

THE ROLE OF ALCOHOL USE, DRINKING CONTEXT, AND ALCOHOL
EXPECTANCIES IN SEXUAL ASSAULT PERPETRATION AMONG COLLEGE MEN

by

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ABSTRACT

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Under the Supervision of Shawn P. Cahill, Ph.D.

Sexual assault is a major public health and criminal justice problem in our society. The high prevalence rate of sexual assault victimization and perpetration among college students is even more disturbing. Additionally, the prevalence of alcohol use among college students is higher than in the general population, and alcohol use is associated with more than half of sexual assaults. The goal of the present study was to gain a deeper understanding of the role of various alcohol related factors in sexual assault perpetration among college men. Specifically, this study assessed the association of perpetration with general problematic alcohol use, general frequency of bar/party attendance (i.e., drinking context), and alcohol outcome expectancies related to sexual enhancement and social facilitation. Additionally, the study assessed proximal alcohol use by the perpetrator and victim in reported incidents of assault and whether these assaults were more likely than not to occur at or immediately after leaving a bar or party. Participants were 152 college men who responded to a variety of assessment measures via a confidential online survey. Participants were categorized into three groups: non-perpetrators ($n = 38$), contact/coercion perpetrators ($n = 77$), and rape perpetrators ($n = 37$). Results indicated that general problematic

alcohol use, general frequency of bar/party attendance, and alcohol outcome expectancies related to sexual enhancement and social facilitation were all individually associated with sexual assault perpetration. However, in assessing these factors together in multivariate analysis, only sexual enhancement expectancies (and general bar/party attendance in the rape group) was significantly associated with perpetration. Results also indicated that alcohol was used by both the perpetrator and victim in most cases involving rape level assaults, but not in contact/coercion level assaults. Furthermore, assaults were *not* more likely to occur at or immediately after leaving a bar or party. Implications for both research and intervention purposes are also discussed.

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To
my dear wife Chaya
and our precious children,
Chavie, Esti, Zevi, and Avraham Menachem

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INTRODUCTION

Sexual assault, defined as nonconsensual completed or attempted vaginal, anal, or oral penetration, or nonconsensual physical contact of a sexual nature (Cortina, Koss, & Cook, 2018; see Basile, Smith, Breiding, Black, & Mahendra, 2014), is a major public health and criminal justice problem in our society (Black et al., 2011). Around 120 million women worldwide (slightly more than 1 in 10) have reported experiencing forced intercourse or other forced sexual acts at some point in their lives (UNICEF, 2014). Additionally, approximately 27-36% of women and 12-17% of men in the United States report experiencing some form of unwanted sexual contact during their lifetime (Black et al., 2011; Smith et al., 2017). Limited research has also found high rates of sexual assault victimization among ethnic minoritized women (Abbey, Jacques-Tiura, & Parkhill, 2010) and alarmingly high rates among sexual minoritized and transgender people (Stotzer, 2009; Walters, Chen, & Breiding, 2013; Cantor et al., 2015; see Turchik, Hebenstreit, & Judson, 2016).

The prevalence of sexual assault among college students, especially against women, is even more troubling. Surveys indicate that 27-33% of female college seniors in the United States report experiencing sexual assault at least once during their time in college (Cantor et al., 2015; Ford & Soto-Marquez, 2016; Krebs, Lindquist, Warner, Fisher, & Martin, 2007; see Fedina, Holmes, & Backes, 2018), and 16% of women report being sexually assaulted during the current academic year alone (Fisher, Cullen & Turner, 2000). Moreover, 11-22% of female college seniors in the United States report experiencing rape while in college (Cantor et al., 2015; Fisher et al., 2000; Krebs et al., 2007; White, Koss, Abbey, Cook, Ullman, & Thompson, 2015; see Fedina, Holmes, & Backes, 2018). Actual rates of college women who experience sexual assault is likely to be even higher, as the majority of sexual assaults go unreported for various reasons

(Cantor et al., 2015; Cohn, Zinzow, Resnick, & Kilpatrick, 2013; Kilpatrick & Hahn, 2019; Zinzow, & Thompson, 2011).

Rates of sexual assault perpetration among college students are equally troubling. About one in four college men report engaging in some form of nonconsensual sexual behavior during their four years in college (Abbey, McAuslan, & Ross, 1998; Thompson, Swartout, & Koss, 2013; Zinzow & Thompson, 2015), and about 16% report engaging in behavior that meets the legal definition of attempted or completed rape (Thompson et al., 2013). In addition, between 11-15% of college men have reported perpetrating some form of nonconsensual sexual behavior in the past 12 months (Abbey & McAuslan, 2004; Thompson, Koss, Kingree, Goree, & Rice, 2011; Thompson et al., 2013). While some research indicates that the majority of sexual assaults are committed by serial perpetrators (Lisak & Miller, 2002; Zinzow & Thompson, 2015), recent scholarship has challenged this notion (see Gray, Hassija, & Steinmetz, 2016). Moreover, Malamuth (1989) found that approximately one third of college men indicated that it is likely they would rape a woman if they were certain they would not be caught. Although perpetrators and victims of sexual assault can be of any gender (see Krebs et al., 2007), it is important to note that most sexual assaults are perpetrated by men against women (Black et al., 2011; Rozee & Koss, 2001).

