, assent procedure for minors or the cognitively impaired (Check all that apply) Note: HSCL makes the final determination on waiver of a signed consent form or consent. Justification must be provided for waiver of signed consent form or consent.

Yes o. indicate the type of data you will be acquiring in this project ☒ private health information ☐academic records, ☐ social security information, ☐ KU ID number

No p. other data that may increase participant risk (46.101 (b) (2) (ii) in the areas listed ☐ criminal ☐ civil, ☐ financial, ☐ employment, ☐ reputation

11. If any of the key personnel or research team members of this project have a financial interest* in a project sponsor or a provider of goods or services to the project, the individual and the relationship must be disclosed.

☒ Neither I nor any member of the research team has a financial interest in the project sponsor or a provider of goods or services to this project.

☐ I am disclosing the following financial interest(s)** :

Name of Individual	Role on Project	Financial Interest Entity

* An individual's financial interests include those of the individual, his or her spouse, dependent children, and other members of the personal household (i.e., ownership, compensation received or anticipated, a position of officer or director, or receipt of fees or commissions).

** If this financial interest has not already been disclosed on a Conflict of Interest report, an ad hoc disclosure via the Conflict of Interest reporting form may also be required. Direct inquiries to coi@ku.edu. COI resource information is also available at the following link: http://www.rcr.ku.edu/coi/index.shtml

Additional COI Notes:

Complete the following questions on this page. Please do not use continuation sheets.

12. Approximate number of subjects to be involved in the research: 1,500 KU Students

13. Project Purpose(s):

To assess the health-related attitudes, perceptions and behaviors of students at the University of Kansas; allowing for proper prevention education action to be taken. Topics include, overall health, alcohol, other drugs, cigarettes, sexual health, nutrition, and physical activity. These issues affect student life and academic success and need to be addressed. Anticipated health improvements include fewer academic impediments due to excessive alcohol use, a decrease in prevalence of binge drinking, a reduction in drinking and driving, and demonstrated knowledge and practice of reliable birth control

14. Describe the proposed subjects (age, sex, race, or other special characteristics). If there is a physical or mental health condition that characterizes the subjects to be included in the study, please indicate this here as well.

The sample of students will be evenly distributed based on the University of Kansas's population according to gender, level in school, race, and age (only students over the age of 18 will be invited to participate). Per the ACHA's recommendation, 1,500 surveys will be distributed in order to receive an accurate representation of the University of Kansas, Lawrence Campus population. This number takes into account an imperfect return rate of the surveys.

15. Describe how the subjects are to be selected. Please indicate how you will gain access to, and recruit these subjects for participation in the project. That is, will you recruit participants through word-of-mouth, fliers or poster, newspaper ads, public or private membership or employee lists, etc. Drawings/raffles are not permitted for payment or recruiting. (If subjects are to be recruited from a cooperating institution, such as a clinic or other service organization be aware that subjects' names and other private information, such as medical diagnosis, may not be obtained without the subjects' written permission.)

By working with the Office of Institutional Research and Planning (OIRP), courses and participants will be identified and selected at random to achieve the sample size and demographics necessary. The ORIP historically has created an interactive spreadsheet to facilitate the process of class selection. Permission will need to be grated from the professors and instructors selected to gain access to the classes for the 30 minutes needed to complete the assessment. All steps necessary to ensure confidentiality of participants and their responses will be of the utmost importance in order to illicit the most accurate information.

16. Abstract of the proposed procedures in the project. You are limited to the rest of this page. (The abstract should be a succinct overview of the project without jargon, unexplained abbreviations, or technical terminology. Here is where you must provide details about Yes answers to items under question 10.a through 10.p of the application: drugs, cooperating institutions, medical information requested, security measures and post-project plans for tapes, questionnaires, surveys, and other data, and detailed debriefing procedures for deception projects.)

Addressing question 10g ("experiencing stress (physiological or psychological)") and 10o (inquiring what kind of data for this project (private health information)): the nature of some of the questions is sensitive, especially those questions concerning the individual's sexual history, or unpleasant situations relating to their physical or their physical or mental health. Some students may experience anxiety when reporting the use of illegal substances. It is important that the students be reassured of their confidentiality. The objective of administering the NCHA is to collect a fifth sampling of students' behaviors and attitudes concerning health-related topics. The assessment is a national research survey organized by the American College Health Association and is the largest known comprehensive data set on the health of college students. The three previous samplings were collected through the NCHA in spring 2003, 2006, 2009, and 2011. The NCHA consists of 65 questions that explore the following seven topics: health, health education and safety, alcohol, tobacco and drugs, sexual behaviors, perceptions, and contraception, weight, nutrition and exercise, mental and physical health, impediments, to academic performance, and demographic characteristics. The questions address areas that directly relate to the students' ability to have a successful college career and how health issues affect academic performance. To achieve this objective, the OIRP will assist in the random selection of the population sample especially to ensure students surveyed will be evenly distributed based on gender, level in school, race, and age according to the KU Lawrence Campus population. Per the ACHA's recommendation, 1500 surveys will be distributed in order to receive an accurate representation. This number takes into account an imperfect return rate. All steps necessary to ensure confidentiality of participants and their responses will be of the utmost importance in order to illicit the most accurate information. All surveys will be administered in paper form in the classroom setting by staff of the Health Education Resource Office (HERO). An Information Statement will be given to students concurrently as the survey. Completed surveys will be submitted to the ACHA for tabulation. The results from our institution along with the results for a National Reference Group and a User's Manual to assist in the interpretation of the results, will be returned upon tabulation completion. The HERO staff will then be responsible for interpretation of data, sharing results with the appropriate offices on and off campus, and utilizing the data. Possible outcomes being: determination of priority health issues among the student population, the measuring of progress and effectiveness of prevention strategies, the creation of individual reports, information campaigns, and research projects to educate both campus and community partners, to identify the students' perceptions about peer behavior and students' level of self-knowledge about health protection practices, and to assess the impact of health and behavior factors on academic performance.

Submit one complete application and supporting documents with your application. Supporting documents may include consent forms, information statement, oral consent procedures, assent procedures, questionnaires/surveys/research measures, advertisements recruiting participants (e.g. flyers, classified ads, debriefing procedures). You may send all materials via email attachment to mdenning@ku.edu; Campus Mail to HSCL, Youngberg Hall; or U.S. Mail to HSCL, Youngberg Hall, 2385 Irving Hill Road, Lawrence, KS 66045-7568.

Appendix B: Request for Project-Specific Principal Investigator Status

KU THE UNIVERSITY OF KANSAS
Student Success

Student Health Services

December 17, 2010

Associate Vice Provost for Research and Graduate Studies
KU Center for Research
Youngberg Hall
2385 Irving Hill Road
Lawrence, KS 66045-7563

Associate Vice Provost:

This letter serves as a request for Project-Specific Principal Investigator Status for Heidi M. Garcia. The project proposal is the administration of the National College Health Assessment (NCHA), provided by the American College Health Association, to KU students in 2011.

Ms. Garcia is the Manager of the Health Education Resource Office within Student Health Services at the University of Kansas. In this position, she oversees 3.5 FTE positions, 5 student positions, interns and volunteers. Her primary area of expertise within health education is alcohol prevention and programming. In addition to her administrative duties, she is responsible for disseminating and utilizing data provided by the previous NCHA surveys administered to KU students.

Ms. Garcia is also a member of a community coalition, New Tradition, addressing underage drinking within Douglas County. The coalition's goals include, but are not limited to, reducing underage drinking, increasing the age of initiation of alcohol use, and providing community resources for students and parents. SAMHSA's Strategic Prevention Framework will be employed for assessment, capacity-building, planning, implementation, and evaluation.

I believe Ms. Garcia is well suited to serve as Principal Investigator for this proposal based on her current job requirements and experience in alcohol education. As Director of Student Health Services, I agree to support and house the NCHA project. Please review her attached curriculum vita for further details about her accomplishments and credentials to serve as Principal Investigator on this project.

Thank you for considering this request for Project-Specific Principal Investigator Status. Please contact me with any questions or concerns at 864-9525.

Sincerely,

Carol Seager

Carol Seager
Director

Watkins Memorial Health Center | 1200 Schwegler Drive | Lawrence, KS 66045-7559 | (785) 864-9500 | www.studenthealth.ku.edu

Heidi M. Garcia
806 East 14th Terrace
Eudora, Kansas 66025
(785) 542-1069

Personal: Date of Birth – 10/08/1972
Married with three children, ages 19, 12, and 9

Employment: University of Kansas
Student Health Services
Health Education Resource Office
1200 Schwegler Drive
Lawrence, Kansas 66045
(785) 864-9752
Program Director
March 2007 – Present

DCCCA, Inc.
Regional Prevention Center
3312 Clinton Parkway
Lawrence, Kansas 66047
(785) 841-4138
Prevention Specialist
July 2004 – March 2007

Education: University of Kansas
Lawrence, Kansas
Masters of Science in Education
Community Health Education
July 2004

University of Kansas
Lawrence, Kansas
Bachelors of Science in Education
Community Health Education
May 1996

Accomplishments:

Certified as a facilitator for Kansas Baseline, a program to increase awareness of the impact of alcohol, tobacco and other drugs (ATOD) on the individual, family, school and community, through Prevention and Recovery Services in Topeka, Kansas.

Certified as a presenter for *Crank It Up*, a community methamphetamine prevention training, through the Kansas Methamphetamine Prevention Project in Topeka, Kansas.

Certified as a Mental Health First Aid responder through Bert Nash Mental Health Center in Lawrence, KS.

Member of the Red Ribbon State Planning Committee since 2004.

KU RESEARCH & GRADUATE STUDIES
The University of Kansas

December 18, 2012

Carol Seager, Director
Student Health Services
Campus Mail

Dear Ms. Seager:

I have received your request to grant Heidi Garcia *Project-Specific* PI status for her proposal to administer the National College Health Assessment (NCHA), provided by the American College Health Association, to KU students in 2013.

I approve the request for *Project-Specific* PI status for Ms. Garcia and wish her success with this project.

Sincerely,

Rodolfo H. Torres
Associate Vice Chancellor

RHT:tak

cc: Joanne Altieri, Director, Research Administration
Heidi Garcia, Student Health Services

Office of the Vice Chancellor
Youngberg Hall | 2385 Irving Hill Road | Lawrence, KS 66045-7568 | (785) 864-7298 | Fax (785) 864-5272 | www.rgs.ku.edu

Appendix C: Request to AGC to Conduct Online/Web-Based Survey

From: **Rolf, Rachel** rrolf@ku.edu
Subject: Re: Inquiry
Date: March 12, 2015 at 3:33 PM
To: McKee, Jenny jemckee@ku.edu
Cc: Leitch, Michael mleitch@ku.edu

RR

Jenny,

Based upon the facts you've presented, I have no concerns with your moving forward.

Rachel

Sent from my iPad

On Mar 12, 2015, at 3:31 PM, McKee, Jenny <jemckee@ku.edu> wrote:

> Sorry to bug you both about this; I'd like to be able to get this info clarified so that I can resubmit our application with IRB tomorrow.
> Thanks!
> Jenny
>
> Jenny E. McKee, M.S.Ed
> Health Educator/Grant Coordinator
>
> ---
>
> **From:** McKee, Jenny
> **Sent:** Wednesday, March 11, 2015 8:50 AM
> **To:** Leitch, Michael; Rolf, Rachel
> **Subject:** Inquiry
>
> Mike & Rachel,
> I am working with Theresa Brown and Paul Klute on preparing for our National College Health Assessment research period. Every two years we do the survey with students to get insight on our students' health knowledge, behavior, and perceptions. In years past we have gone from classroom to classroom collecting approximately 1,500 respondents. This year we are going to try to do it via email. To encourage responses, we are offering a drawing for anyone, whether they complete the survey or not. The items we are putting up for drawings are a bean bag chair, an iPad 4, and massages for 15 individuals.
> I have received a go from both Theresa Brown of VPSA and Paul Klute with OIRP that we are correctly going about this but need a 'blessing' from GC before we can go any further with KCUR's eCompliance process.
> Thank you,
> Jenny
>
> In health & community,
>
> Jenny E. McKee, M.S.Ed
> Health Educator/Grant Coordinator
>
> Student Health Services
> 1200 Schwegler Drive
> Lawrence, KS 66045
> 785.864.9572 p
> 785.864.9596 f

Appendix D: HSC Project Approval Letter

KU RESEARCH & GRADUATE STUDIES
The University of Kansas

1/12/2011
HSCL #19118

Heidi Garcia
1200 Schwegler Drive
Lawrence, KS 66045

The Human Subjects Committee, Lawrence Campus (HSCL) has received your response to its expedited review of your research project

19118 Garcia (STUDENT HEALTH SERV) National College Health Assessment

and approved this project under the expedited procedure provided in 45 CFR 46.110 (f) (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Since your research presents no risk to participants and involves no procedures for which written consent is normally required outside of the research context HSCL may waive the requirement for a signed consent form (45 CFR 46.117 (c) (2). Your information statement meets HSCL requirements. The Office for Human Research Protections requires that your information statement must include the note of HSCL approval and expiration date, which has been entered on the form sent back to you with this approval.

1. At designated intervals until the project is completed, a Project Status Report must be returned to the HSCL office.
2. Any significant change in the experimental procedure as described should be reviewed by this Committee prior to altering the project.
3. Notify HSCL about any new investigators not named in original application. Note that new investigators must take the online tutorial at http://www.rcr.ku.edu/hscl/hsp_tutorial/000.shtml.
4. Any injury to a subject because of the research procedure must be reported to the Committee immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform HSCL when this project is terminated. You must also provide HSCL with an annual status report to maintain HSCL approval. Unless renewed, approval lapses one year after approval date. If your project receives funding which requests an annual update approval, you must request this from HSCL one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,
Mary Denning
Mary Denning
Coordinator
Human Subjects Committee Lawrence

Human Subjects Committee Lawrence
Youngberg Hall | 2385 Irving Hill Road | Lawrence, KS 66045 | (785) 864-7429 | Fax (785) 864-5049 | www.rcr.ku.edu/hscl

Appendix E: Request for Participation in the NCHA

TO: [Faculty Member]

FROM: Barbara Romzek, Interim Sr. Vice Provost for Academic Affairs
Heidi Garcia, Health Education Resource Office Manager, Student Health Services

SUBJECT: National College Health Assessment - Spring 2011

Dear [Faculty Member],

KU is one of many colleges and universities across the nation that participates in the National College Health Assessment, the largest comprehensive survey on the health of college students. This nationally recognized research survey is a component of the American College Health Association and is comprised of questions to assist in collecting precise data about our students' health habits, behaviors, and perceptions within a broad range of topics. The data obtained are essential for the creation and evaluation of campus programs that promote health and student success – both in and out of the classroom.

A sample of classes from across the Lawrence campus has been selected to closely represent the overall KU student population by gender, level, and school. The students in your class listed below have been selected to help achieve this balance.

Course:
Time:
Days:
Place:

With your permission, Student Health Services plans to administer the survey during a regularly scheduled class period. We hope that you will be able to schedule approximately 40 minutes during a class period in April to allow your students the opportunity to complete this survey.

We know this is a significant disruption and appreciate your understanding. Snack bars will be provided during the class period in which the survey occurs in appreciation of your participation. Thank you in advance for your help in this important endeavor.

We are sending this request out at ths time of the semester so that, if you chosoe to cooperate, you can anticipate this block of time in your course planning. Please reply to this email by Friday, Janury 29th with the best day and time in April for the survey to be administered in your class. You will receive an email confirmation of the scheduled day.

Again, thank you for your support! If you have any questions, please feel free to contact _____

Appendix F: HSC Notification of Not Human Research Determination

From: **Univ of Kansas - Conflict of Interest Reporting System** kucoisys@ku.edu
Subject: STUDY00002269 is not human research
Date: March 19, 2015 at 1:29 PM
To: McKee, Jenny jemckee@ku.edu

Template:IRB_T_Post-Review_NotHumanResearch

Notification of Not Human Research Determination

To:	Jenny McKee
Link:	STUDY00002269
P.I.:	Heidi Garcia
Title:	National College Health Assessment
Description:	The committee reviewed this submission and assigned a determination of Not Human Research. For additional details, click on the link above to access the project workspace.

eCompliance : Conflict of Interest and Human Subjects Research
KU Lawrence and Edwards campuses
KU Medical Center, Kansas City □ KU School of Medicine, Wichita
Contact Information for each Campus

Appendix G: Application for IRB Project Approval

KU THE UNIVERSITY OF KANSAS Research

Human Research Protection Program

Protocol for Previously Collected Data or Specimens

STUDY TEAM INFORMATION	
Project Title	The Relationship Between Protective Behavioral Strategies and Negative Alcohol-Related Consequences
Investigator Name	Jennifer Bechard
Faculty Supervisor (Students Only)	J. Leon Greene, Ph.D.