The consequences of sexual assault to individuals and society are many and significant. Besides physical injury that may result from violent physical sexual assault, victims of sexual assault may develop acute and chronic physical health problems including headaches, sleep disturbances, gastrointestinal complications, and gynecological and reproductive health issues (see Brener, McMahon, Warren, & Douglas, 1999; Martin, Macy, & Young, 2011; Sabina & Ho, 2014; Turchik & Hassija, 2013). Victims of sexual assault can also develop various

psychological problems including depression, anxiety, posttraumatic stress disorder (PTSD), alcohol and substance abuse, eating problems, sexual dysfunction, lowered self-esteem, and suicidality (Campbell, Dworkin, & Cabral, 2009; Martin et al., 2011). Additionally, college students who are sexually assaulted may experience impairment in academic performance, including difficulty carrying a full course load, increased frequency of missed classes, declines in academic achievement, reduced capacity to contribute to the campus community, and greater likelihood of dropping courses, leaving school, or transferring to another school (AAUP, 2012; Jordan, Combs, & Smith, 2014; van Roosmalen & McDaniel, 1998). Sexual assault victims also tend to feel less safe on their college campus (Cortina, Swan, Fitzgerald, & Waldo, 1998). The economic cost of sexual assault is also very high. The financial costs of rape, including costs for medical and mental health care, productivity loss, quality of life impact, and criminal justice activities is estimated to be \$3.1 trillion (2014 U.S. dollars) over victims' lifetimes in the United States (Peterson, DeGue, Florence, & Lokey, 2017). In addition, arrest and conviction can have severe negative social and economic consequences to the perpetrator, their family, and their community (Levenson, 2008).

The need for effective programs to reduce sexual assault on college campuses has become very apparent over the past several decades. Currently, universities are required to provide some form of sexual assault awareness and prevention programming to students (National Association of the Student Personnel Administrators, 1994). A substantial amount of research has already been done to identify risk factors for becoming a victim of sexual assault and in developing resistance programs or risk reduction programs for sexual assault victimization (Koss, 2005; Newlands & O'Donohue, 2016). Although some studies have shown the value of risk reduction programs for women who are at high risk for victimization (e.g., Senn et al., 2015;

Vladutiu, Martin, & Macy, 2011), overall this approach has not been very effective in reducing rates of sexual assault (Adams-Curtis & Forbes, 2004; Newlands & O'Donohue, 2016; Tharp et al., 2011). In addition, this approach places the burden of preventing sexual assault on potential victims. As such, consideration of alternative approaches to prevent sexual assault is warranted.

One obvious approach, and perhaps a more direct one, is to seek to prevent attempts of sexual assault perpetration in the first place (Centers for Disease Control and Prevention [CDC], 2004; Loh, Gidycz, Lobo, & Luthra, 2005; Newlands & O'Donohue, 2016; Rozee & Koss, 2001). By reducing the frequency of sexual assault perpetration, sexual assault victimization will automatically be reduced. While some work has been done in developing primary prevention programs for sexual assault perpetration, there is scant research on the effectiveness of these programs, and some of them may even have potentially harmful effects (see DeGue, Valle, Holt, Massetti, Matjasko, & Tharp, 2014 for a review).

In order to develop effective primary prevention programs for sexual assault perpetration, it is essential to first identify the factors that increase the likelihood for occurrence of sexual assault perpetration and to have a clear understanding of the association between these factors and sexual assault perpetration (CDC, 2004; Mellins et al., 2017; Tharp, DeGue, Valle, Brookmeyer, Massetti, & Matjasko, 2013). This is important for at least two reasons. First, by identifying risk factors for sexual assault perpetration, these factors can be addressed directly in prevention programs, thereby minimizing the potential risk they pose. Second, rather than developing a one-size-fits-all sexual assault prevention program, different programs focusing on unique sets of risk factors can be developed to specifically target individuals who may be at increased risk due to these factors (Testa & Cleveland, 2017; Thompson et al., 2013). While a substantial amount of research has already been conducted to identify risk factors for sexual

assault perpetration (see Tharp et al., 2013 for a review), gaps still remain in our understanding of whether and how these factors are associated with sexual assault perpetration.

The goal of the present study was to gain a deeper understanding of some of the factors that have been identified in previous research as potential risk factors for sexual assault perpetration. Given that the prevalence rates of both sexual assault perpetration (Thompson et al., 2013) and alcohol use (SAMHSA, 2015) are higher among college students compared to the general population, and given that alcohol use is associated with more than half of sexual assaults (Abbey, 2002), the present study focused on investigating the role of alcohol in sexual assault perpetration among college men. Furthermore, the present study investigated several alcohol related factors that are potential risk factors for sexual assault perpetration, including various types of problematic alcohol use, drinking contexts, and alcohol expectancies. These factors are particularly relevant to college students and are potentially modifiable. As such, if found to be strongly associated with sexual assault perpetration, addressing these risk factors in primary prevention programs may be successful in significantly reducing the rates of sexual assault perpetration among the college population.

In the subsections that follow, the various alcohol related factors investigated in the present study are discussed in more detail. Specifically, findings of past research on the association between these factors and sexual assault perpetration are summarized. In addition, gaps in our understanding of how these factors are associated with sexual assault perpetration are examined. Finally, the goals of the present study in filling some of these gaps and furthering our knowledge and understanding of these associations is outlined.

Alcohol Use

A substantial number of studies have found that problematic alcohol use is associated

with sexual assault perpetration (e.g., Abbey et al., 1998; Abbey & McAuslan, 2004; Carr & VanDeusen, 2004; Locke & Mahalik, 2005; Parkhill & Abbey, 2008; Tuliao, & McChargue, 2014; White, McMullin, Swartout, Sechrist, & Gollehon, 2008). However, several studies have not found this association significant (e.g., Calhoun, Bernat, Clum, & Frame, 1997; Loh et al., 2005; Lyndon, White, & Kadlec, 2007). One possible explanation for the null findings is that these studies used stepwise regression in multivariate analyses, which may obscure any significant relationship between problematic alcohol use and sexual assault perpetration by only selecting those factors that are the strongest predictors of sexual assault perpetration (Tharp et al., 2013). Another possibility is that motives and triggers for sexual assault perpetration are heterogeneous, and the role of alcohol may vary across perpetrators (Abbey, 2017). The present study assessed the association between problematic alcohol use and sexual assault perpetration both when assessing alcohol use as the sole predictive factor and in combination with the other alcohol related factors investigated in this study in multivariate analysis.

In addition, past studies assessing the relationship between problematic alcohol use and sexual assault perpetration generally have not assessed whether different forms of problematic alcohol use, such as frequency of alcohol use and heavy episodic drinking, have varying associations with sexual assault perpetration. Although a few studies have specifically evaluated the relationship between one of these forms of problematic alcohol use and sexual assault perpetration, for example, frequency of alcohol use (Schwartz, DeKeseredy, Tait, & Alvi, 2001) or heavy episodic drinking (Abbey & McAuslan, 2004; Kingree & Thompson, 2013; Thompson et al., 2011), it is still unclear whether one form of problematic alcohol use is more strongly associated with sexual assault perpetration than the other. As such, the present study investigated the association between varying types of problematic alcohol use and sexual assault perpetration.

Importantly, a substantial number of studies that have implicated alcohol use as a risk factor for sexual assault perpetration have only measured general problematic alcohol use (i.e., distal alcohol use). However, this leaves unclear the causal role that alcohol use may have on sexual assault perpetration, if any. In addition, for prevention purposes, it would arguably be more informative to know if alcohol use is a risk factor for perpetration close to the time of consuming alcohol (i.e., proximal alcohol use). Indeed, Koss (1988) reported that 74% of perpetrators of rape in a nationally representative sample of college students reported having consumed alcohol at the time of the assault. However, more data is needed in this area (Testa & Cleveland, 2017). The present study filled this gap by assessing whether incidents of sexual assault involved alcohol use by the perpetrator either immediately before, during, or immediately following the assault.

Furthermore, it is very common for victims of sexual assault to have consumed alcohol at the time of the assault (Abbey, 2002; 2011; Lorenz & Ullman, 2016; Orchowski, Untied, & Gidycz, 2013; Testa, 2002). Indeed, alcohol use has been found to be a significant risk factor for sexual assault victimization (Mouilso, Fischer, & Calhoun, 2012; Neal & Fromme, 2007; Testa & Hoffman, 2012). The present study assessed whether incidents of sexual assault are more likely than not to occur when both the perpetrator and the victim were consuming alcohol at the time of the assault.

Drinking Context

College students typically consume alcohol at bars and parties (Clapp, Reed, Holmes, Lange, & Voas, 2006; Harford, Wechsler, & Seibring, 2002) and these contexts also attract people who are looking to “hook up” and promote sexual activity (Testa & Cleveland, 2017). Consequently, the environment and “mood” of these contexts may increase the likelihood of

sexual assault, independent of any alcohol use. In fact, studies indicate that increased party and bar attendance is associated with sexual assault victimization among college women (Cranney, 2015; Franklin, Franklin, Nobles, & Kercher, 2012) independent of drinking alcohol (Pino & Johnson-Johns, 2009). Furthermore, Thompson and Cracco (2008) found that more than 90% of college men reported employing sexually aggressive tactics in a bar or party setting, and this often involves intentional sexual invasiveness or unwanted persistent advances (Graham et al., 2014). As such, attending bars, parties, and similar contexts may be a greater risk factor for sexual assault perpetration than actual alcohol use. To be sure, given that alcohol is usually consumed when attending bars, parties, etc., it is very difficult to tease apart the influence of these drinking contexts from alcohol use per se in sexual assault perpetration. Nevertheless, in a recent longitudinal study, Testa and Cleveland (2017) found that although the association between heavy alcohol use and sexual assault perpetration was not significant after accounting for various other risk factors for sexual assault perpetration, frequency of bar or party attendance remained significantly associated with sexual assault perpetration even after accounting for other risk factors.

To further investigate this finding, the present study assessed the association between sexual assault perpetration and contexts in which alcohol is usually consumed, such as bars, clubs, parties, etc. Furthermore, although Testa and Cleveland (2017) found that frequency of bar and party attendance was strongly associated with sexual assault perpetration, that study did not assess whether sexual assaults occurred at a bar or party, or immediately after leaving a bar or party (i.e., proximal bar/party attendance; Abbey, 2017). To address this question, this study assessed the relationship between sexual assault perpetration and proximal bar or party attendance.

Alcohol Expectancies

Many studies have demonstrated that people hold a number of common beliefs and expectations about the effects that alcohol consumption has or will have for them (see Goldman, Brown, & Christiansen, 1987). These alcohol expectancies include cognitive, affective, and behavioral consequences and can be both positive (e.g., taking mind off problems, feeling less stressed, becoming more sexually active, facilitating social interaction, etc.) and negative (e.g., decreasing concentration, feeling sick, becoming more aggressive, etc.) (Jones, Corbin, & Fromme, 2001; Reich, Below, & Goldman, 2010). Alcohol expectancies may have self-fulfilling prophecy effects independent of actual alcohol effects (George, Stoner, Norris, Lopez, & Lehman, 2000) and may also enhance the pharmacological effects of alcohol (Abbey, 2011).