This form must be used to submit an application through eCompliance system. **No other methods of submission will be accepted.**

Students and faculty supervisors: Faculty supervisors must complete an ancillary review in eCompliance to document faculty supervisor approval. Please see the guidance on ancillary reviews for more information.

For faster processing, ensure all study staff have completed the required human research training available on the IRB website.

This protocol should only be used for retrospective analysis of existing data or specimens. The IRB staff may ask you to complete the full IRB protocol if your project includes procedures outside of retrospective analysis.

Contact irb@ku.edu with questions!

1. PROJECT INFORMATION

1.1 Expected Project Time Period

From: February 2019
To: June 2019

1.2 Explain how many data records or specimens you expect to analyze.

This study will analyze secondary data of the National College Health Assessment (NCHA) – II and IIb – results obtained from students at the University of Kansas during the fall semester of 2011, and spring semesters of 2013 and 2015. A total of three data files, with de-identified information, will be analyzed. The Health Education Resource Office, located within Watkins Health Services, managed the collection of data for the 2011, 2013, and 2015 survey periods. The Assistant Director of Watkins Health Services, Heidi Garcia, and the Program Manager of Watkins Health Services, Jenny McGee, granted me access to the data for the purposes of this study.

1.3 Do you currently have funding or expect to obtain funding in the future?

No

1.4 Select Type of Funding

N/A

Select your award's current status.

N/A

1.5 Study Purpose: Describe the purpose of the research. Explain what is intended to be discovered; include goals, aims, and objectives and/or state the hypothesis to be tested.

The purpose of this study will be to describe the relationship, if any, between protective behavioral strategy use and the experience of negative alcohol-related consequences as a result of alcohol consumption at the University of Kansas as measured by the American College Health Association's National College Health Assessment-II and IIb. The specific aims of the study are to answer the following research questions: 1) What is the relationship between protective behavioral strategies and negative alcohol-related consequences? 2) What percent of college students use protective behavioral strategies as described by the NCHA – II in the year 2011, and NCHA – IIb in the years 2013 and 2015? 3) What percent of college students experience negative alcohol-related consequences as described by the NCHA – II in the year 2011, and NCHA – IIb in the years 2013 and 2015? 4) What is the relationship between gender and

protective behavioral strategies as described by the NCHA – II in the year 2011, and NCHA – IIb in the years 2013 and 2015? 5) What is the relationship between gender and negative alcohol-related consequences as described by the NCHA – II in the year 2011, and NCHA – IIb in the years 2013 and 2015? 6) What is the relationship between protective behavioral strategies, as organized as a three-factor subscale model (stopping or limiting drinking, manner of drinking, and serious harm reduction), and negative alcohol-related consequences?

1.6 Background: Provide a brief scientific or scholarly background for the research activities, address gaps in current knowledge that may be filled by this research project.

Excessive alcohol consumption is salient among the college population and many students are at risk of experiencing a broad range of negative alcohol-related consequences. Over the past few decades, there has been a growing concern regarding college students' experience of negative alcohol-related consequences. As a result of the widespread prevalence of consequences, the use of protective behavioral strategies (PBS) has emerged in the literature as a way to help students drink safely in college. PBS may alleviate or even eradicate the incidence of negative alcohol-related consequences. Although a strong basis of literature supports the use of PBS to reduce the experience of negative alcohol-related consequences among college students, there appears to be some concern that not all PBS may be effective. Therefore, this study will further examine the relationship between PBS and the experience of negative alcohol-related consequences among college students.

2. RISK & BENEFITS

2.1 Does this study involve any of the following? (Check all that apply)

☐ Genetic information
☐ Biological specimens
☒ Information pertaining to illegal activity
☒ Information pertaining to substance abuse
☒ Information relating to sexual attitudes, orientation, or practice
☐ Private identifiable information
☒ Personal or sensitive information
☐ Information pertaining to disability status
☐ Private records (academic, medical, etc.)
☐ Information that if released could damage an individual's financial standing, employability, reputation, or cause social stigmatization or discrimination

☐ Information that if released could cause stigmatization or discrimination within a specific community

☐ Other

☐ None of these

2.2 Describe the nature and degree of the risk or harm checked above. Describe if the number of samples/records you are receiving affects the degree of risk.

Some self-report survey items asked questions that pertained to illegal activity, substance abuse, sexual experiences, and were personal and sensitive. Items that measured alcohol consumption revealed information pertaining to substance abuse and possible illegal activity, for respondents under the legal drinking age of 21 (e.g., within the last 30 days, on how many days did you use alcohol; over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting; demographic information – age, gender, year in school, enrollment status, and ethnicity). Some items asked questions pertaining to sexual activity (e.g., someone had sex with me without my consent; had sex with someone without their consent; had unprotected sex). Some items asked questions of a personal or sensitive nature (e.g., physically injured self, seriously contemplated suicide). The data did not contain any distinct identifiers. The 2011 data set included 1050 respondents. The 2013 data set included 1100 respondents. The 2015 data set included 613 respondents. The data sets are large and de-identified; therefore, I do not believe it affects the minimal degree of risk.

2.3 What steps will be taken to minimize the risks or harm and protect the subjects' welfare (when risk is greater than minimal)?

The data sets are de-identified. The data sets will be returned to the original owner upon completion of the study.

2.4 Describe the anticipated benefits of the research for the individuals, society, or science. Explain how the benefits outweigh the risks.

The results of this study will be shared with the Health Education Resource Office at Watkins Health Services for future program development. This study will increase the body of research in the effectiveness in the field. Additionally, it will also inform practitioners in the field in the effectiveness of this methodology. The benefits of this research for the field and practitioners outweighs the minimal risk of this study.

3. DATA INFORMATION

3.1 Data Storage and Transfer Information

a. Summarize the original procedures for collection of the data/specimens, including the original investigators/owners of data, and the original intent for collection of the data/specimens.
b. Describe where the data/specimens are currently being stored and, if specimens, whether they are currently held in a tissue/specimen bank (or other facility).
c. Explain who will give the KU investigators access to the data/specimens for this project.

The Health Education Resource Office (HERO) staff managed data collection for the National College Health Assessment in 2011, 2013, and 2015. In the years 2011 and 2013, HERO staff administered paper-based surveys in the classroom. An information statement was provided to students along with the survey. The information statement explained the purpose of the study, minimal risks and benefits, confidentiality, and the option to decline participation at any time. The survey took approximately 30 minutes to complete. Participants were instructed to place completed surveys in the data collection box. During the survey collection period, healthy snack bars were available for students to obtain as an incentive. Immediately following the data collection period for each course, the completed surveys were returned and kept secure in the Health Education Resource Office. Once all data collection periods were complete, all participant surveys were returned to the American College Health Association for tabulation. In the assessment year 2015, the HERO staff conducted data collection for online/web-based surveys. A recruitment script, including the survey link, was emailed to randomly selected students. The email recruitment script explained the purpose of the study, confidentiality, and the option to decline participation at any time. In order to safeguard participant confidentiality, email addresses were destroyed by the American College Health Association before data was compiled and shared with the HERO. The raw data file shared with the HERO did not contain any distinct identifiers. Participants were encouraged to complete the survey in one sitting, which was expected to take approximately 30 minutes. Participants who completed the NCHA-Web survey were entered into a drawing for a chance to receive an incentive. Incentives included an iPad 4 (16MB), beanbag chair, one of five 60 minute massages, and one of ten 30 minute massages. Heidi Garcia, Assistant Director of Student Health Services, and Jenny Donham McKee, Program Manager, are the original investigators/owners of the data and have granted me access to the data for the current study. The ACHA returned results from the University of Kansas, as well as the results for a National Reference Group to assist in the interpretation of the results for each data collection period. The raw, SPSS data files are stored in the Health Education Resource Office. The original intent of data collection was to assess the health-related attitudes, perceptions, and behaviors of students at the University of Kansas as measured by the American College Health Associations' National College Health Assessment.

3.2 What type of data will you be analyzing? *(Check all that apply)*

☒ De-identified data (no direct/indirect identifiers)
☐ Identifiable data
☐ PHI (Protected Health Information)
☐ Academic Records

3.3 Check the types of identifiers present in the data set you are analyzing: *(Check all that apply)*

☐ Names
☐ Geographic subdivisions smaller than a state (street address, city, county, zip code)
☐ Birth dates, date of death, admission/discharge dates
☒ Age (without birth dates)
☐ Student/employee IDs
☒ Ethnicity/Race
☐ Telephone or fax numbers
☐ Electronic mail address (e- mail)
☐ Social security numbers
☐ Social media or Website Usernames
☐ Medical or mental health records
☐ Account numbers
☐ Health plan beneficiary numbers
☐ Certificate or license numbers
☐ Vehicle identifiers and serial numbers
☐ Device identifiers and serial numbers
☐ Web Universal Resource Locators (URLs)
☐ Internet Protocol (IP) address numbers
☐ Biometric identifiers, including finger/voice prints
☐ Other unique identifiers

3.4 Explain what type of data will be included in your analysis. Explain why it is necessary to obtain or store identifiers. Describe the size of the data set or the number of specimens that will be analyzed.

A subset of questions from the original surveys will be used in a secondary analysis for the current study to describe if a relationship exists between PBS use and negative alcohol-related

consequences as a result of alcohol consumption. The items of interest for the current study are sample demographics and measures that assessed PBS use when consuming alcohol, negative alcohol-related consequences, and alcohol consumption. The data is de-identified, so it will not include identifiers. The 2011 data set included 1050 respondents. The 2013 data set included 1100 respondents. The 2015 data set included 613 respondents.

3.5a Explain how the data was originally collected. Explain if the data was originally approved for research or non-research purposes, and if the project was approved by an IRB.

In the years 2011 and 2013, HERO staff administered paper-based surveys in the classroom. An information statement was provided to students along with the survey. The information statement explained the purpose of the study, minimal risks and benefits, confidentiality, and the option to decline participation at any time. The survey took approximately 30 minutes to complete. Participants were instructed to place completed surveys in the data collection box. During the survey collection period, healthy snack bars were available for students to obtain as an incentive. Immediately following the data collection period for each course, the completed surveys were returned and kept secure in the Health Education Resource Office. Once all data collection periods were complete, all participant surveys were returned to the American College Health Association for tabulation. IRB approval was sought and obtained for data collection in 2011 (HSCL#19118) and 2013 (HSCL#20571) . In the assessment year 2015, the HERO staff conducted data collection for online/web-based surveys. A recruitment script, including the survey link, was emailed to randomly selected students. The email recruitment script explained the purpose of the study, confidentiality, and the option to decline participation at any time. In order to safeguard participant confidentiality, email addresses were destroyed by the American College Health Association before data was compiled and shared with the HERO. The raw data file shared with the HERO did not contain any distinct identifiers. Participants were encouraged to complete the survey in one sitting, which was expected to take approximately 30 minutes. Participants who completed the NCHA-Web survey were entered into a drawing for a chance to receive an incentive. Incentives included an iPad 4 (16MB), beanbag chair, one of five 60 minute massages, and one of ten 30 minute massages. IRB approval was sought and obtained an assigned determination of Not Human Research for data collection in 2015 (STUDY00002269).

3.5b Will participants be contacted or compensated for use of their data?

No

If other, please explain.

Click here to enter text.

3.6 Informed Consent Information

a. Explain how you will obtain consent from participants for use of this data, or why you do not plan to obtain consent.
b. Describe the process of obtaining consent. Include names of individuals on the research team who will be obtaining consent, where/when the process will take place and how you will ensure the subjects' understanding.
c. For educational records or Protected Health Information (PHI), explain how you will satisfy the requirements for an authorization to use this data for research purposes under HIPAA and FERPA regulations.

I do not plan to obtain consent from participants for the use of this secondary data because it is de-identified. Consent procedures for the original studies included an information statement that explained the purpose of the study, minimal risks and benefits, confidentiality, and the option to decline participation at any time.

4. DATA SECURITY

4.1 Do you have any of the following agreements for this project? *(Check all that apply)*
If yes, please upload the agreements with this protocol in eCompliance.

☐ Data Use Agreement (DUA)
☐ Contract
☐ Memorandum of Understanding (MOU)
☐ Other agreement

4.2 Data Security Plan

a. Outline your data security plan, including protocol for personnel handling data, physical security safeguards, and electronic security safeguards.
b. Describe the steps that will be taken to secure the data during storage, use, and transmission.
c. Provide details such as where and how the data will be stored, for how long it will be kept, how it will be disposed/destroyed. Explain if the data will be returned to the original owner.

The utmost care will be provided to secure the handling of this secondary data. I will be the only personnel handling the secondary data for the purpose of this study. The de-identified data will be stored on a Macbook Pro computer for the purpose of statistical analysis. A personal passcode will be utilized to control access to the computer. The data will be kept until the completion of the project in June 2019 and will be returned to the original owners.

4.3 By checking this box, you verify that you are aware of the KU IT data security policies/procedures, and that you will be following and abiding by these policies to ensure security of the data related to this project.

☒ Yes, I verify I understand and will comply with KU IT data security policies/procedures.

Appendix H: IRB Letter of Approval

KU THE UNIVERSITY OF KANSAS Research

Date: February 20, 2019

TO: Jennifer Bechard, (j871s743@ku.edu)

FROM: Jocelyn Isley, MS, CIP, IRB Administrator (785-864-7385, irb@ku.edu)

RE: **Approval of Initial Study**

The IRB reviewed the submission referenced below on 2/20/2019. The IRB approved the protocol, effective 2/20/2019.

IRB Action: APPROVED	**Effective date: 2/20/2019**	**Expiration Date : 2/19/2024**
STUDY DETAILS		
Investigator:	Jennifer Bechard	
IRB ID:	STUDY00143628	
Title of Study:	The Relationship Between PBS and Negative Alcohol-Related Consequences	
Funding ID:	None	
REVIEW INFORMATION		
Review Type:	Initial Study	
Review Date:	2/20/2019	
Documents Reviewed:	• Jennifer Bechard	
Exemption Determination:	• (4) Secondary research on data or specimens (no consent required)	
Additional Information:		

KEY PROCEDURES AND GUIDELINES. Consult our website for additional information.

1. **Approved Consent Form:** You must use the final, watermarked version of the consent form, available under the "Documents" tab, "Final" column, in eCompliance. Participants must be given a copy of the form.
2. **Continuing Review and Study Closure:** You are required to provide a project update to HRPP before the above expiration date through the submission of a Continuing Review. Please close your study at completion.
3. **Modifications:** Modifications to the study may affect Exempt status and must be submitted for review and approval before implementing changes. For more information on the types of modifications that require IRB review and approval, visit our website.
4. **Add Study Team Member:** Complete a study team modification if you need to add investigators not named in original application. Note that new investigators must take the online tutorial prior to being approved to work on the project.
5. **Data Security**: University data security and handling requirements apply to your project.
6. **Submit a Report of New Information (RNI):** If a subject is injured in the course of the research procedure or there is a breach of participant information, an RNI must be submitted immediately. Potential non-compliance may also be reported through the RNI process.
7. **Consent Records:** When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity.
8. **Study Records** must be kept a minimum of three years after the completion of the research. Funding agencies may have retention requirements that exceed three years.

Appendix I: Information Statement

INFORMATION STATEMENT

Approved by the Human Subjects Committee University of Kansas, Lawrence Campus (HSCL). Approval expires one year from 1/12/2011. HSCL #19118.

Greetings,

Student Health Services at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study.

We are conducting this study to better understand health-related behaviors specific to the students on our campus. This will entail your completion of a questionnaire. The questionnaire is expected to take approximately 30 minutes to complete.

The items on the questionnaire are health-related and address mental health, physical health, substance use (both legal and illegal) and sexual activity. As a participant, you may feel some discomfort with the content of certain questions; furthermore, you can choose to not answer questions or you may stop at any time. Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of current health-related behaviors as well as assess the needs for current programming and prevention education.

Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. Completion of the survey indicates your willingness to participate in this project and that you are over the age of eighteen.

If you would like additional information regarding the study, please contact Heidi Garcia or Jenny Donham. If you have any additional questions about your rights as a research participant, you may contact Human Subjects Committee Lawrence Campus (HSCL) at (785) 864-7429. You may also write to the HSCL, University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045 or by e-mail at mdenning@ku.edu.

Sincerely,

Heidi M. Garcia, M.S.Ed
Principal Investigator
University of Kansas
Student Health Services
Watkins Memorial Health Center
Lawrence, KS 66045
(785) 864-9752
hmgarica@ku.edu

Jenny E. Donham, M.S.Ed
Health Educator
University of Kansas
Student Health Services
Watkins Memorial Health Center
Lawrence, KS 66045
(785) 864-9572
jemckee@ku.edu

Appendix J: Institution of Higher Education Demographic Survey

ACHA NCHA

American College Health Association National College Health Assessment

Institution of Higher Education Demographic Survey

Data from all participating institutions are aggregated for the comparative studies by various types of institutional characteristics. For that purpose, please furnish the data requested below and return this form with your questionnaires. Because this form is used to control the processing of questionnaires, survey responses cannot be returned until this information is complete. In no instance will your institution be singled out for comparison with others in the aggregated analysis.

Section 1. Institutional Characteristics

1. INSTITUTION NAME

Please specify UNIVERSITY OF KANSAS

2. SURVEY PERIOD

Fall or Spring SPRING Year 2011

3. STUDENT ENROLLMENT

Total Student Enrollment	26,266
Total Undergraduate Enrollment	19,852
Total Graduate Enrollment	6,414
Total Non-Degree Seeking/Other Enrollment	—

If separate data are unavailable for undergraduates and graduates, please provide composite data for both in the undergraduate column and check here: ○

If your institution serves only undergraduates OR graduates, complete the appropriate box and leave the other blank.

	Undergraduate	*Graduate*
% Female	48.4%	52.1%
% Male	51.6%	47.6%
% White, non-Hispanic	78%	69.2%
% Black, non-Hispanic	3.4%	2.2%
% Hispanic or Latino	4.8%	3.7%
% Asian or Pacific Islander	3.2%	3.3%
% Native American or Alaskan Native	.07%	1.0%
% International	5.2%	14.2%
% Other	3.1%	4.4%

4. AMERICAN COLLEGE HEALTH ASSOCIATION AFFILIATION

- ✓ ACHA Institutional Member (Please specify Institution Member ID #: 325)
- ○ Non-Member Institution

5. INSTITUTIONAL CONTROL

- ✓ Public
- ○ Private

6. RELIGIOUS AFFILIATION

- ○ Yes (Please specify: _____)
- ✓ No

Page 1 of 5

Section 1, Continued. Institutional Characteristics

7. Minority Serving Institution Status (select all that apply)

For information regarding your IHE's classification as a minority serving institution, please visit http://www.ed.gov/about/offices/list/ocr/edlite-minorityinst.html

- ○ Postsecondary Minority Institution
- ○ Historically Black College or University (HBCU)
- ○ High Hispanic Enrollment
- ○ Hispanic Serving Institution (HSI)
- ○ Indian Tribally Controlled College or University
- ○ Alaska Native-Serving Institution
- ○ Native Hawaiian-Serving Institution

8. Institutional Type

- ○ Two-year
- ✓ Four-year or more
- ○ Other (Please specify: _____)

9. Carnegie Classification

For information regarding your classification, visit http://www.carnegiefoundation.org/classifications/index.asp?key=782, find your campus listing, and note the "Basic" Carnegie Classification for your campus below.

Associate's Colleges

- ○ Public Rural-Serving Small
- ○ Public Rural-Serving Medium
- ○ Public Rural-Serving Large
- ○ Public Suburban-Serving Single Campus
- ○ Public Suburban-Serving Multicampus
- ○ Public Urban-Serving Single Campus
- ○ Public Urban-Serving Multicampus
- ○ Public Special Use
- ○ Private Nonprofit
- ○ Private For-profit
- ○ Public 2-year under 4-year Universities
- ○ Public 4-year, Primarily Associate's
- ○ Private Nonprofit 4-year, Primarily Associate's
- ○ Private For-profit 4-year, Primarily Associate's

Baccalaureate Colleges

- ○ Arts and Sciences
- ○ Diverse Fields
- ○ Baccalaureate/Associate's Colleges

Master's Colleges and Universities

- ○ Larger Programs
- ○ Medium Programs
- ○ Smaller Programs

Research Institutions

- ✓ Research Universities (very high research activity)
- ○ Research Universities (high research activity)
- ○ Doctoral/Research Universities

Special Focus Institutions

- ○ Faith-Related
- ○ Medical
- ○ Other Health
- ○ Engineering
- ○ Other Technology
- ○ Business
- ○ Art/Music/Design
- ○ Law
- ○ Other

Miscellaneous

- ○ Tribal College
- ○ Classification Pending
- ○ Unclassified

10. National Collegiate Athletic Association (NCAA) Division

Please mark highest division applicable to a sport at your institution.
To determine your division membership, please visit http://web1.ncaa.org/memberLinks/links.jsp

- ✓ Division I
- ○ Division II
- ○ Division III

Section 1, Continued. Institutional Characteristics

11. Campus Locale

- ○ Very large city (population over 500,000)
- ○ Large city (population of 250,000 - 499,999)
- ✓ Small city (population of 50,000 - 249,999)
- ○ Large town (population of 10,000 - 49,999)
- ○ Small town (population of 2,500 - 9,999)
- ○ Rural community (population under 2,500)

12. Campus Health Insurance Model

- ○ We offer no form of student health insurance and students are responsible for their own coverage
- ✓ Voluntary (*Students have the option of purchasing your institution's health insurance plan but are not required to show any proof of insurance to your institution*)
- ○ Soft Waiver (*Students are mandated to have health insurance coverage comparable to your institution's plan, and if so, they may waive your institutional plan without proof of alternative coverage*)
- ○ Hard Waiver (*Students are mandated to have health insurance coverage comparable to your institution's plan, and if so, they may waive your institutional plan with proof of alternate coverage*)
- ○ Mandatory (*All students are mandated to purchase your institution's student health insurance regardless of outside insurance coverage*)
- ○ Other (Please specify: _____)

Section 2. Survey Characteristics

1. Purpose of Survey

- ○ Pre-test (e.g., before educational program or campus-wide intervention)
- ○ Post-test (e.g., after educational program or campus-wide intervention)
- ✓ General assessment of student beliefs, behaviors, and expériences
- ○ Other (Please specify: _____)

2. Date Administered

Start date 4.13.11 End date 5.10.11

3. Student Sample Characteristics (I surveyed...)

- ✓ All of the different types of students who attend my institution
- ○ Only a particular group of students (e.g., undergraduates, freshmen, athletes, medical students, commuters) (Please specify: _____)

4. Incentives

- ○ Students who completed the ACHA-NCHA were entered into a random drawing for an incentive (Pease specify incentive: _____)
- ✓ All students who completed the ACHA-NCHA received an incentive (Please specify incentive: SAMPLE-SIZED GRANOLA BAR)
- ○ I did not offer students who completed the ACHA-NCHA an incentive for their participation

5. Survey Type (I surveyed using...)

- ✓ Paper-based surveys (Complete **Section 2A** on the next page)
- ○ Online/Web-based surveys (Complete **Section 2B** on the next page)

Section 2A: **Paper-based survey characteristics**

6A. SAMPLING PROCEDURES

Classroom Sampling

- ☑ Surveyed random selection of classes from across institution
- ○ Surveyed other random selection of classes (e.g, all sections of a particular class required by all students)
  (Please specify: _____)
- ○ Surveyed non-random selection of classrooms (e.g., classes taught by personal acquaintances)
  (Please specify: _____)

Please specify the number of classrooms surveyed: 13

Mailed Sampling

- ○ Mailed survey to all students at institution
- ○ Mailed survey to all students in a particular subgroup (e.g, commuters, undergraduates, graduates)
  (Please specify: _____)
- ○ Mailed survey to random selection of students at institution
- ○ Mailed survey to random selection of students in a particular subgroup (e.g, commuters, undergraduates)
  (Please specify: _____)
- ○ Mailed survey to a non-random selection of students (e.g., students who participated in a program)
  (Please specify: _____)

Convenience Sampling

- ○ Convenience sample (e.g., students coming to student health, students eating lunch in the student union)
  (Please specify: _____)

Other

- ○ Other (Please specify: _____)

7A. SURVEY DISTRIBUTION

How many surveys did you distribute? 1048

Section 2B: **Online/Web-based survey characteristics**

6B. SAMPLING PROCEDURES

E-Mailed Sampling

- ○ E-mailed survey to all students at institution
- ○ E-mailed survey to all students in a particular subgroup (e.g, commuters, undergraduates, graduates)
  (Please specify: _____)
- ○ E-mailed survey to random selection of students at institution
- ○ E-mailed survey to random selection of students in a particular subgroup (e.g, commuters, graduates)
  (Please specify: _____)
- ○ E-mailed survey to a non-random selection of students (e.g., students who participated in a program)
  (Please specify: _____)

Convenience Sampling

- ○ Convenience sample (e.g., posting survey URL on institution website or on posters)
  (please specify: _____)

7B. SURVEY DISTRIBUTION

How many students did you invite to participate? _____

Check here if you would like ACHA to determine: ○

Section 3. Data Agreement and Contact Information

Thank you for completing the above information and for helping us better use the ACHA-NCHA survey data in developing normative information for a variety of variables.

The ACHA-NCHA is being used across the nation to assess student health risks, beliefs, behaviors, and consequences. Each participating institution of higher education (IHE) receives a copy of its data file and reports for the purposes of analysis, research, and program planning. Additionally, each participating institution receives an aggregate report with data from all IHEs using random sampling methodologies that participated in the same survey period. The creation of this large national data file and aggregate report allows you to compare your students to a national sample. It also provides the opportunity for a greater understanding of student health, what works to reduce student health risks and consequences, and what changes can be brought about over time. In light of this opportunity, we are asking your permission to analyze, report on, and use the data collected from your students to further both our understanding of student health needs identified by the ACHA-NCHA and the ability of IHEs to meet these needs.

By signing below, I hereby agree to the following statement:
"I, as the ACHA-NCHA program representative at my institution, give the American College Health Association permission to analyze, report on, and otherwise use the aggregate data. I understand that all information in the aggregate data is protected and that the identity of my institution and the students who complete the ACHA-NCHA will remain confidential at all times."

Signature _____ Date 6/16/11

Name _____
Institution _____
Phone _____
Address _____

THE UNIVERSITY OF KANSAS
Student Success

Heidi Garcia, MSE
Manager
Wellness Resource Center
Watkins Health Center
1200 Schwegler Drive, Room 1800B
Lawrence, KS 66045-7559
(785) 864-9752
Fax (785) 864-9596
hmgarcia@ku.edu
www.studenthealth.ku.edu

When all sections are complete, please either mail or fax this survey to:

American College Health Association

P.O. Box 28937
Baltimore, MD 21240
410.859.1510 (fax)

Direct all inquiries regarding completion of this survey to:

Mary T. Hoban, Ph.D., CHES
Director, ACHA-NCHA Program Office
410.859.1500 (phone)
mhoban@acha.org

ACHA NCHA

American College Health Association National College Health Assessment

Institution of Higher Education Demographic Survey

Data from all participating institutions are aggregated for the comparative studies by various types of institutional characteristics. For that purpose, please furnish the data requested below and return this form with your questionnaires. Because this form is used to control the processing of questionnaires, survey responses cannot be returned until this information is complete. In no instance will your institution be singled out for comparison with others in the aggregated analysis.

Section 1. Institutional Characteristics

1. INSTITUTION NAME

Please specify UNIVERSITY OF KANSAS

2. SURVEY PERIOD

Fall or Spring SPRING Year 2013

3. STUDENT ENROLLMENT

Total Student Enrollment	25,448
Total Undergraduate Enrollment	19,222
Total Graduate Enrollment	6,226
Total Non-Degree Seeking/Other Enrollment	—

If separate data are unavailable for undergraduates and graduates, please provide composite data for both in the undergraduate column and check here: ○

If your institution serves only undergraduates OR graduates, complete the appropriate box and leave the other blank.

	Undergraduate	*Graduate*
% Female	48.9 %	52.8%
% Male	51.1%	47.2%
% White, non-Hispanic	74.9 %	68.4 %
% Black, non-Hispanic	3.7%	3.1 %
% Hispanic or Latino	5.9%	3.2%
% Asian or Pacific Islander	3.8%	3.5%
% Native American or Alaskan Native	.57%	.80 %
% International	6.5 %	15.7%
% Other	4.5%	5.3%

4. AMERICAN COLLEGE HEALTH ASSOCIATION AFFILIATION

○ ACHA Institutional Member (Please specify Institution Member ID #: _____)
● Non-Member Institution

5. INSTITUTIONAL CONTROL

● Public
○ Private

6. RELIGIOUS AFFILIATION

○ Yes (Please specify: _____)
● No

Section 1, Continued. Institutional Characteristics

7. Minority Serving Institution Status (select all that apply)

For information regarding your IHE's classification as a minority serving institution, please visit http://www.ed.gov/about/offices/list/ocr/edlite-minorityinst.html

- ○ Postsecondary Minority Institution
- ○ Historically Black College or University (HBCU)
- ○ High Hispanic Enrollment
- ○ Hispanic Serving Institution (HSI)
- ○ Indian Tribally Controlled College or University
- ○ Alaska Native-Serving Institution
- ○ Native Hawaiian-Serving Institution

8. Institutional Type

- ○ Two-year
- ● Four-year or more
- ○ Other (Please specify: _____)

9. Carnegie Classification

For information regarding your classification, visit http://www.carnegiefoundation.org/classifications/index.asp?key=782, find your campus listing, and note the **"Basic"** Carnegie Classification for your campus below.