Studies have also demonstrated that alcohol expectancies, especially positive alcohol expectancies, are linked to alcohol abuse and dependence and other alcohol-related problems (Dunne, Freedlander, Coleman, & Katz, 2013). In addition, in an experimental study conducted by Lang, Goeckner, Adesso, and Marlatt (1975), the researchers found that participants who were told they were given an alcoholic beverage to consume showed more aggressive behavior than participants who were told they were given a non-alcoholic beverage, regardless of the actual alcohol content of the beverage given. This suggests that alcohol expectancies are significant determinants of aggressive behavior. Sex-related alcohol expectancies have also been linked to increased sexual arousal and sexual behavior (George et al., 2000; Lang, Searles, Lauerma, & Adesso, 1980). Furthermore, several studies have found that individuals who reported being a victim of alcohol-related sexual assault endorsed various types of alcohol outcome expectancies to a greater extent than those who were not victims or who were victims of non-alcohol-related sexual assault (Benson, Gohm, & Gross, 2007; Corbin, Bernat, Calhoun,

McNair, & Seals, 2001; Marx, Nichols-Anderson, Messman-Moore, Miranda, & Porter, 2000; Testa & Dermen, 1999; Tyler, Schmitz, & Adams, 2017).

As such, the present study also investigated the association between endorsement of alcohol expectancies and sexual assault perpetration. Specifically, the present study assessed whether alcohol expectancies related to sexual enhancement and social facilitation are significantly associated with sexual assault perpetration.

Aims and Hypotheses

The primary aim of the present study was to gain a preliminary deeper understanding of various potential alcohol related risk factors for sexual assault perpetration among college men. To do this, the present study investigated the relationship of several alcohol related factors with whether an individual had a history of sexual assault perpetration. Furthermore, the present study assessed both the relationship of each factor separately in univariate analyses and the unique relationship of each factor above and beyond the other factors in multivariate analysis. Additionally, both distal and proximal alcohol related factors were assessed. As discussed above, the alcohol related factors assessed in the present study included various types of problematic alcohol use, drinking context, and alcohol expectancies. The hypotheses were as follows:

1. Alcohol use

Hypothesis 1a: General frequent alcohol use (i.e., distal frequent alcohol use) is associated with a lifetime history of sexual assault perpetration.

Hypothesis 1b: General heavy episodic drinking (i.e., distal heavy episodic drinking) is associated with a lifetime history of sexual assault perpetration.

Hypothesis 1c: Reported incidents of sexual assault are significantly more likely than not to involve alcohol use by the perpetrator at the time of the assault (i.e., proximal alcohol use).

Hypothesis 1d: Reported incidents of sexual assault perpetration are more likely to involve alcohol use by both the perpetrator and the victim compared to alcohol use by either party alone.

2. Drinking context

Hypothesis 2a: Frequency of bar, club, or party attendance (i.e., general bar/party attendance) is associated with a lifetime history of sexual assault perpetration.

Hypothesis 2b: General bar/party attendance is more strongly associated with a lifetime history of sexual assault perpetration than general problematic alcohol use (hypotheses 1a and 1b).

Hypothesis 2c: Reported incidents of sexual assault are significantly more likely than not to have taken place at, or immediately after leaving, a bar/party (i.e., proximal bar/party attendance).

Hypothesis 2d: The above association is stronger than the association between proximal alcohol use by the perpetrator and lifetime history of sexual assault perpetration (hypotheses 1c).

3. Alcohol expectancies

Hypothesis 3a: Endorsement of alcohol expectancies related to sexual enhancement is associated with a lifetime history of sexual assault perpetration.

Hypothesis 3b: Endorsement of alcohol expectancies related to social facilitation is associated with a lifetime history of sexual assault perpetration.

METHOD

Participants

Participants were undergraduate students at a public university in the Midwestern region of the United States. Inclusion criteria to participate in the study were as follows: (a) being at least 18 years old; (b) identifying as male, whether cisgender or transgender; and (c) being currently matriculated as an undergraduate student. Participants were recruited via four methods: (a) An announcement about the study was posted on the Psychology Department's Sona Experiment Management System (Sona System); (b) an email invitation to participate in the study was sent to all men ages 18 and above with accounts in the Sona System; (c) informational fliers about the study were posted around the university campus; and (d) information about the study was sent to several instructors of undergraduate psychology courses at the university, so that they can inform their students about the study. Initially, participants were offered a \$10 Amazon eGift card for their participation, in addition to course credit. However, due to slow recruitment, the monetary compensation for participation was increased to a \$20 Amazon eGift card after approximately the first 50 individuals accessed the online study platform.

The study participant flow is presented in Figure 1. A total of 184 individuals accessed the online study platform, 180 completed the survey screener consent, and 179 completed the survey screener questions. Based on the responses to the screener questions, 26 individuals were excluded from participating in the study survey, due to not meeting the study's inclusion criteria (23 identified as female, one identified as gender variant/non-conforming, one did not provide their gender information, and one was a graduate student). Thus, 153 individuals were eligible for participation in the study and 152 individuals completed the study survey.

Based on participants' responses to the sexual experiences questionnaires, 38 (25.0%) participants did not endorse engaging in any item on the three sexual experiences measures administered and were thus classified as non-perpetrators; 114 (75.0%) participants endorsed at least one item on one or more of the sexual experiences questionnaires and were classified as perpetrators. The perpetrator group was further divided into two groups based on the most severe event endorsed. The contact/coercion perpetrator group ($n = 77$) comprised individuals who endorsed engaging at least once in either nonconsensual sexual contact, attempted penetration, or actual penetration using verbal coercion, their older age or authority, or other enticement strategies. The rape perpetrator group ($n = 37$) comprised individuals who endorsed engaging at least once in either attempted penetration or actual penetration using physical force, threatening to use physical force, or while the victim was intoxicated or incapacitated.

Demographics for the study sample are presented in Table 1. The mean age of the full study participant sample was 22.7 (ranging from 18–42, $SD = 4.15$); 98.7% of participants ($n = 150$) identified as male and 1.3% ($n = 2$) identified as transgender male. Participants varied across race, with 10.5% ($n = 16$) identifying as Asian or Asian-American, 16.4% ($n = 25$) as Black or African American, 67.8% ($n = 103$) as White or Caucasian, and 5.4% ($n = 8$) identified as multiracial or other. Nine participants (5.9%) identified as Hispanic or Latino, the majority of whom ($n = 7$) identified their race as White or Caucasian. Fifteen participants (9.9%) identified as bisexual, 16 identified as homosexual (10.5%), and the remaining 117 (77%) identified as heterosexual.

Participants varied across year in college: 15.8% ($n = 24$) indicated being a freshman/first year, 26.3% ($n = 40$) a sophomore/second year, 30.3% ($n = 46$) a junior/third year, and 27.6% ($n = 42$) indicated being a senior/fourth year and beyond in their undergraduate studies. Twenty-

seven percent of participants ($n = 41$) reported being a member of at least one all-male group (e.g., fraternity, all-male organized sports team, etc.). Thirty-eight percent of participants ($n = 58$) reported currently being in a long-term relationship (e.g., living with a partner, married, engaged, in a long-term monogamous relationship, etc.).

Measures

Sexual assault perpetration. The sexual experiences questionnaires used are presented in Appendix F. The revised Sexual Experiences Survey-Short Form Perpetration (SES-SFP; Koss et al., 2007; 2008) was one form used to assess for history of sexual assault perpetration. The SES-SFP is designed to measure the occurrence and frequency of perpetrating various unwanted sexual acts and the methods or tactics used to carry out these acts. It is one of the most used measures of sexual assault perpetration among college students and has demonstrated good validity and reliability among male samples (Anderson, Cahill, & Delahanty, 2017; Johnson, Murphy, & Gidycz, 2017). As the present study was conducted only with male participants, the gender-neutral language of the SES-SFP was slightly modified to reflect the perspective and relevant behaviors of men (see Koss et al., 2007). The present survey included the first seven critical items of the SES-SFP, on which respondents were asked to indicate how many times (0, 1, 2, or 3+) they have perpetrated various unwanted sexual acts (including sexual contact, completed oral sex, completed vaginal penetration, completed anal penetration, attempted oral sex, attempted vaginal penetration, and attempted anal penetration) using various tactics (such as lying, showing displeasure, victim being drunk, threatening physical harm, and using physical force) during two separate time frames: (a) the past 12 months and (b) from the age of 14 until 12 months ago.

Participants who indicated a response of 1 or above to any of the tactics (a-e) on item 1 (i.e., nonconsensual contact) or indicated a response of 1 or above to tactics a or b (verbal coercion) on items 2-7 were categorized as a contact/coercion perpetrator. Participants who indicated a response of 1 or above to tactics c-e on items 2-7 were categorized as a rape perpetrator.

In addition to the SES-SFP, a slightly modified version of the Sexual Strategies Scale (SSS; Peterson, Janssen, Heiman, Goodrich, Thigpen, & Fortenberry, 2010; Strang, Peterson, Hill, & Heiman, 2013) was administered to further assess for history of sexual assault perpetration. The SSS is a 22-item measure that asks respondents whether they have employed various types of strategies to convince a woman to have sex (oral, anal, or vaginal) after the woman initially said “no.” Response options were *Yes* or *No* during two separate time frames: (a) the past 12 months and (b) from the age of 14 until 12 months ago. Items on the SSS can be grouped into five categories based on the type of strategy used, including enticement, verbal coercion, age or authority, intoxication, and threat or force (Peterson et al., 2010). Participants who endorsed at least one of the items in the enticement, verbal coercion, or age or authority category were considered a contact/coercion perpetrator. Participants who endorsed at least one of the items in the intoxication or threat or force category were considered a rape perpetrator.

The reason for including the SSS in the present study is that despite similar content in the SES-SFP and the SSS measures, several studies have found that the SSS yielded higher rates of participant endorsement of various types of sexual aggression compared to the SES-SFP (Strang et al., 2013; Testa, Hoffman, Lucke, & Pagnan, 2015). It has been suggested that the simpler structure of the SSS compared to the SES-SFP makes it easier for participants to interpret items and provide more accurate responses (Testa et al., 2015). In addition, the nonhierarchical

structure of the SSS may result in higher reports compared to the hierarchical structure of the SES-SFP (Ramirez & Straus, 2006; Testa et al., 2015). As such, in order to capture instances of sexual assault perpetration that may not have been captured by the SES-SFP, the SSS was also included.