Associate's Colleges

- ○ Public Rural-Serving Small
- ○ Public Rural-Serving Medium
- ○ Public Rural-Serving Large
- ○ Public Suburban-Serving Single Campus
- ○ Public Suburban-Serving Multicampus
- ○ Public Urban-Serving Single Campus
- ○ Public Urban-Serving Multicampus
- ○ Public Special Use
- ○ Private Nonprofit
- ○ Private For-profit
- ○ Public 2-year under 4-year Universities
- ○ Public 4-year, Primarily Associate's
- ○ Private Nonprofit 4-year, Primarily Associate's
- ○ Private For-profit 4-year, Primarily Associate's

Baccalaureate Colleges

- ○ Arts and Sciences
- ○ Diverse Fields
- ○ Baccalaureate/Associate's Colleges

Master's Colleges and Universities

- ○ Larger Programs
- ○ Medium Programs
- ○ Smaller Programs

Research Institutions

- ● Research Universities (very high research activity)
- ○ Research Universities (high research activity)
- ○ Doctoral/Research Universities

Special Focus Institutions

- ○ Faith-Related
- ○ Medical
- ○ Other Health
- ○ Engineering
- ○ Other Technology
- ○ Business
- ○ Art/Music/Design
- ○ Law
- ○ Other

Miscellaneous

- ○ Tribal College
- ○ Classification Pending
- ○ Unclassified

10. National Collegiate Athletic Association (NCAA) Division

Please mark highest division applicable to a sport at your institution.
To determine your division membership, please visit http://web1.ncaa.org/memberLinks/links.jsp

- ● Division I
- ○ Division II
- ○ Division III

Section 1, Continued. Institutional Characteristics

11. Campus Locale

- ○ Very large city (population over 500,000)
- ○ Large city (population of 250,000 - 499,999)
- ● Small city (population of 50,000 - 249,999)
- ○ Large town (population of 10,000 - 49,999)
- ○ Small town (population of 2,500 - 9,999)
- ○ Rural community (population under 2,500)

12. Campus Health Insurance Model

- ○ We offer no form of student health insurance and students are responsible for their own coverage
- ● Voluntary (*Students have the option of purchasing your institution's health insurance plan but are not required to show any proof of insurance to your institution*)
- ○ Soft Waiver (*Students are mandated to have health insurance coverage comparable to your institution's plan, and if so, they may waive your institutional plan without proof of alternative coverage*)
- ○ Hard Waiver (*Students are mandated to have health insurance coverage comparable to your institution's plan, and if so, they may waive your institutional plan with proof of alternate coverage*)
- ○ Mandatory (*All students are mandated to purchase your institution's student health insurance regardless of outside insurance coverage*)
- ○ Other (Please specify: _____)

Section 2. Survey Characteristics

1. Purpose of Survey

- ○ Pre-test (e.g., before educational program or campus-wide intervention)
- ○ Post-test (e.g., after educational program or campus-wide intervention)
- ● General assessment of student beliefs, behaviors, and experiences
- ○ Other (Please specify: _____)

2. Date Administered

Start date 4.01.13 End date 5.06.13

3. Student Sample Characteristics (I surveyed...)

- ● All of the different types of students who attend my institution
- ○ Only a particular group of students (e.g., undergraduates, freshmen, athletes, medical students, commuters) (Please specify: _____)

4. Incentives

- ○ Students who completed the ACHA-NCHA were entered into a random drawing for an incentive (Pease specify incentive: _____)
- ● All students who completed the ACHA-NCHA received an incentive (Please specify incentive: _____)
- ○ I did not offer students who completed the ACHA-NCHA an incentive for their participation

5. Survey Type (I surveyed using...)

- ● Paper-based surveys (Complete **Section 2A** on the next page)
- ○ Online/Web-based surveys (Complete **Section 2B** on the next page)

Section 2A: Paper-based survey characteristics

6A. Sampling Procedures

Classroom Sampling

- ● Surveyed random selection of classes from across institution
- ○ Surveyed other random selection of classes (e.g, all sections of a particular class required by all students)
  (Please specify: _____)
- ○ Surveyed non-random selection of classrooms (e.g., classes taught by personal acquaintances)
  (Please specify: _____)

Please specify the number of classrooms surveyed: 14

Mailed Sampling

- ○ Mailed survey to all students at institution
- ○ Mailed survey to all students in a particular subgroup (e.g, commuters, undergraduates, graduates)
  (Please specify: _____)
- ○ Mailed survey to random selection of students at institution
- ○ Mailed survey to random selection of students in a particular subgroup (e.g, commuters, undergraduates)
  (Please specify: _____)
- ○ Mailed survey to a non-random selection of students (e.g., students who participated in a program)
  (Please specify: _____)

Convenience Sampling

- ○ Convenience sample (e.g., students coming to student health, students eating lunch in the student union)
  (Please specify: _____)

Other

- ○ Other (Please specify: _____)

7A. Survey Distribution

How many surveys did you distribute? 1,100

Section 2B: Online/Web-based survey characteristics

6B. Sampling Procedures

E-Mailed Sampling

- ○ E-mailed survey to all students at institution
- ○ E-mailed survey to all students in a particular subgroup (e.g, commuters, undergraduates, graduates)
  (Please specify: _____)
- ○ E-mailed survey to random selection of students at institution
- ○ E-mailed survey to random selection of students in a particular subgroup (e.g, commuters, graduates)
  (Please specify: _____)
- ○ E-mailed survey to a non-random selection of students (e.g., students who participated in a program)
  (Please specify: _____)

Convenience Sampling

- ○ Convenience sample (e.g., posting survey URL on institution website or on posters)
  (please specify: _____)

7B. Survey Distribution

How many students did you invite to participate? _____

Check here if you would like ACHA to determine: ○

Section 3. Data Agreement and Contact Information

Thank you for completing the above information and for helping us better use the ACHA-NCHA survey data in developing normative information for a variety of variables.

The ACHA-NCHA is being used across the nation to assess student health risks, beliefs, behaviors, and consequences. Each participating institution of higher education (IHE) receives a copy of its data file and reports for the purposes of analysis, research, and program planning. Additionally, each participating institution receives an aggregate report with data from all IHEs using random sampling methodologies that participated in the same survey period. The creation of this large national data file and aggregate report allows you to compare your students to a national sample. It also provides the opportunity for a greater understanding of student health, what works to reduce student health risks and consequences, and what changes can be brought about over time. In light of this opportunity, we are asking your permission to analyze, report on, and use the data collected from your students to further both our understanding of student health needs identified by the ACHA-NCHA and the ability of IHEs to meet these needs.

By signing below, I hereby agree to the following statement:
"I, as the ACHA-NCHA program representative at my institution, give the American College Health Association permission to analyze, report on, and otherwise use the aggregate data. I understand that all information in the aggregate data is protected and that the identity of my institution and the students who complete the ACHA-NCHA will remain confidential at all times."

Signature _____ Date 7/1/13

Name _____

Institution _____

Phone _____

Address

HEIDI GARCIA, M.S.Ed.
Program Manager
Health Education Resource Office

hmgarcia@ku.edu
www.studenthealth.ku.edu

The University of Kansas
Student Health Services
Watkins Memorial Health Center
1200 Schwegler Drive
Lawrence, KS 66045
785-864-9752 OFFICE
785-864-9596 FAX

When all sections are complete, please either mail or fax this survey to:

American College Health Association
1362 Mellon Road, Suite 180
Hanover, MD 21076
410.859.1510 (fax)

Direct all inquiries regarding completion of this survey to:
Mary T. Hoban, Ph.D., CHES
Director, ACHA-NCHA Program Office
410.859.1500 (phone)
mhoban@acha.org

(rev. Fall 2006)

Appendix K: Email Recruitment Script

Subject line – We want to hear about you!

Email Recruitment Script

Dear ("first name")

Completing the NCHA survey enters you to win one of the following:

- iPad 4 (16 MB)
- KU Bean bag chair
- One of five 60 minute massages
- One of ten 30 minute massages

You have been randomly selected to participate in the National College Health Assessment (NCHA) sponsored and distributed by the American College Health Association (ACHA). The ACHA-NCHA is a national survey designed to assess student health behaviors in order to provide better services and support for University of Kansas students.

Your participation is completely voluntary and confidential. To ensure confidentiality, e-mail addresses are destroyed by ACHA before data are compiled and shared with KU. The raw data file that is shared with your school will not contain any unique identifiers. If you feel that answering specific demographic questions might reveal your identity, you may leave them blank. You may answer only some questions, or you may choose not to participate in the survey at all. Any reports or publications based on this research will use only group data and will not identify you or any individual as being affiliated with this project.

The NCHA-Web is completed online via the Internet. **We encourage you to complete the survey in one sitting, which typically takes about 20-30 minutes.**

You may contact jemckee@ku.edu if you have questions or concerns about the survey.

If you agree to participate in the ACHA NCHA-Web survey, click on the following Internet address to continue:

(ACHA to insert survey link here)

Thank you for your cooperation!

Watkins Health Services and the American College Health Association

If you do not want to receive reminder messages about completing the survey, please click here to remove yourself from the survey mailing list:

(ACHA to insert unsubscribe link here)

If you'd like to enter the drawing without taking the survey, please email your name, email address and phone number to jemckee@ku.edu .

Appendix L: 2015 Institution of Higher Education Demographic Survey

ACHA NCHA
American College Health Association National College Health Assessment

Institution of Higher Education Demographic Survey

Data from all participating institutions are aggregated for the comparative studies by various types of institutional characteristics. For that purpose, please furnish the data requested below and return this form with your questionnaires. Because this form is used to control the processing of questionnaires, survey responses cannot be returned until this information is complete. In no instance will your institution be singled out for comparison with others in the aggregated analysis.

Section 1. Institutional Characteristics

1. INSTITUTION NAME

Please specify UNIVERSITY OF KANSAS

2. SURVEY PERIOD

Fall or Spring SPRING Year 2015

3. STUDENT ENROLLMENT

Total Student Enrollment	24,612
Total Undergraduate Enrollment	18,851
Total Graduate Enrollment	5,761
Total Non-Degree Seeking/Other Enrollment	

If separate data are unavailable for undergraduates and graduates, please provide composite data for both in the undergraduate column and check here: ○

If your institution serves only undergraduates OR graduates, complete the appropriate box and leave the other blank.

Undergraduate		*Graduate*	
% Female	49.0%	% Female	52.5%
% Male	51.0%	% Male	47.5%
% White, non-Hispanic	72.13%	% White, non-Hispanic	65.60%
% Black, non-Hispanic	4.65%	% Black, non-Hispanic	2.88%
% Hispanic or Latino	6.98%	% Hispanic or Latino	2.85%
% Asian or Pacific Islander	4.17%	% Asian or Pacific Islander	3.06%
% Native American or Alaskan Native	.45%	% Native American or Alaskan Native	.85%
% International	6.50%	% International	18.36%
% Other	5.31%	% Other	6.41%

4. AMERICAN COLLEGE HEALTH ASSOCIATION AFFILIATION

○ ACHA Institutional Member (Please specify Institution Member ID #: _____)
● Non-Member Institution

5. INSTITUTIONAL CONTROL

● Public
○ Private

6. RELIGIOUS AFFILIATION

○ Yes (Please specify: _____)
● No

Page 1 of 5

Section 1, Continued. Institutional Characteristics

7. Minority Serving Institution Status (select all that apply)

For information regarding your IHE's classification as a minority serving institution, please visit http://www.ed.gov/about/offices/list/ocr/edlite-minorityinst.html

- ○ Postsecondary Minority Institution
- ○ Historically Black College or University (HBCU)
- ○ High Hispanic Enrollment
- ○ Hispanic Serving Institution (HSI)
- ○ Tribal College or University
- ○ Predominately Black Institution
- ○ Asian American and Native American Pacific Islander-Serving Institution
- ○ Alaska Native-Serving Institution/Native Hawaiian-Serving Institution
- ○ Native American-Serving Non-Tribal Institution

8. Institutional Type

- ○ Two-year
- ● Four-year or more
- ○ Other (Please specify: _____)

9. Carnegie Classification

For information regarding your classification, visit http://carnegieclassifications.iu.edu/lookup_listings/institution.php, find your campus listing, and note the **"Basic"** Carnegie Classification for your campus below.

Associate's Colleges
- ○ Public Rural-Serving Small **(1)**
- ○ Public Rural-Serving Medium **(2)**
- ○ Public Rural-Serving Large **(3)**
- ○ Public Suburban-Serving Single Campus **(4)**
- ○ Public Suburban-Serving Multicampus **(5)**
- ○ Public Urban-Serving Single Campus **(6)**
- ○ Public Urban-Serving Multicampus **(7)**
- ○ Public Special Use **(8)**
- ○ Private Nonprofit **(9)**
- ○ Private For-profit **(10)**
- ○ Public 2-year under 4-year Universities **(11)**
- ○ Public 4-year, Primarily Associate's **(12)**
- ○ Private Nonprofit 4-year, Primarily Associate's **(13)**
- ○ Private For-profit 4-year, Primarily Associate's **(14)**

Baccalaureate Colleges
- ○ Arts and Sciences **(15)**
- ○ Diverse Fields **(16)**
- ○ Baccalaureate/Associate's Colleges **(17)**

Master's Colleges and Universities
- ○ Larger Programs **(18)**
- ○ Medium Programs **(19)**
- ○ Smaller Programs **(20)**

Research Institutions
- ● Research Universities (very high research activity) **(21)**
- ○ Research Universities (high research activity) **(22)**
- ○ Doctoral/Research Universities **(23)**

Special Focus Institutions
- ○ Faith-Related **(24)**
- ○ Medical **(25)**
- ○ Other Health **(26)**
- ○ Engineering **(27)**
- ○ Other Technology **(28)**
- ○ Business **(29)**
- ○ Art/Music/Design **(30)**
- ○ Law **(31)**
- ○ Other **(32)**

Miscellaneous
- ○ Tribal College **(33)**
- ○ Classification Pending **(34)**
- ○ Unclassified/Outside the US **(35)**

10. SPRING BREAK DATES

Please list your Spring Break dates for the current school year.

Start date MARCH 16, 2015 End Date MARCH 22, 2015

Section 1, Continued. Institutional Characteristics

11. Campus Locale

- ○ Very large city (population over 500,000)
- ○ Large city (population of 250,000 - 499,999)
- ● Small city (population of 50,000 - 249,999)
- ○ Large town (population of 10,000 - 49,999)
- ○ Small town (population of 2,500 - 9,999)
- ○ Rural community (population under 2,500)

12. Campus Health Insurance Model

- ○ We offer no form of student health insurance and students are responsible for their own coverage
- ● Voluntary (*Students have the option of purchasing your institution's health insurance plan but are not required to show any proof of insurance to your institution*)
- ○ Soft Waiver (*Students are mandated to have health insurance coverage comparable to your institution's plan, and if so, they may waive your institutional plan without proof of alternative coverage*)
- ○ Hard Waiver (*Students are mandated to have health insurance coverage comparable to your institution's plan, and if so, they may waive your institutional plan with proof of alternate coverage*)
- ○ Mandatory (*All students are mandated to purchase your institution's student health insurance regardless of outside insurance coverage*)
- ○ Other (Please specify: _____)

Section 2. Survey Characteristics

1. Purpose of Survey

- ○ Pre-test (e.g., before educational program or campus-wide intervention)
- ○ Post-test (e.g., after educational program or campus-wide intervention)
- ● General assessment of student beliefs, behaviors, and experiences
- ○ Other (Please specify: _____)

2. Date Administered

Start date 4.7.15 End date 4.30.15

3. Student Sample Characteristics (I surveyed…)

- ● All of the different types of students who attend my institution
- ○ Only a particular group of students (e.g., undergraduates, freshmen, athletes, medical students, commuters) (Please specify: _____)

4. Incentives

- ● Students who completed the ACHA-NCHA were entered into a random drawing for an incentive (Pease specify incentive: iPAD, BEAN BAG CHAIR, ONE OF 15 MASSAGES)
- ○ All students who completed the ACHA-NCHA received an incentive (Please specify incentive: _____)
- ○ I did not offer students who completed the ACHA-NCHA an incentive for their participation

5. Survey Type (I surveyed using…)

- ○ Paper-based surveys (Complete **Section 2A** on the next page)
- ● Online/Web-based surveys (Complete **Section 2B** on the next page)

Section 2A: **Paper-based survey characteristics**

6A. SAMPLING PROCEDURES

Classroom Sampling

- ○ Surveyed random selection of classes from across institution
- ○ Surveyed other random selection of classes (e.g, all sections of a particular class required by all students)
  (Please specify: _____)
- ○ Surveyed non-random selection of classrooms (e.g., classes taught by personal acquaintances)
  (Please specify: _____)

Please specify the number of classrooms surveyed: _____

Mailed Sampling

- ○ Mailed survey to all students at institution
- ○ Mailed survey to all students in a particular subgroup (e.g, commuters, undergraduates, graduates)
  (Please specify: _____)
- ○ Mailed survey to random selection of students at institution
- ○ Mailed survey to random selection of students in a particular subgroup (e.g, commuters, undergraduates)
  (Please specify: _____)
- ○ Mailed survey to a non-random selection of students (e.g., students who participated in a program)
  (Please specify: _____)

Convenience Sampling

- ○ Convenience sample (e.g., students coming to student health, students eating lunch in the student union)
  (Please specify: _____)

Other

- ○ Other (Please specify: _____)

7A. SURVEY DISTRIBUTION

How many surveys did you distribute? _____

Section 2B: **Online/Web-based survey characteristics**

6B. SAMPLING PROCEDURES

E-Mailed Sampling

- ○ E-mailed survey to all students at institution
- ○ E-mailed survey to all students in a particular subgroup (e.g, commuters, undergraduates, graduates)
  (Please specify: _____)
- ● E-mailed survey to random selection of students at institution
- ○ E-mailed survey to random selection of students in a particular subgroup (e.g, commuters, graduates)
  (Please specify: _____)
- ○ E-mailed survey to a non-random selection of students (e.g., students who participated in a program)
  (Please specify: _____)

Convenience Sampling

- ○ Convenience sample (e.g., posting survey URL on institution website or on posters)
  (please specify: _____)

7B. SURVEY DISTRIBUTION

How many students did you invite to participate? 5,000

Check here if you would like ACHA to determine: ○

Section 3. Data Agreement and Contact Information

Thank you for completing the above information and for helping us better use the ACHA-NCHA survey data in developing normative information for a variety of variables.

The ACHA-NCHA is being used across the nation to assess student health risks, beliefs, behaviors, and consequences. Each participating institution of higher education (IHE) receives a copy of its data file and reports for the purposes of analysis, research, and program planning. Additionally, each participating institution receives an aggregate report with data from all IHEs using random sampling methodologies that participated in the same survey period. The creation of this large national data file and aggregate report allows you to compare your students to a national sample. It also provides the opportunity for a greater understanding of student health, what works to reduce student health risks and consequences, and what changes can be brought about over time. In light of this opportunity, we are asking your permission to analyze, report on, and use the data collected from your students to further both our understanding of student health needs identified by the ACHA-NCHA and the ability of IHEs to meet these needs.

By signing below, I hereby agree to the following statement:
"I, as the ACHA-NCHA program representative at my institution, give the American College Health Association permission to analyze, report on, and otherwise use the aggregate data. I understand that all information in the aggregate data is protected and that the identity of my institution and the students who complete the ACHA-NCHA will remain confidential at all times."

Signature [signature] Date 5/19/15

Name HEIDI GARCIA Title PROGRAM DIRECTOR

Institution UNIVERSITY OF KANSAS

Phone 785. 864. 9752 E-mail hmgarcia@ku.edu

Address 1200 SCHWEGLER DR.
LAWRENCE, KS 66045

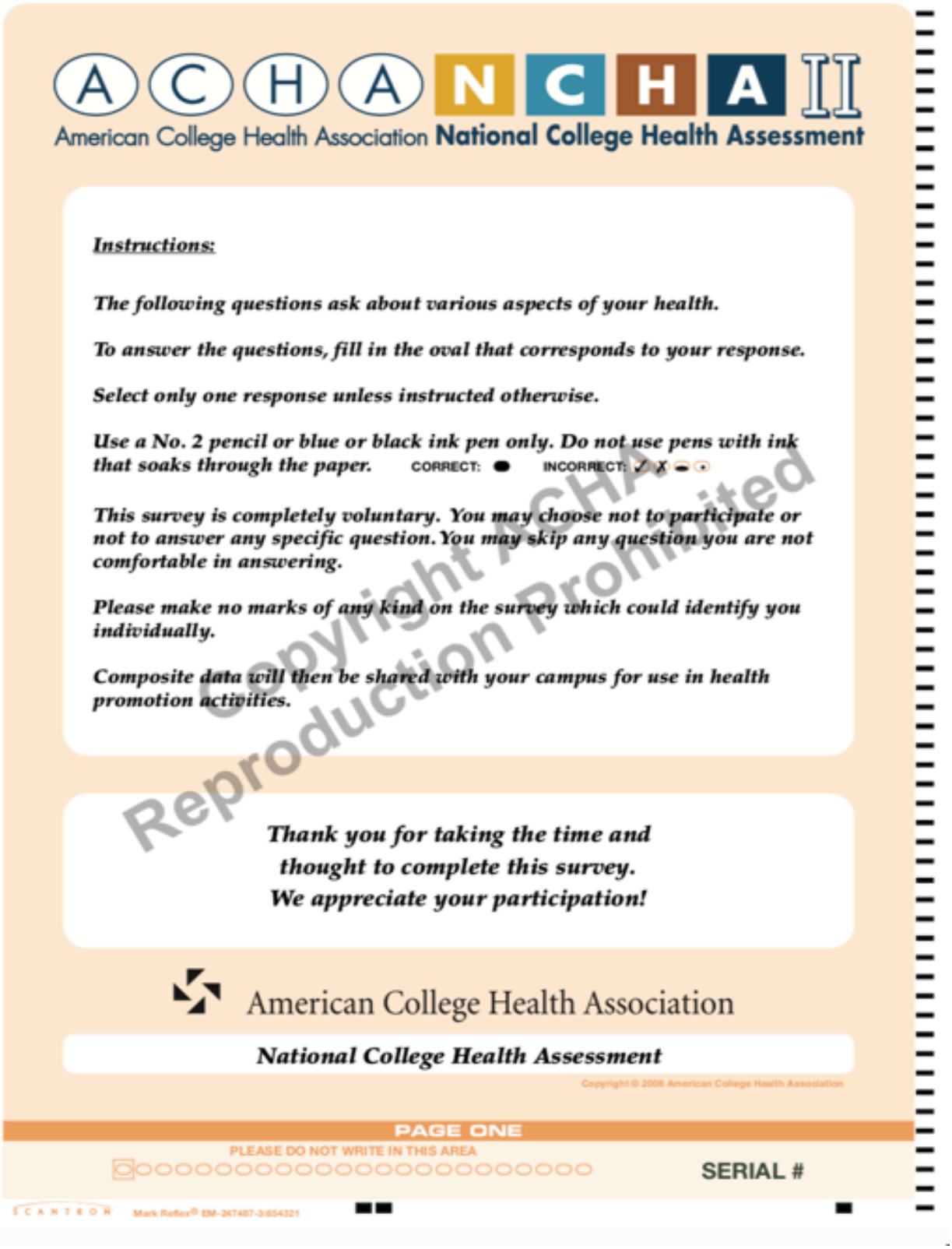
When all sections are complete, please either mail or fax this survey to:

ACHA American College Health Association
advocacy•education•research

1362 Mellon Road, Suite 180
Hanover, MD 21076
410.859.1510 (fax)

Direct all inquiries regarding completion of this survey to:
Mary T. Hoban, Ph.D., MCHES
Director, ACHA-NCHA Program Office
443-270-4558 (phone)
mhoban@acha.org

Appendix M: NCHA II



ACHA NCHA II

American College Health Association National College Health Assessment

Instructions:

The following questions ask about various aspects of your health.

To answer the questions, fill in the oval that corresponds to your response.

Select only one response unless instructed otherwise.

Use a No. 2 pencil or blue or black ink pen only. Do not use pens with ink that soaks through the paper. CORRECT: ● INCORRECT: ✓ X ▬ ⊙

This survey is completely voluntary. You may choose not to participate or not to answer any specific question. You may skip any question you are not comfortable in answering.

Please make no marks of any kind on the survey which could identify you individually.

Composite data will then be shared with your campus for use in health promotion activities.

Thank you for taking the time and thought to complete this survey. We appreciate your participation!

American College Health Association

National College Health Assessment

PAGE ONE

PLEASE DO NOT WRITE IN THIS AREA

SERIAL #

SCANTRON Mark Reflex® EM-247487-3:654321

Health, Health Education and Safety

1. **How would you describe your general health?**

○ Excellent ○ Very good ○ Good ○ Fair ○ Poor ○ Don't know

(Please mark the appropriate column for each question to the right)	2. Have you received information on the following topics from your college or university?		3. Are you interested in receiving information on the following topics from your college or university?	
	No	Yes	No	Yes
Alcohol and other drug use	○	○	○	○
Cold/Flu/Sore throat	○	○	○	○
Depression/Anxiety	○	○	○	○
Eating disorders	○	○	○	○
Grief and loss	○	○	○	○
How to help others in distress	○	○	○	○
Injury prevention	○	○	○	○
Nutrition	○	○	○	○
Physical activity	○	○	○	○
Pregnancy prevention	○	○	○	○
Problem use of Internet/computer games	○	○	○	○
Relationship difficulties	○	○	○	○
Sexual assault/Relationship violence prevention	○	○	○	○
Sexually transmitted disease/infection (STD/I) prevention	○	○	○	○
Sleep difficulties	○	○	○	○
Stress reduction	○	○	○	○
Suicide prevention	○	○	○	○
Tobacco use	○	○	○	○
Violence prevention	○	○	○	○

4. **Within the last 12 months, how often did you:**

(Please mark the appropriate column for each row)

	Always	Most of the time	Sometimes	Rarely	Never	N/A, did not do this activity within the last 12 months
Wear a seatbelt when you rode in a car?	○	○	○	○	○	○
Wear a helmet when you rode a bicycle?	○	○	○	○	○	○
Wear a helmet when you rode a motorcycle?	○	○	○	○	○	○
Wear a helmet when you were inline skating?	○	○	○	○	○	○

5. **Within the last 12 months:**

(Please mark the appropriate column for each row)

	Yes	No
Were you in a physical fight?	○	○
Were you physically assaulted (do not include sexual assault)?	○	○
Were you verbally threatened?	○	○
Were you sexually touched without your consent?	○	○
Was sexual penetration attempted (vaginal, anal, oral) without your consent?	○	○
Were you sexually penetrated (vaginal, anal, oral) without your consent?	○	○
Were you a victim of stalking (e.g., waiting for you outside your classroom, residence, or office; repeated emails/phone calls)?	○	○

PAGE TWO

6. Within the **last 12 months**, have you been in an intimate (coupled/partnered) relationship that was:

(Please mark the appropriate column for each row)

	Yes	No
Emotionally abusive? (e.g., called derogatory names, yelled at, ridiculed)	○	○
Physically abusive? (e.g., kicked, slapped, punched)	○	○
Sexually abusive? (e.g., forced to have sex when you didn't want it, forced to perform or have an unwanted sexual act performed on you)	○	○

7. How safe do you feel:

(Please mark the appropriate column for each row)

	Very safe	Somewhat safe	Somewhat unsafe	Not safe at all
On this campus (daytime)?	○	○	○	○
On this campus (nighttime)?	○	○	○	○
In the community surrounding this school (daytime)?	○	○	○	○
In the community surrounding this school (nighttime)?	○	○	○	○

Alcohol, Tobacco, and Drugs

8. Within the **last 30 days**, on how many days did you use:

(Please mark the appropriate column for each row)

	Never used	Have used, but not in **last 30 days**	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	Used daily
Cigarettes	○	○	○	○	○	○	○	○
Tobacco from a water pipe (hookah)	○	○	○	○	○	○	○	○
Cigars, little cigars, clove cigarettes	○	○	○	○	○	○	○	○
Smokeless tobacco	○	○	○	○	○	○	○	○
Alcohol (beer, wine, liquor)	○	○	○	○	○	○	○	○
Marijuana (pot, weed, hashish, hash oil)	○	○	○	○	○	○	○	○
Cocaine (crack, rock, freebase)	○	○	○	○	○	○	○	○
Methamphetamine (crystal meth, ice, crank)	○	○	○	○	○	○	○	○
Other amphetamines (diet pills, bennies)	○	○	○	○	○	○	○	○
Sedatives (downers,ludes)	○	○	○	○	○	○	○	○
Hallucinogens (LSD, PCP)	○	○	○	○	○	○	○	○
Anabolic steroids (Testosterone)	○	○	○	○	○	○	○	○
Opiates (heroin, smack)	○	○	○	○	○	○	○	○
Inhalants (glue, solvents, gas)	○	○	○	○	○	○	○	○
MDMA (Ecstasy)	○	○	○	○	○	○	○	○
Other club drugs (GHB, Ketamine, Rohypnol)	○	○	○	○	○	○	○	○
Other illegal drugs	○	○	○	○	○	○	○	○

PLEASE DO NOT WRITE IN THIS AREA

SERIAL #

9. Within the **last 30 days**, how often do you think **the typical student at your school** used:

(State your best estimate; Please mark the appropriate column for each row)

	Never used	Have used, but not in **last 30 days**	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	Used daily
Cigarettes	○	○	○	○	○	○	○	○
Tobacco from a water pipe (hookah)	○	○	○	○	○	○	○	○
Cigars, little cigars, clove cigarettes	○	○	○	○	○	○	○	○
Smokeless tobacco	○	○	○	○	○	○	○	○
Alcohol (beer, wine, liquor)	○	○	○	○	○	○	○	○
Marijuana (pot, weed, hashish, hash oil)	○	○	○	○	○	○	○	○
Cocaine (crack, rock, freebase)	○	○	○	○	○	○	○	○
Methamphetamine (crystal meth, ice, crank)	○	○	○	○	○	○	○	○
Other amphetamines (diet pills, bennies)	○	○	○	○	○	○	○	○
Sedatives (downers,ludes)	○	○	○	○	○	○	○	○
Hallucinogens (LSD, PCP)	○	○	○	○	○	○	○	○
Anabolic steroids (Testosterone)	○	○	○	○	○	○	○	○
Opiates (heroin, smack)	○	○	○	○	○	○	○	○
Inhalants (glue, solvents, gas)	○	○	○	○	○	○	○	○
MDMA (Ecstasy)	○	○	○	○	○	○	○	○
Other club drugs (GHB, Ketamine, Rohypnol)	○	○	○	○	○	○	○	○
Other illegal drugs	○	○	○	○	○	○	○	○

One drink of alcohol is defined as a 12 oz. can or bottle of beer or wine cooler, a 4 oz. glass of wine, or a shot of liquor straight or in a mixed drink.

10. The **last time** you "partied"/socialized how many **drinks of alcohol** did you have? (If you did not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

DRINKS

11. The **last time** you "partied"/socialized over how many **hours** did you drink alcohol? (If you did not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

HOURS

12. How many **drinks of alcohol** do you think **the typical student at your school** had the **last time** he/she "partied"/socialized? (If you think the typical student at your school does not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

DRINKS

13. Over the **last two weeks**, how many times have you had five or more drinks of alcohol at a sitting?

○ N/A, don't drink	○ 2 times	○ 5 times	○ 8 times
○ None	○ 3 times	○ 6 times	○ 9 times
○ 1 time	○ 4 times	○ 7 times	○ 10 or more times

14. Within the **last 30 days**, did you:

(Please mark the appropriate column for each row)

	Yes	No	N/A, don't drink	N/A, don't drive
Drive after drinking any alcohol at all	○	○	○	○
Drive after drinking five or more drinks of alcohol	○	○	○	○

15. During the **last 12 months**, when you "partied"/socialized, how often did you:
(Please mark the appropriate column for each row)

	N/A, don't drink	Never	Rarely	Sometimes	Most of the time	Always
Alternate non-alcoholic with alcoholic beverages	○	○	○	○	○	○
Avoid drinking games	○	○	○	○	○	○
Choose not to drink alcohol	○	○	○	○	○	○
Determine, in advance, not to exceed a set number of drinks	○	○	○	○	○	○
Eat before and/or during drinking	○	○	○	○	○	○
Have a friend let you know when you have had enough	○	○	○	○	○	○
Keep track of how many drinks you were having	○	○	○	○	○	○
Pace your drinks to 1 or fewer per hour	○	○	○	○	○	○
Stay with the same group of friends the entire time you were drinking	○	○	○	○	○	○
Stick with only one kind of alcohol when drinking	○	○	○	○	○	○
Use a designated driver	○	○	○	○	○	○

16. Within the **last 12 months**, have you experienced any of the following **as a consequence of your drinking**?
(Please mark the appropriate column for each row)

	N/A, don't drink	No	Yes
Did something you later regretted	○	○	○
Forgot where you were or what you did	○	○	○
Got in trouble with the police	○	○	○
Had sex with someone **without giving** your consent	○	○	○
Had sex with someone **without getting** their consent	○	○	○
Had unprotected sex	○	○	○
Physically injured yourself	○	○	○
Physically injured another person	○	○	○
Seriously considered suicide	○	○	○

17. Within the **last 30 days**, what **percent** of students at your school used:
State your best estimate. (If less than 10, please enter 00, 01, 02, etc.)

Cigarettes % Used	Alcohol % Used	Marijuana % Used
00 01 02 03 04 05 06 07 08 09 10	00 01 02 03 04 05 06 07 08 09 10	00 01 02 03 04 05 06 07 08 09 10

18. Within the **last 12 months**, have you taken any of the following **prescription drugs** that were not prescribed to you?
(Please mark the appropriate column for each row)

	No	Yes
Antidepressants (e.g., Celexa, Lexapro, Prozac, Wellbutrin, Zoloft)	○	○
Erectile dysfunction drugs (e.g., Viagra, Cialis, Levitra)	○	○
Pain killers (e.g., OxyContin, Vicodin, Codeine)	○	○
Sedatives (e.g., Xanax, Valium)	○	○
Stimulants (e.g., Ritalin, Adderall)	○	○

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SERIAL #

Sex Behavior and Contraception

19. Within the **last 12 months**, with how many partners have you had oral sex, vaginal intercourse, or anal intercourse? (If you did not have a sex partner within the last 12 months, please enter 00. If less than 10, enter 01, 02, 03, etc.) → PARTNERS

20. Within **last 12 months**, did you have sexual partner(s) who were:

(Please mark the appropriate column for each row)

	Yes	No
Female	○	○
Male	○	○
Transgender	○	○

21. Within the **last 30 days**, did you have:

(Please mark the appropriate column for each row)

	Yes	No, have done this sexual activity in the past but not in the **last 30 days**	No, have never done this sexual activity
Oral sex?	○	○	○
Vaginal intercourse?	○	○	○
Anal intercourse?	○	○	○

22. Within the **last 30 days**, how often did you or your partner(s) use a condom or other protective barrier (e.g., male condom, female condom, dam, glove) during:

(Please mark the appropriate column for each row)

	Have not done this sexual activity during the **last 30 days**	N/A, never did this sexual activity	Never	Rarely	Sometimes	Most of the time	Always
Oral sex?	○	○	○	○	○	○	○
Vaginal intercourse?	○	○	○	○	○	○	○
Anal intercourse?	○	○	○	○	○	○	○

CONDOM/ BARRIER USE

23A. Did you or your partner use a method of birth control to prevent pregnancy **the last time** you had vaginal intercourse?