The Sexual Coercion (SC) subscale from the revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) was also administered. The CTS2-SC consists of seven paired items (14 items total) that assess for sexual violence in intimate partner relationships. Each pair of items asks about the frequency the participant has perpetrated or been a victim of a specific form of sexual aggression. As the present study focused on assessing perpetration, only the seven perpetration questions were included in the survey. A total of nine random items from the full revised Conflict Tactics Scales were also presented between the seven SC items. However, only data from the Sexual Coercion subscale was used in data analyses.

It is important to note that one of the items on the CTS2-SC is potentially ambiguous and may thus result in over endorsement of sexual assault perpetration. Specifically, item 3 states, “I made my partner have sex without a condom.” The word “made” may be interpreted in several ways, including convinced using nonthreatening means and resulting in valid consent, or by way of verbal or physical intimidation or force. As such, two additional items were added to the CTS2-SC in the present study: (a) “I convinced my partner to have sex without a condom,” and (b) “I forced my partner to have sex without a condom.” One of these items (a) was presented before and the other (b) was presented after the rest of the CTS2-SC items. Thus, a total of 18 items were administered as part of the CTS2-SC questionnaire.

Response options on the CTS2-SC were on an 8-point scale, ranging from *Never* (0) to *More than 20 times in the past year* (6) with an additional option that the event never occurred in the past year but did happen at some point in the relationship (7). Thus, similar to the SES-SFP, the CTS2-SC allows for the assessment of a history of sexual violence during two time frames, lifetime and the past 12 months. The seven items of the CTS2-SC can also be grouped into three categories based on sexual assault type, including verbal coercion, threat of force, and actual use of force. Participants who endorsed (a response of 1 or above) any of the items in the verbal coercion category were categorized as a contact/coercion perpetrator. Participants who endorsed (a response of 1 or above) any of the items in the threat or actual force categories were categorized as a rape perpetrator. Endorsement of item 3 was categorized as a contact/coercion perpetrator unless the participant endorsed both item 3 and option (a) and did not endorse option (b) of the newly added items described above. This latter point turned out not to be relevant in the present study, as participants were clearly categorized into one of the groups based on their responses to other items across the three sexual experiences questionnaires. Past research has demonstrated evidence of convergent validity and reliability for the full CTS2 (Simpson & Christensen, 2005).

The reason for including the CTS2-SC in the present study is that in a recent analysis comparing participant responding on the SES-SFP and the CTS2-SC, Anderson, Cahill, and Delahanty (2018) found that the CTS2-SC identified significantly more cases of sexual violence perpetration than the SES-SFP. The authors provided two lines of possible explanations for the discordance between the two measures. First, the general structure of the CTS2, including the nonhierarchical arrangement of items, the presentation of items (presenting the tactic first followed by the behavior), the response option format, the language of the items, and/or the

normalization of conflicts in intimate relationships, may encourage greater responding by participants. Second, given the existence of various stereotypes about sexual violence in intimate relationships and myths that a romantic partner, especially in a marital relationship, cannot be raped (Ferro, Cermele, & Saltzman, 2008), a significant number of participants may not report their perpetration of sexual assault toward an intimate partner, without being specifically cued to do so, as on the CTS2 (Anderson et al., 2018). As such, the CTS2-SC was included to cue participants to include any nonconsensual sexual behavior perpetrated toward their intimate partner in their reporting and to ensure that all instances of sexual assault perpetration are captured.

Data from all three of the aforementioned measures of sexual assault perpetration were used to determine participants' categorization into one of three groups: (1) non-perpetrator group, which included individuals who did not endorse engaging in any item on the three sexual assault perpetration measures administered; (2) contact/coercion perpetrator group, which included individuals who endorsed engaging at least once in either nonconsensual sexual contact, attempted penetration, or actual penetration using verbal coercion, their older age or authority, or other enticement strategies; and (3) rape perpetrator group, which included individuals who endorsed engaging at least once in either attempted penetration or actual penetration using physical force, threatening to use physical force, or while the victim was intoxicated or incapacitated. The highest level of perpetration severity reported by a participant was used to determine their categorization into one of these three groups.

Alcohol use. The general alcohol use questionnaire used is presented in Appendix C. The first three items from the Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monterio, 2001) were used to assess for frequency and quantity of alcohol

use during the past 12 months. Response options for the frequency of use item were on an 8-point scale (*0=Never, 7=Daily or almost daily*). This is a slight modification from the original AUDIT in order to provide a greater range of response options and to allow for more direct comparisons between frequency of alcohol use and frequency of bar/party attendance described below. Response options for the other two items were the same as on the original AUDIT and were on a 5-point scale. Higher scores on these items indicate heavier alcohol use.

In addition, the Problems Related to Alcohol subscale from the Student Alcohol Questionnaire (SAQ; Engs, 1975) was adapted and included in the survey for the purpose of secondary analyses. This subscale lists 18 common negative consequences of alcohol use among college students and participants were asked to indicate the frequency that they have experienced each of these. Response options were on a 6-point Likert scale (*0=Never, 5=Daily or almost daily*). Higher scores indicate more problems related to alcohol use. The SAQ was specifically designed to assess for problematic drinking among college students and was used in national longitudinal studies assessing college student drinking patterns (e.g., Engs & Hanson, 1988; Hanson & Engs, 1992) and other alcohol related studies (see Engs & Hanson, 1994). It has also been translated into several languages including Chinese, Polish, Romanian, and Spanish, and the two aforementioned subscales have demonstrated good to excellent reliability (Engs & Hanson, 1994).