- ○ Yes (continue to item 23B)
- ○ N/A, have not had vaginal intercourse (skip to item 24)
- ○ No, have not had vaginal intercourse that could result in a pregnancy (skip to item 24)
- ○ No, did not want to prevent pregnancy (skip to item 24)
- ○ No, did not use any birth control method (skip to item 24)
- ○ Don't know (skip to item 24)

23B. Please indicate whether or not you or your partner used each of the following methods of birth control to prevent pregnancy **the last time** you had vaginal intercourse. (Please mark the appropriate column for each row)

	Yes	No		Yes	No
Birth control pills (monthly or extended cycle)	○	○	Diaphragm or cervical cap	○	○
Birth control shots	○	○	Contraceptive sponge	○	○
Birth control implants	○	○	Spermicide (e.g., foam, jelly, cream)	○	○
Birth control patch	○	○	Fertility awareness (e.g., calendar, mucous, basal body temperature)	○	○
Vaginal ring	○	○	Withdrawal	○	○
Intrauterine device (IUD)	○	○	Sterilization (e.g., hysterectomy, tubes tied, or vasectomy)	○	○
Male condom	○	○	Other method	○	○
Female condom	○	○			

24. Within the **last 12 months**, have you or your partner(s) used emergency contraception ("morning after pill")?

- ○ N/A, have not had vaginal intercourse in the **last 12 months**
- ○ No
- ○ Yes
- ○ Don't know

25. Within the **last 12 months**, have you or your partner(s) become pregnant?

- ○ N/A, have not had vaginal intercourse in the **last 12 months**
- ○ No
- ○ Yes, unintentionally
- ○ Yes, intentionally
- ○ Don't know

Weight, Nutrition, and Exercise

26. How do you describe your weight?

- ○ Very underweight
- ○ Slightly underweight
- ○ About the right weight
- ○ Slightly overweight
- ○ Very overweight

27. Are you trying to do any of the following about your weight?

- ○ I am not trying to do anything about my weight
- ○ Stay the same weight
- ○ Lose weight
- ○ Gain weight

28. How many servings of fruits and vegetables do you usually have **per day**?
(1 serving = 1 medium piece of fruit; 1/2 cup fresh, frozen, or canned fruits/vegetables; 3/4 cup fruit/vegetable juice; 1 cup salad greens; or 1/4 cup dried fruit)

○ 0 servings per day ○ 1–2 servings per day ○ 3–4 servings per day ○ 5 or more servings per day

29. On how many of the **past 7 days** did you:

(Please mark the appropriate column for each row)

	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
Do **moderate-intensity** cardio or aerobic exercise (caused a noticeable increase in heart rate, such as a brisk walk) for at least **30 minutes**?	○	○	○	○	○	○	○	○
Do **vigorous-intensity** cardio or aerobic exercise (caused large increases in breathing or heart rate, such as jogging) for at least **20 minutes**?	○	○	○	○	○	○	○	○
Do 8-10 strength training exercises (such as resistance weight machines) for 8-12 repetitions each?	○	○	○	○	○	○	○	○

Mental Health

30. Have you ever:

(Please mark the appropriate column for each row)

	Yes, in the **last 12 months**	Yes, in the **last 30 days**	Yes, in the **last 2 weeks**	No, not in **last 12 months**	No, never
Felt things were hopeless	○	○	○	○	○
Felt overwhelmed by all you had to do	○	○	○	○	○
Felt exhausted (not from physical activity)	○	○	○	○	○
Felt very lonely	○	○	○	○	○
Felt very sad	○	○	○	○	○
Felt so depressed that it was difficult to function	○	○	○	○	○
Felt overwhelming anxiety	○	○	○	○	○
Felt overwhelming anger	○	○	○	○	○
Intentionally cut, burned, bruised, or otherwise injured yourself	○	○	○	○	○
Seriously considered suicide	○	○	○	○	○
Attempted suicide	○	○	○	○	○

31. Within the **last 12 months**, have you been diagnosed or treated **by a professional** for any of the following?

(Please mark the appropriate column for each row)

	Yes, other treatment	Yes, treated with medication and psychotherapy	Yes, treated with psychotherapy	Yes, treated with medication	Yes, diagnosed but not treated	No
Anorexia	○	○	○	○	○	○
Anxiety	○	○	○	○	○	○
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○	○	○	○	○
Bipolar Disorder	○	○	○	○	○	○
Bulimia	○	○	○	○	○	○
Depression	○	○	○	○	○	○
Insomnia	○	○	○	○	○	○
Other sleep disorder	○	○	○	○	○	○
Obsessive Compulsive Disorder (OCD)	○	○	○	○	○	○
Panic attacks	○	○	○	○	○	○
Phobia	○	○	○	○	○	○
Schizophrenia	○	○	○	○	○	○
Substance abuse or addiction (alcohol or other drugs)	○	○	○	○	○	○
Other addiction (e.g., gambling, internet, sexual)	○	○	○	○	○	○
Other mental health condition	○	○	○	○	○	○

32. Have you ever been diagnosed with depression? ○ No ○ Yes

33. Within the **last 12 months**, have any of the following been traumatic or very difficult for you to handle?

(Please mark the appropriate column for each row)

	Yes	No
Academics	○	○
Career-related issue	○	○
Death of a family member or friend	○	○
Family problems	○	○
Intimate relationships	○	○
Other social relationships	○	○
Finances	○	○
Health problem of a family member or partner	○	○
Personal appearance	○	○
Personal health issue	○	○
Sleep difficulties	○	○
Other	○	○

34. Have you ever received psychological or mental health services from any of the following?

(Please mark the appropriate column for each row)

	Yes	No
Counselor/Therapist/Psychologist	○	○
Psychiatrist	○	○
Other medical provider (e.g., physician, nurse practitioner)	○	○
Minister/Priest/Rabbi/Other clergy	○	○

PLEASE DO NOT WRITE IN THIS AREA

SERIAL #

35. **Have you ever received psychological or mental health services from your current college/university's Counseling or Health Service?**
○ No ○ Yes

36. **If in the future you were having a personal problem that was really bothering you, would you consider seeking help from a mental health professional?**
○ No ○ Yes

37. **Within the last 12 months, how would you rate the overall level of stress you have experienced?**
○ No stress
○ Less than average stress
○ Average stress
○ More than average stress
○ Tremendous stress

Physical Health

38. **Within the last 30 days, did you do any of the following?**
(Please mark the appropriate column for each row)

	Yes	No
Exercise to lose weight	○	○
Diet to lose weight	○	○
Vomit or take laxatives to lose weight	○	○
Take diet pills to lose weight	○	○

39. **Have you:**
(Please mark the appropriate column for each row)

	Don't know	Yes	No
Had a dental exam and cleaning in the last 12 months?	○	○	○
(Males) Performed testicular self exam in the last 30 days?	○	○	○
(Females) Performed breast self exam in the last 30 days?	○	○	○
(Females) Had a routine gynecological exam in the last 12 months?	○	○	○
Used sunscreen regularly with sun exposure?	○	○	○
Ever been tested for Human Immunodeficiency Virus (HIV) infection?	○	○	○

40. **Have you received the following vaccinations (shots)?**
(Please mark the appropriate column for each row)

	Don't know	Yes	No
Hepatitis B	○	○	○
Human Papillomavirus/HPV (cervical cancer vaccine)	○	○	○
Influenza (the flu) in the last 12 months (shot or nasal mist)	○	○	○
Measles, Mumps, Rubella	○	○	○
Meningococcal disease (meningococcal meningitis)	○	○	○
Varicella (chicken pox)	○	○	○

41. Within the **last 12 months**, have you been diagnosed or treated **by a professional** for any of the following?

(Please mark the appropriate column for each row)

	Yes	No
Allergies	○	○
Asthma	○	○
Back pain	○	○
Broken bone/Fracture/Sprain	○	○
Bronchitis	○	○
Chlamydia	○	○
Diabetes	○	○
Ear infection	○	○
Endometriosis	○	○
Genital herpes	○	○
Genital warts/Human Papillomavirus (HPV)	○	○
Gonorrhea	○	○
Hepatitis B or C	○	○
High blood pressure	○	○
High cholesterol	○	○
Human Immunodeficiency Virus (HIV)	○	○
Irritable Bowel Syndrome (IBS)	○	○
Migraine headache	○	○
Mononucleosis	○	○
Pelvic Inflammatory Disease (PID)	○	○
Repetitive stress injury (e.g., carpal tunnel syndrome)	○	○
Sinus infection	○	○
Strep throat	○	○
Tuberculosis	○	○
Urinary tract infection	○	○

42. On how many of the **past 7 days** did you get enough sleep so that you felt rested when you woke up in the morning?

○ 0 days ○ 1 day ○ 2 days ○ 3 days ○ 4 days ○ 5 days ○ 6 days ○ 7 days

43. People sometimes feel sleepy during the daytime. In the **past 7 days**, how much of a problem have you had with sleepiness (feeling sleepy, struggling to stay awake) during your daytime activities?

○ No problem at all
○ A little problem
○ More than a little problem
○ A big problem
○ A very big problem

44. In the **past 7 days**, how often have you:

(Please mark the appropriate column for each row)

	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
Awakened too early in the morning and couldn't get back to sleep?	○	○	○	○	○	○	○	○
Felt tired, dragged out or sleepy during the day?	○	○	○	○	○	○	○	○
Gone to bed because you just could not stay awake any longer?	○	○	○	○	○	○	○	○
Had an extremely hard time falling asleep?	○	○	○	○	○	○	○	○

PLEASE DO NOT WRITE IN THIS AREA

SERIAL #

Impediments to Academic Performance

(Please select the most serious outcome for each item below)

	Significant disruption in thesis, dissertation, research, or practicum work	Received an incomplete or dropped the course	Received a lower grade in the course	Received a lower grade on an exam or important project	I have experienced this issue but my academics have not been affected	This did not happen to me/not applicable
45. Within the **last 12 months**, have any of the following affected your academic performance?						
Alcohol use	○	○	○	○	○	○
Allergies	○	○	○	○	○	○
Anxiety	○	○	○	○	○	○
Assault (physical)	○	○	○	○	○	○
Assault (sexual)	○	○	○	○	○	○
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○	○	○	○	○
Cold/Flu/Sore throat	○	○	○	○	○	○
Concern for a troubled friend or family member	○	○	○	○	○	○
Chronic health problem or serious illness (e.g., diabetes, asthma, cancer)	○	○	○	○	○	○
Chronic pain	○	○	○	○	○	○
Death of a friend or family member	○	○	○	○	○	○
Depression	○	○	○	○	○	○
Discrimination (e.g., homophobia, racism, sexism)	○	○	○	○	○	○
Drug use	○	○	○	○	○	○
Eating disorder/problem	○	○	○	○	○	○
Finances	○	○	○	○	○	○
Gambling	○	○	○	○	○	○
Homesickness	○	○	○	○	○	○
Injury (fracture, sprain, strain, cut)	○	○	○	○	○	○
Internet use/computer games	○	○	○	○	○	○
Learning disability	○	○	○	○	○	○
Participation in extracurricular activities (e.g., campus clubs, organizations, athletics)	○	○	○	○	○	○
Pregnancy (yours or your partner's)	○	○	○	○	○	○
Relationship difficulties	○	○	○	○	○	○
Roommate difficulties	○	○	○	○	○	○
Sexually transmitted disease/infection (STD/I)	○	○	○	○	○	○
Sinus infection/Ear infection/Bronchitis/Strep throat	○	○	○	○	○	○
Sleep difficulties	○	○	○	○	○	○
Stress	○	○	○	○	○	○
Work	○	○	○	○	○	○
Other (please specify: _____)	○	○	○	○	○	○

Demographic Characteristics

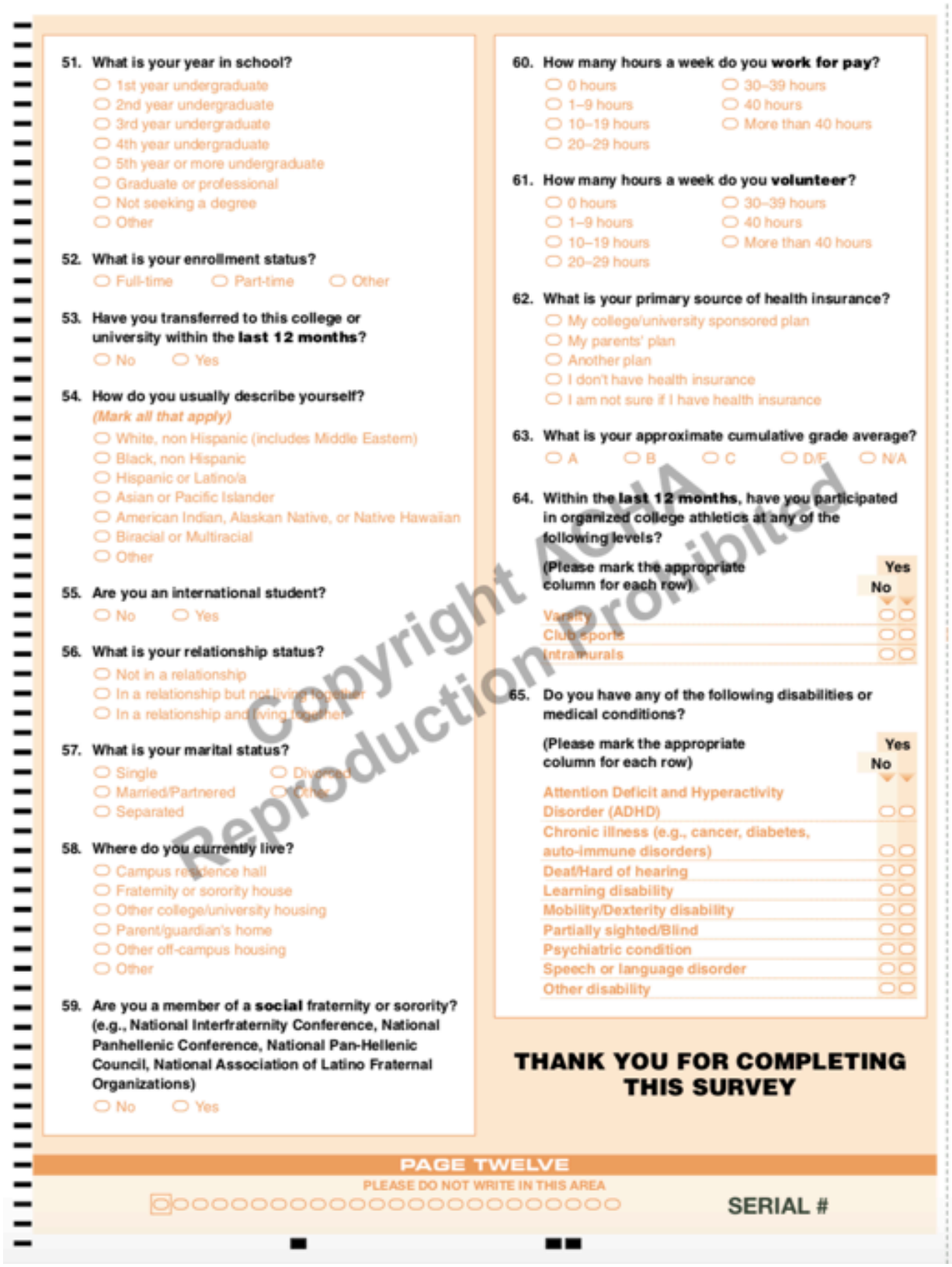
46. How old are you? → Years

47. What is your gender?
- ○ Female
- ○ Male
- ○ Transgender

48. What is your sexual orientation?
- ○ Heterosexual
- ○ Gay/Lesbian
- ○ Bisexual
- ○ Unsure

49. What is your height in feet and inches? → Ft. / Inch (HEIGHT)

50. What is your weight in pounds? → Pounds (WEIGHT)



51. What is your year in school?
- 1st year undergraduate
- 2nd year undergraduate
- 3rd year undergraduate
- 4th year undergraduate
- 5th year or more undergraduate
- Graduate or professional
- Not seeking a degree
- Other