Participants who endorsed an instance of sexual assault perpetration were presented with several event-related follow-up questions regarding the involvement of alcohol in one specific incident. Details for which specific incident was selected for these follow-up questions when more than one incident was endorsed are provided in the procedures section below. The first question asked whether the participant consumed alcohol immediately before, during, or

immediately following the incident. Participants who endorsed any of these three options, were asked additional questions relating to the quantity of alcohol they consumed and whether they believe they were intoxicated/drunk at the time. In addition, all participants who endorsed an instance of sexual assault perpetration were asked whether the person against whom they perpetrated had consumed alcohol immediately before, during, or immediately following the incident. Response options for these questions were *Yes* or *No*. The event-related follow-up questionnaire is presented in Appendix G.

Bar and party attendance. The general bar/party attendance questionnaire used is presented in Appendix D. All participants were asked the following four questions adapted from Testa and Cleveland (2017): (a) During the past 12 months, how often did you attend a party?; (b) during the past 12 months, how often did you go to a bar?; (c) during the past 12 months, how often did you go to a club?; and (d) during the past 12 months, how often did you attend a large social gathering? Response options were on an 8-point scale (*0=Never, 7=Daily or almost daily*). Scores for the four questions were summed to obtain a total frequency of bar/party attendance score. Higher scores indicate higher frequency of bar/party attendance.

In addition, participants who endorsed an instance of sexual assault perpetration were presented with several event-related follow-up questions regarding the context of the incident, as follows: (a) Did the incident occur at a party?; (b) did the incident occur at a bar?; (c) did the incident occur at a club?; (d) did the incident occur at a large social gathering?; (e) did the incident occur close in time after leaving a party together with the person you did this to?; (f) did the incident occur close in time after leaving a bar together with the person you did this to?; (g) did the incident occur close in time after leaving a club together with the person you did this to?; and (h) did the incident occur close in time after leaving a social gathering together with the

person you did this to? Response options for all of these questions were *Yes* or *No*. The event-related follow-up questionnaire is presented in Appendix G.

Alcohol expectancies. The alcohol expectancies questionnaire used is presented in Appendix E. The Expectancy Questionnaire (EQ; Leigh & Stacy, 1993) was used to assess for alcohol expectancies. The EQ consists of 34 items measuring both positive (19 items) and negative (15 items) expectancies of alcohol consumption, with each having four subscales. Positive expectancy subscales include social facilitation, fun (positive affect), sex (sexual enhancement), and tension reduction; the negative expectancy subscales include social (antisocial), emotional (negative emotional states), physical (undesirable physical effects), and cognitive/performance (impairment). Each item was prefaced with the stem, “When I drink alcohol...,” followed by the positive or negative expectancy. Participants were instructed to indicate the likelihood that these things happen to them when they drink alcohol. If participants do not drink at all, they were instructed to respond to the items according to what they think would happen to them if they did drink. Response options were on a 6-point Likert scale, ranging from 1 (*no chance*) to 6 (*certain to happen*). Separate total scores can be calculated for each of the EQ eight subscales. Only total scores from the sexual enhancement and social facilitation subscales were analyzed in the present study.

The advantages of the EQ over other available alcohol expectancy measures include its relative brevity while still being comprehensive and consisting of both positive and negative expectancies with several important subscales within each domain (see Camacho et al., 2013). In addition, the EQ has been developed for use among young adults and has also been used successfully with adolescents (Catanzaro & Laurent, 2004; Leigh & Stacy, 2004; Urbán, Kökönyei, & Demetrovics, 2008). Moreover, the EQ and its subscales have demonstrated good

discriminant and convergent validity and excellent reliability (Leigh & Stacy, 1993). The EQ has also been translated into a Spanish version (Camacho et al., 2013) and a short version in Spanish has recently been developed (Mezquita, Camacho, Suso-Ribera, Ortet, & Ibáñez, 2018).

Social desirability. Given that the present study assessed for various types of behaviors, experiences, and beliefs that are socially unacceptable, the Marlow-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960) was administered to detect for the possibility of socially desirable responding. The MCSDS consists of 33 items with socially desirable content that have a low probability of occurring. Participants were asked to indicate whether the presented statement are *True* or *False* for them. High scores suggest that participants were seeking to present themselves in a socially desirable manner and thus their responses to the other measures in the study may be invalid. A recent study (Lambert, Arbuckle, & Holden, 2016) has found that despite newer measures to assess for socially desirable responding, the MCSDC consistently performed better in identifying fakers. The social desirability questionnaire used is presented in Appendix H.

Aggression. The Buss-Perry Aggression Questionnaire (BPAQ; Buss & Perry, 1992) was included in the survey to evaluate other forms of aggression besides sexual aggression for the purpose of secondary analyses. The BPAQ consists of 29 items asking respondents how characteristic each statement is in describing them. Responses were made on a 5-point Likert scale, ranging from 1 (*extremely uncharacteristic*) to 5 (*extremely characteristic*). Higher scores indicate higher levels of aggressive behavior. The statements are divided into four subareas of aggression: physical aggression, verbal aggression, anger, and hostility. Physical aggression and verbal aggression both involve hurting or harming others and represent the instrumental component of aggressive behavior. Anger involves physiological arousal and preparation for

aggression, representing the affective component of aggressive behavior. Hostility consists of beliefs of ill will, resentment, and injustice, and represents the cognitive component of aggressive behavior. Separate total scores can be calculated for each of the four subareas, but only overall scores were analyzed in the present study. The aggression questionnaire used is presented in Appendix I.