52. What is your enrollment status?
- Full-time
- Part-time
- Other

53. Have you transferred to this college or university within the **last 12 months**?
- No
- Yes

54. How do you usually describe yourself? *(Mark all that apply)*
- White, non Hispanic (includes Middle Eastern)
- Black, non Hispanic
- Hispanic or Latino/a
- Asian or Pacific Islander
- American Indian, Alaskan Native, or Native Hawaiian
- Biracial or Multiracial
- Other

55. Are you an international student?
- No
- Yes

56. What is your relationship status?
- Not in a relationship
- In a relationship but not living together
- In a relationship and living together

57. What is your marital status?
- Single
- Married/Partnered
- Separated
- Divorced
- Other

58. Where do you currently live?
- Campus residence hall
- Fraternity or sorority house
- Other college/university housing
- Parent/guardian's home
- Other off-campus housing
- Other

59. Are you a member of a **social** fraternity or sorority? (e.g., National Interfraternity Conference, National Panhellenic Conference, National Pan-Hellenic Council, National Association of Latino Fraternal Organizations)
- No
- Yes

60. How many hours a week do you **work for pay**?
- 0 hours
- 1–9 hours
- 10–19 hours
- 20–29 hours
- 30–39 hours
- 40 hours
- More than 40 hours

61. How many hours a week do you **volunteer**?
- 0 hours
- 1–9 hours
- 10–19 hours
- 20–29 hours
- 30–39 hours
- 40 hours
- More than 40 hours

62. What is your primary source of health insurance?
- My college/university sponsored plan
- My parents' plan
- Another plan
- I don't have health insurance
- I am not sure if I have health insurance

63. What is your approximate cumulative grade average?
- A
- B
- C
- D/F
- N/A

64. Within the **last 12 months**, have you participated in organized college athletics at any of the following levels?

(Please mark the appropriate column for each row)	Yes	No
Varsity	○	○
Club sports	○	○
Intramurals	○	○

65. Do you have any of the following disabilities or medical conditions?

(Please mark the appropriate column for each row)	Yes	No
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○
Chronic illness (e.g., cancer, diabetes, auto-immune disorders)	○	○
Deaf/Hard of hearing	○	○
Learning disability	○	○
Mobility/Dexterity disability	○	○
Partially sighted/Blind	○	○
Psychiatric condition	○	○
Speech or language disorder	○	○
Other disability	○	○

THANK YOU FOR COMPLETING THIS SURVEY

PLEASE DO NOT WRITE IN THIS AREA

SERIAL #

Appendix N: NCHA IIb

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ACHA NCHA II

American College Health Association **National College Health Assessment**

Instructions:

The following questions ask about various aspects of your health.

To answer the questions, fill in the oval that corresponds to your response.

Select only one response unless instructed otherwise.

Use a No. 2 pencil or blue or black ink pen only. Do not use pens with ink that soaks through the paper. CORRECT: ● INCORRECT: ✓ ✗ ▬ ⊙

This survey is completely voluntary. You may choose not to participate or not to answer any specific question. You may skip any question you are not comfortable in answering.

Please make no marks of any kind on the survey which could identify you individually.

Composite data will then be shared with your campus for use in health promotion activities.

Thank you for taking the time and thought to complete this survey. We appreciate your participation!

American College Health Association

National College Health Assessment

PAGE ONE

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SERIAL #

Health, Health Education and Safety

1. **How would you describe your general health?**
   ○ Excellent ○ Very good ○ Good ○ Fair ○ Poor ○ Don't know

(Please mark the appropriate column for each question to the right)	2. Have you received information on the following topics from your college or university?		3. Are you interested in receiving information on the following topics from your college or university?	
	No	Yes	No	Yes
Alcohol and other drug use	○	○	○	○
Cold/Flu/Sore throat	○	○	○	○
Depression/Anxiety	○	○	○	○
Eating disorders	○	○	○	○
Grief and loss	○	○	○	○
How to help others in distress	○	○	○	○
Injury prevention	○	○	○	○
Nutrition	○	○	○	○
Physical activity	○	○	○	○
Pregnancy prevention	○	○	○	○
Problem use of Internet/computer games	○	○	○	○
Relationship difficulties	○	○	○	○
Sexual assault/Relationship violence prevention	○	○	○	○
Sexually transmitted disease/infection (STD/I) prevention	○	○	○	○
Sleep difficulties	○	○	○	○
Stress reduction	○	○	○	○
Suicide prevention	○	○	○	○
Tobacco use	○	○	○	○
Violence prevention	○	○	○	○

4. Within the **last 12 months**, how often did you: (Please mark the appropriate column for each row)	Always	Most of the time	Sometimes	Rarely	Never	N/A, did not do this activity within the **last 12 months**
Wear a seatbelt when you rode in a car?	○	○	○	○	○	○
Wear a helmet when you rode a bicycle?	○	○	○	○	○	○
Wear a helmet when you rode a motorcycle?	○	○	○	○	○	○
Wear a helmet when you were inline skating?	○	○	○	○	○	○

5. Within the **last 12 months**: (Please mark the appropriate column for each row)	Yes	No
Were you in a physical fight?	○	○
Were you physically assaulted (do not include sexual assault)?	○	○
Were you verbally threatened?	○	○
Were you sexually touched without your consent?	○	○
Was sexual penetration attempted (vaginal, anal, oral) without your consent?	○	○
Were you sexually penetrated (vaginal, anal, oral) without your consent?	○	○
Were you a victim of stalking (e.g., waiting for you outside your classroom, residence, or office; repeated emails/phone calls)?	○	○

6. **Within the last 12 months, have you been in an intimate (coupled/partnered) relationship that was:**
(Please mark the appropriate column for each row)

	Yes	No
Emotionally abusive? (e.g., called derogatory names, yelled at, ridiculed)	○	○
Physically abusive? (e.g., kicked, slapped, punched)	○	○
Sexually abusive? (e.g., forced to have sex when you didn't want it, forced to perform or have an unwanted sexual act performed on you)	○	○

7. **How safe do you feel:**
(Please mark the appropriate column for each row)

	Very safe	Somewhat safe	Somewhat unsafe	Not safe at all
On this campus (daytime)?	○	○	○	○
On this campus (nighttime)?	○	○	○	○
In the community surrounding this school (daytime)?	○	○	○	○
In the community surrounding this school (nighttime)?	○	○	○	○

Alcohol, Tobacco, and Drugs

8. **Within the last 30 days, on how many days did you use:**
(Please mark the appropriate column for each row)

	Never used	Have used, but not in last 30 days	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	Used daily
Cigarettes	○	○	○	○	○	○	○	○
Tobacco from a water pipe (hookah)	○	○	○	○	○	○	○	○
Cigars, little cigars, clove cigarettes	○	○	○	○	○	○	○	○
Smokeless tobacco	○	○	○	○	○	○	○	○
Alcohol (beer, wine, liquor)	○	○	○	○	○	○	○	○
Marijuana (pot, weed, hashish, hash oil)	○	○	○	○	○	○	○	○
Cocaine (crack, rock, freebase)	○	○	○	○	○	○	○	○
Methamphetamine (crystal meth, ice, crank)	○	○	○	○	○	○	○	○
Other amphetamines (diet pills, bennies)	○	○	○	○	○	○	○	○
Sedatives (downers,ludes)	○	○	○	○	○	○	○	○
Hallucinogens (LSD, PCP)	○	○	○	○	○	○	○	○
Anabolic steroids (Testosterone)	○	○	○	○	○	○	○	○
Opiates (heroin, smack)	○	○	○	○	○	○	○	○
Inhalants (glue, solvents, gas)	○	○	○	○	○	○	○	○
MDMA (Ecstasy)	○	○	○	○	○	○	○	○
Other club drugs (GHB, Ketamine, Rohypnol)	○	○	○	○	○	○	○	○
Other illegal drugs	○	○	○	○	○	○	○	○

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SERIAL #

9. **Within the last 30 days, how often do you think the typical student at your school used:**

(State your best estimate; Please mark the appropriate column for each row)

	Never used	Have used, but not in last 30 days	1-2 days	3-5 days	6-9 days	10-19 days	20-29 days	Used daily
Cigarettes	○	○	○	○	○	○	○	○
Tobacco from a water pipe (hookah)	○	○	○	○	○	○	○	○
Cigars, little cigars, clove cigarettes	○	○	○	○	○	○	○	○
Smokeless tobacco	○	○	○	○	○	○	○	○
Alcohol (beer, wine, liquor)	○	○	○	○	○	○	○	○
Marijuana (pot, weed, hashish, hash oil)	○	○	○	○	○	○	○	○
Cocaine (crack, rock, freebase)	○	○	○	○	○	○	○	○
Methamphetamine (crystal meth, ice, crank)	○	○	○	○	○	○	○	○
Other amphetamines (diet pills, bennies)	○	○	○	○	○	○	○	○
Sedatives (downers, ludes)	○	○	○	○	○	○	○	○
Hallucinogens (LSD, PCP)	○	○	○	○	○	○	○	○
Anabolic steroids (Testosterone)	○	○	○	○	○	○	○	○
Opiates (heroin, smack)	○	○	○	○	○	○	○	○
Inhalants (glue, solvents, gas)	○	○	○	○	○	○	○	○
MDMA (Ecstasy)	○	○	○	○	○	○	○	○
Other club drugs (GHB, Ketamine, Rohypnol)	○	○	○	○	○	○	○	○
Other illegal drugs	○	○	○	○	○	○	○	○

One drink of alcohol is defined as a 12 oz. can or bottle of beer or wine cooler, a 4 oz. glass of wine, or a shot of liquor straight or in a mixed drink.

10. **The last time you "partied"/socialized how many drinks of alcohol did you have? (If you did not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)**

DRINKS ⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨

11. **The last time you "partied"/socialized over how many hours did you drink alcohol? (If you did not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)**

HOURS ⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨

12. **How many drinks of alcohol do you think the typical student at your school had the last time he/she "partied"/socialized? (If you think the typical student at your school does not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)**

DRINKS ⓪⓪ ①① ②② ③③ ④④ ⑤⑤ ⑥⑥ ⑦⑦ ⑧⑧ ⑨⑨

13. **Over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting?**

○ N/A, don't drink ○ None ○ 1 time ○ 2 times ○ 3 times ○ 4 times ○ 5 times ○ 6 times ○ 7 times ○ 8 times ○ 9 times ○ 10 or more times

14. **Within the last 30 days, did you:**

(Please mark the appropriate column for each row)

	Yes	No	N/A, don't drink	N/A, don't drive
Drive after drinking any alcohol at all	○	○	○	○
Drive after drinking five or more drinks of alcohol	○	○	○	○

15. During the **last 12 months**, when you "partied"/socialized, how often did you:

(Please mark the appropriate column for each row)

	N/A, don't drink	Never	Rarely	Sometimes	Most of the time	Always
Alternate non-alcoholic with alcoholic beverages	○	○	○	○	○	○
Avoid drinking games	○	○	○	○	○	○
Choose not to drink alcohol	○	○	○	○	○	○
Determine, in advance, not to exceed a set number of drinks	○	○	○	○	○	○
Eat before and/or during drinking	○	○	○	○	○	○
Have a friend let you know when you have had enough	○	○	○	○	○	○
Keep track of how many drinks you were having	○	○	○	○	○	○
Pace your drinks to 1 or fewer per hour	○	○	○	○	○	○
Stay with the same group of friends the entire time you were drinking	○	○	○	○	○	○
Stick with only one kind of alcohol when drinking	○	○	○	○	○	○
Use a designated driver	○	○	○	○	○	○

16. Within the **last 12 months**, have you experienced any of the following **when drinking alcohol?**

(Please mark the appropriate column for each row)

	N/A, don't drink	No	Yes
Did something you later regretted	○	○	○
Forgot where you were or what you did	○	○	○
Got in trouble with the police	○	○	○
Someone had sex with me **without my** consent	○	○	○
Had sex with someone **without their** consent	○	○	○
Had unprotected sex	○	○	○
Physically injured yourself	○	○	○
Physically injured another person	○	○	○
Seriously considered suicide	○	○	○

17. Within the **last 30 days**, what percent of students at your school used: State your best estimate. (If less than 10, please enter 00, 01, 02, etc.)

Cigarettes % Used	Alcohol % Used	Marijuana % Used
00 01 02 03 04 05 06 07 08 09	00 01 02 03 04 05 06 07 08 09	00 01 02 03 04 05 06 07 08 09

18. Within the **last 12 months**, have you taken any of the following **prescription drugs** that were not prescribed to you?

(Please mark the appropriate column for each row)

	No	Yes
Antidepressants (e.g., Celexa, Lexapro, Prozac, Wellbutrin, Zoloft)	○	○
Erectile dysfunction drugs (e.g., Viagra, Cialis, Levitra)	○	○
Pain killers (e.g., OxyContin, Vicodin, Codeine)	○	○
Sedatives (e.g., Xanax, Valium)	○	○
Stimulants (e.g., Ritalin, Adderall)	○	○

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SERIAL #

Sex Behavior and Contraception

19. Within the **last 12 months**, with how many partners have you had oral sex, vaginal intercourse, or anal intercourse? (If you did not have a sex partner within the last 12 months, please enter 00. If less than 10, enter 01, 02, 03, etc.) → PARTNERS

20. Within **last 12 months**, did you have sexual partner(s) who were:

(Please mark the appropriate column for each row)

	Yes	No
Female	○	○
Male	○	○
Transgender	○	○

21. Within the **last 30 days**, did you have:

(Please mark the appropriate column for each row)

	Yes	No, have done this sexual activity in the past but not in the last 30 days	No, have never done this sexual activity
Oral sex?	○	○	○
Vaginal intercourse?	○	○	○
Anal intercourse?	○	○	○

22. Within the **last 30 days**, how often did you or your partner(s) use a condom or other protective barrier (e.g., male condom, female condom, dam, glove) during:

(Please mark the appropriate column for each row)

	Have not done this sexual activity during the last 30 days / N/A, never did this sexual activity	Never	Rarely	Sometimes	Most of the time	Always
Oral sex?	○	○	○	○	○	○
Vaginal intercourse?	○	○	○	○	○	○
Anal intercourse?	○	○	○	○	○	○

CONDOM/ BARRIER USE

23A. Did you or your partner use a method of birth control to prevent pregnancy **the last time** you had vaginal intercourse?

- ○ Yes (continue to item 23B)
- ○ N/A, have not had vaginal intercourse (skip to item 24)
- ○ No, have not had vaginal intercourse that could result in a pregnancy (skip to item 24)
- ○ No, did not want to prevent pregnancy (skip to item 24)
- ○ No, did not use any birth control method (skip to item 24)
- ○ Don't know (skip to item 24)

23B. Please indicate whether or not you or your partner used each of the following methods of birth control to prevent pregnancy **the last time** you had vaginal intercourse. (Please mark the appropriate column for each row)

	Yes	No		Yes	No
Birth control pills (monthly or extended cycle)	○	○	Diaphragm or cervical cap	○	○
Birth control shots	○	○	Contraceptive sponge	○	○
Birth control implants	○	○	Spermicide (e.g., foam, jelly, cream)	○	○
Birth control patch	○	○	Fertility awareness (e.g., calendar, mucous, basal body temperature)	○	○
Vaginal ring	○	○	Withdrawal	○	○
Intrauterine device (IUD)	○	○	Sterilization (e.g., hysterectomy, tubes tied, or vasectomy)	○	○
Male condom	○	○	Other method	○	○
Female condom	○	○			

24. **Within the last 12 months, have you or your partner(s) used emergency contraception ("morning after pill")?**

- ⬭ N/A, have not had vaginal intercourse in the **last 12 months**
- ⬭ No
- ⬭ Yes
- ⬭ Don't know

25. **Within the last 12 months, have you or your partner(s) become pregnant?**

- ⬭ N/A, have not had vaginal intercourse in the **last 12 months**
- ⬭ No
- ⬭ Yes, unintentionally
- ⬭ Yes, intentionally
- ⬭ Don't know

Weight, Nutrition, and Exercise

26. **How do you describe your weight?**

- ⬭ Very underweight
- ⬭ Slightly underweight
- ⬭ About the right weight
- ⬭ Slightly overweight
- ⬭ Very overweight

27. **Are you trying to do any of the following about your weight?**

- ⬭ I am not trying to do anything about my weight
- ⬭ Stay the same weight
- ⬭ Lose weight
- ⬭ Gain weight

28. **How many servings of fruits and vegetables do you usually have per day?**
(1 serving = 1 medium piece of fruit; 1/2 cup fresh, frozen, or canned fruits/vegetables; 3/4 cup fruit/vegetable juice; 1 cup salad greens; or 1/4 cup dried fruit)

⬭ 0 servings per day ⬭ 1–2 servings per day ⬭ 3–4 servings per day ⬭ 5 or more servings per day

29. **On how many of the past 7 days did you:**

(Please mark the appropriate column for each row)

	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
Do **moderate-intensity** cardio or aerobic exercise (caused a noticeable increase in heart rate, such as a brisk walk) for at least **30 minutes?**	⬭	⬭	⬭	⬭	⬭	⬭	⬭	⬭
Do **vigorous-intensity** cardio or aerobic exercise (caused large increases in breathing or heart rate, such as jogging) for at least **20 minutes?**	⬭	⬭	⬭	⬭	⬭	⬭	⬭	⬭
Do 8-10 strength training exercises (such as resistance weight machines) for 8-12 repetitions each?	⬭	⬭	⬭	⬭	⬭	⬭	⬭	⬭

Mental Health

30. **Have you ever:**

(Please mark the appropriate column for each row)

	Yes, in the last 12 months	Yes, in the last 30 days	Yes, in the last 2 weeks	No, not in last 12 months	No, never
Felt things were hopeless	⬭	⬭	⬭	⬭	⬭
Felt overwhelmed by all you had to do	⬭	⬭	⬭	⬭	⬭
Felt exhausted (not from physical activity)	⬭	⬭	⬭	⬭	⬭
Felt very lonely	⬭	⬭	⬭	⬭	⬭
Felt very sad	⬭	⬭	⬭	⬭	⬭
Felt so depressed that it was difficult to function	⬭	⬭	⬭	⬭	⬭
Felt overwhelming anxiety	⬭	⬭	⬭	⬭	⬭
Felt overwhelming anger	⬭	⬭	⬭	⬭	⬭
Intentionally cut, burned, bruised, or otherwise injured yourself	⬭	⬭	⬭	⬭	⬭
Seriously considered suicide	⬭	⬭	⬭	⬭	⬭
Attempted suicide	⬭	⬭	⬭	⬭	⬭

31. **Within the last 12 months, have you been diagnosed or treated by a professional for any of the following?**

(Please mark the appropriate column for each row)

	Yes, other treatment	Yes, treated with medication and psychotherapy	Yes, treated with psychotherapy	Yes, treated with medication	Yes, diagnosed but not treated	No
Anorexia	○	○	○	○	○	○
Anxiety	○	○	○	○	○	○
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○	○	○	○	○
Bipolar Disorder	○	○	○	○	○	○
Bulimia	○	○	○	○	○	○
Depression	○	○	○	○	○	○
Insomnia	○	○	○	○	○	○
Other sleep disorder	○	○	○	○	○	○
Obsessive Compulsive Disorder (OCD)	○	○	○	○	○	○
Panic attacks	○	○	○	○	○	○
Phobia	○	○	○	○	○	○
Schizophrenia	○	○	○	○	○	○
Substance abuse or addiction (alcohol or other drugs)	○	○	○	○	○	○
Other addiction (e.g., gambling, internet, sexual)	○	○	○	○	○	○
Other mental health condition	○	○	○	○	○	○

32. **Have you ever been diagnosed with depression?** ○ No ○ Yes

33. **Within the last 12 months, have any of the following been traumatic or very difficult for you to handle?**

(Please mark the appropriate column for each row)

	Yes	No
Academics	○	○
Career-related issue	○	○
Death of a family member or friend	○	○
Family problems	○	○
Intimate relationships	○	○
Other social relationships	○	○
Finances	○	○
Health problem of a family member or partner	○	○
Personal appearance	○	○
Personal health issue	○	○
Sleep difficulties	○	○
Other	○	○

34. **Have you ever received psychological or mental health services from any of the following?**

(Please mark the appropriate column for each row)

	Yes	No
Counselor/Therapist/Psychologist	○	○
Psychiatrist	○	○
Other medical provider (e.g., physician, nurse practitioner)	○	○
Minister/Priest/Rabbi/Other clergy	○	○

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SERIAL #

35. **Have you ever received psychological or mental health services from your current college/university's Counseling or Health Service?**
○ No ○ Yes

36. **If in the future you were having a personal problem that was really bothering you, would you consider seeking help from a mental health professional?**
○ No ○ Yes

37. **Within the last 12 months, how would you rate the overall level of stress you have experienced?**
○ No stress
○ Less than average stress
○ Average stress
○ More than average stress
○ Tremendous stress

Physical Health

38. **Within the last 30 days, did you do any of the following?**
(Please mark the appropriate column for each row)

	Yes	No
Exercise to lose weight	○	○
Diet to lose weight	○	○
Vomit or take laxatives to lose weight	○	○
Take diet pills to lose weight	○	○

39. **Have you:**
(Please mark the appropriate column for each row)

	Don't know	Yes	No
Had a dental exam and cleaning in the last 12 months?	○	○	○
(Males) Performed testicular self exam in the last 30 days?	○	○	○
(Females) Performed breast self exam in the last 30 days?	○	○	○
(Females) Had a routine gynecological exam in the last 12 months?	○	○	○
Used sunscreen regularly with sun exposure?	○	○	○
Ever been tested for Human Immunodeficiency Virus (HIV) infection?	○	○	○

40. **Have you received the following vaccinations (shots)?**
(Please mark the appropriate column for each row)

	Don't know	Yes	No
Hepatitis B	○	○	○
Human Papillomavirus/HPV (cervical cancer vaccine)	○	○	○
Influenza (the flu) in the last 12 months (shot or nasal mist)	○	○	○
Measles, Mumps, Rubella	○	○	○
Meningococcal disease (meningococcal meningitis)	○	○	○
Varicella (chicken pox)	○	○	○

41. **Within the last 12 months, have you been diagnosed or treated by a professional for any of the following?**

(Please mark the appropriate column for each row)

	Yes	No		Yes	No
Allergies	○	○	High blood pressure	○	○
Asthma	○	○	High cholesterol	○	○
Back pain	○	○	Human Immunodeficiency Virus (HIV)	○	○
Broken bone/Fracture/Sprain	○	○	Irritable Bowel Syndrome (IBS)	○	○
Bronchitis	○	○	Migraine headache	○	○
Chlamydia	○	○	Mononucleosis	○	○
Diabetes	○	○	Pelvic Inflammatory Disease (PID)	○	○
Ear infection	○	○	Repetitive stress injury		
Endometriosis	○	○	(e.g., carpal tunnel syndrome)	○	○
Genital herpes	○	○	Sinus infection	○	○
Genital warts/Human Papillomavirus (HPV)	○	○	Strep throat	○	○
Gonorrhea	○	○	Tuberculosis	○	○
Hepatitis B or C	○	○	Urinary tract infection	○	○

42. **On how many of the past 7 days did you get enough sleep so that you felt rested when you woke up in the morning?**

○ 0 days ○ 1 day ○ 2 days ○ 3 days ○ 4 days ○ 5 days ○ 6 days ○ 7 days

43. **People sometimes feel sleepy during the daytime. In the past 7 days, how much of a problem have you had with sleepiness (feeling sleepy, struggling to stay awake) during your daytime activities?**

○ No problem at all
○ A little problem
○ More than a little problem
○ A big problem
○ A very big problem

44. **In the past 7 days, how often have you:**

(Please mark the appropriate column for each row)

	0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
Awakened too early in the morning and couldn't get back to sleep?	○	○	○	○	○	○	○	○
Felt tired, dragged out, or sleepy during the day?	○	○	○	○	○	○	○	○
Gone to bed because you just could not stay awake any longer?	○	○	○	○	○	○	○	○
Had an extremely hard time falling asleep?	○	○	○	○	○	○	○	○

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Impediments to Academic Performance

(Please select the most serious outcome for each item below)

	Significant disruption in thesis, dissertation, research, or practicum work	Received an incomplete or dropped the course	Received a lower grade in the course	Received a lower grade on an exam or important project	I have experienced this issue but my academics have not been affected	This did not happen to me/not applicable
45. Within the **last 12 months**, have any of the following affected your academic performance?						
Alcohol use	○	○	○	○	○	○
Allergies	○	○	○	○	○	○
Anxiety	○	○	○	○	○	○
Assault (physical)	○	○	○	○	○	○
Assault (sexual)	○	○	○	○	○	○
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○	○	○	○	○
Cold/Flu/Sore throat	○	○	○	○	○	○
Concern for a troubled friend or family member	○	○	○	○	○	○
Chronic health problem or serious illness (e.g., diabetes, asthma, cancer)	○	○	○	○	○	○
Chronic pain	○	○	○	○	○	○
Death of a friend or family member	○	○	○	○	○	○
Depression	○	○	○	○	○	○
Discrimination (e.g., homophobia, racism, sexism)	○	○	○	○	○	○
Drug use	○	○	○	○	○	○
Eating disorder/problem	○	○	○	○	○	○
Finances	○	○	○	○	○	○
Gambling	○	○	○	○	○	○
Homesickness	○	○	○	○	○	○
Injury (fracture, sprain, strain, cut)	○	○	○	○	○	○
Internet use/computer games	○	○	○	○	○	○
Learning disability	○	○	○	○	○	○
Participation in extracurricular activities (e.g., campus clubs, organizations, athletics)	○	○	○	○	○	○
Pregnancy (yours or your partner's)	○	○	○	○	○	○
Relationship difficulties	○	○	○	○	○	○
Roommate difficulties	○	○	○	○	○	○
Sexually transmitted disease/infection (STD/I)	○	○	○	○	○	○
Sinus infection/Ear infection/Bronchitis/Strep throat	○	○	○	○	○	○
Sleep difficulties	○	○	○	○	○	○
Stress	○	○	○	○	○	○
Work	○	○	○	○	○	○
Other (please specify _____)	○	○	○	○	○	○

Demographic Characteristics

46. How old are you? → Years (00 01 02 03 04 05 06 07 08 09)

47. What is your gender?
- ○ Female
- ○ Male
- ○ Transgender

48. What is your sexual orientation?
- ○ Heterosexual
- ○ Gay/Lesbian
- ○ Bisexual
- ○ Unsure

49. What is your height in feet and inches? → HEIGHT: Ft. (0 1 2 3 4 5 6 7 8 9) Inch (00 01 02 03 04 05 06 07 08 09 10 11)

50. What is your weight in pounds? → WEIGHT: Pounds (000 001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038 039 040 041 042 043 044 045 046 047 048 049 050 051 052 053 054 055 056 057 058 059 060 061 062 063 064 065 066 067 068 069 070 071 072 073 074 075 076 077 078 079 080 081 082 083 084 085 086 087 088 089 090 091 092 093 094 095 096 097 098 099 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999)

PAGE ELEVEN

51. **What is your year in school?**
- ○ 1st year undergraduate
- ○ 2nd year undergraduate
- ○ 3rd year undergraduate
- ○ 4th year undergraduate
- ○ 5th year or more undergraduate
- ○ Graduate or professional
- ○ Not seeking a degree
- ○ Other

52. **What is your enrollment status?**
○ Full-time ○ Part-time ○ Other

53. **Have you transferred to this college or university within the last 12 months?**
○ No ○ Yes

54. **How do you usually describe yourself?** ***(Mark all that apply)***
- ○ White
- ○ Black or African American
- ○ Hispanic or Latino/a
- ○ Asian or Pacific Islander
- ○ American Indian, Alaskan Native, or Native Hawaiian
- ○ Biracial or Multiracial
- ○ Other

55. **Are you an international student?**
○ No ○ Yes

56. **What is your relationship status?**
- ○ Not in a relationship
- ○ In a relationship but not living together
- ○ In a relationship and living together

57. **What is your marital status?**
○ Single ○ Divorced
○ Married/Partnered ○ Other
○ Separated

58. **Where do you currently live?**
- ○ Campus residence hall
- ○ Fraternity or sorority house
- ○ Other college/university housing
- ○ Parent/guardian's home
- ○ Other off-campus housing
- ○ Other

59. **Are you a member of a social fraternity or sorority? (e.g., National Interfraternity Conference, National Panhellenic Conference, National Pan-Hellenic Council, National Association of Latino Fraternal Organizations)**
○ No ○ Yes

60. **How many hours a week do you work for pay?**
○ 0 hours ○ 30–39 hours
○ 1–9 hours ○ 40 hours
○ 10–19 hours ○ More than 40 hours
○ 20–29 hours

61. **How many hours a week do you volunteer?**
○ 0 hours ○ 30–39 hours
○ 1–9 hours ○ 40 hours
○ 10–19 hours ○ More than 40 hours
○ 20–29 hours

62. **What is your primary source of health insurance?**
- ○ My college/university sponsored plan
- ○ My parents' plan
- ○ Another plan
- ○ I don't have health insurance
- ○ I am not sure if I have health insurance

63. **What is your approximate cumulative grade average?**
○ A ○ B ○ C ○ D/F ○ N/A

64. **Within the last 12 months, have you participated in organized college athletics at any of the following levels?**

(Please mark the appropriate column for each row)	Yes	No
Varsity	○	○
Club sports	○	○
Intramurals	○	○

65. **Do you have any of the following?**

(Please mark the appropriate column for each row)	Yes	No
Attention Deficit and Hyperactivity Disorder (ADHD)	○	○
Chronic illness (e.g., cancer, diabetes, auto-immune disorders)	○	○
Deafness/Hearing loss	○	○
Learning disability	○	○
Mobility/Dexterity disability	○	○
Partial sightedness/Blindness	○	○
Psychiatric condition	○	○
Speech or language disorder	○	○
Other disability	○	○

66. **Are you currently or have you been a member of the United States Armed Services (Active Duty, Reserve, or National Guard)?**
- ○ No
- ○ Yes and I **have** deployed to an area of hazardous duty
- ○ Yes and I **have not** deployed to an area of hazardous duty

THANK YOU FOR COMPLETING THIS SURVEY

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Appendix O: Permission to Reproduce NCHA

Gmail Jennifer Bechard <jenrbechard@gmail.com>

Permission to reproduce NCHA

3 messages

Jennifer Bechard <jenrbechard@gmail.com> Thu, Nov 29, 2018 at 2:22 PM
To: contact@acha.org

To Whom it May Concern:

My name is Jennifer Bechard. I am a PhD candidate at the University of Kansas. I am writing to request permission to reproduce copies of the NCHA II and NCHA IIb as part of the appendices section of my doctoral dissertation. My study is utilizing secondary data of the NCHA 2011, 2013, and 2015 at the University of Kansas. I have been granted access to the data from the Health Education Resource Office.

If you would like to verify my status as a PhD candidate you may contact the head of my dissertation committee, Dr. Leon Greene, jlg@ku.edu

I would greatly appreciate your approval.

Respectfully,
Jennifer Bechard

Emma Glasgow <eglasgow@acha.org> Thu, Nov 29, 2018 at 4:21 PM
To: Jennifer Bechard <jenrbechard@gmail.com>

Hello Jennifer,

Thank you for reaching out to ACHA. Yes, you have approval to use the data in your appendices section.

All the best,

Emma Glasgow | **Community Engagement Coordinator**
American College Health Association

8455 Colesville Rd | Suite 740 | Silver Spring, MD 20910

E: eglasgow@acha.org | P: (443) 270-4561 | www.acha.org

From: Jennifer Bechard <jenrbechard@gmail.com>
Sent: Thursday, November 29, 2018 12:22 PM