Substance Use. To assess for use of various substances besides alcohol for the purposes of secondary analyses, nine items were included in the survey asking about the frequency of use of various substances during the past 12 months without a medical prescription or more than your prescribed dosage, including cannabis (marijuana, pot, grass, hash, etc.), cocaine (coke, crack, etc.), stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.), methamphetamine (speed, crystal meth, ice, etc.), inhalants (nitrous oxide, glue, gas, paint thinner, etc.), sedatives or sleeping pills (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.), hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.), street opioids (heroin, opium, etc.), and prescription opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.). Respondents were also able to indicate the frequency of using two additional “other” substances. Response options were on an 8-point scale (0=Never, 7=Daily or almost daily), similar to the response options for the frequency of alcohol use described above. Higher scores on these items indicate increased substance use. The substance use questionnaire used is presented in Appendix J.

Procedure

Upon accessing the survey website, participants were asked about their age, gender identity, and year in college to ensure that participants met the study’s inclusion criteria (see Appendix A). Participants who did not meet the study’s inclusion criteria were disqualified from

continuing to complete the survey. All other participants continued to an informed consent page which included a brief general overview of the study, a request that participants respond to survey questions as honestly and accurately as possible, and an assurance that study data will not be directly linked to any identifying personal information. After reading this page and clicking a button to begin the survey, participants were forwarded to the first section of the survey, which collected general demographic information. The demographics questionnaire used is presented in Appendix B. After that, participants were presented with the various measures described above (see Figure 2), including measures of general alcohol use, general bar/party attendance, alcohol expectancies, history of sexual assault perpetration, social desirability, aggression, and substance use. The various measures of sexual assault perpetration (i.e., SES-SFP, SSS, CTS2-SC) were counterbalanced across participants to account for any potential order effects. Each measure was presented on a separate page and included instructions for responding to that particular measure. Every item presented included “*I prefer not to answer*” as a response option and each measure had a forced-response requirement before being able to move on to the next measure. This approach afforded a balance between ensuring that participants do not inadvertently miss any items while safeguarding their autonomy to provide or withhold any information.

Participants who endorsed at least one instance of sexual assault perpetration on any of the sexual assault perpetration measures (i.e., SES-SFP, SSS, CTS2-SC), were presented with follow-up questions regarding *one* of the reported assault incidents, as described below. These event-related follow-up questions asked about alcohol involvement and the context of the assault incident. In identifying which assault incident participants should refer to in answering these event-related follow-up questions, the following rules were used:

1. If only one instance was reported, follow-up questions referred to this one instance.

2. If more than one instance was reported, then events that occurred in the past 12 months were prioritized over events prior to 12 months ago. Accordingly, follow-up questions referred to events that occurred more than 12 months ago only if no events were reported in the past 12 months across all three sexual experiences measures. The reason for this rule was to minimize bias introduced by asking participants to recall events that occurred more than 12 months ago.
3. Within the same time frame (i.e., within the past 12 months or more than 12 months ago), events that were captured by the SES-SFP were prioritized over both the CTS2-SC and the SSS, and events captured by the CTS2-SC were prioritized over events captured by the SSS. In other words, if one event was endorsed on the SES-SFP, then that event was the focus of the event-related follow-up questionnaire regardless of what was reported on the CTS2-SC or the SSS. If no items were endorsed on the SES-SFP, but an event was endorsed on the CTS2-SC, then the CTS2-SC event was the focus of the event-related follow-up questionnaire regardless of what was reported on the SSS. The event-related follow-up questionnaire focused on items on the SSS only if no events were endorsed on both the SES-SFP and the CTS2-SC.
4. Each of the three sexual assault perpetration measures asks about a range of assaultive behaviors and coercive tactics that differ in their degree of severity, but each does so in different ways. For instance, the SES-SFP distinguishes between the following five categories in increasing order of severity: sexual contact, attempted coercion (the behavior was attempted but not successfully accomplished), coercion, attempted rape, and rape (see Koss et al., 2007; 2008). By contrast, the CTS2-SC differentiates among verbal coercion, use of threats, and use of force. Once a timeframe (rule 2) and a measure

(rule 3) were selected, the most severe event on the given measure for the given timeframe was prioritized over a less severe event. For instance, if a participant did not endorse any events in the past 12 months on the SES-SFP, but on the CTS2-SC they endorsed at least one event of verbal coercion and multiple events that utilized force in the past 12 months, the follow-up questions were directed toward the event from the CTS2-SC that utilized force in the past 12 months.

5. Even when a timeframe (rule 2), measure (rule 3), and severity level (rule 4) for a given participant was identified, it is still possible that a participant reported having engaged in that behavior more than once. In this case, participants were instructed that they should focus on the event that was best remembered when responding to the event-related follow-up questions.

Before responding to event-related follow-up questions, participants were presented with a prompt to orient them to the one specific sexual assault event they should refer to in answering the follow-up questions based on the aforementioned rules. The text of the prompt that was presented was specific to the event that was selected for the follow-up questions. The survey software was programmed to evaluate participants' responses to the three sexual experience measures and identify one specific event for the follow-up questions and present a corresponding orienting text based on the aforementioned rules. Participants who did not endorse any event across all three sexual experience measures were not presented with the event-related follow-up questionnaire.

At the end of the survey, a page was displayed confirming completion of the survey and providing debriefing information. The page then redirected to another website where participants

were able to enter an email address to which monetary compensation in the form of a gift card was sent.

All the data were collected via an online survey using Qualtrics survey software (Research Core) on a secure website. Given that participants were asked to provide information about potentially criminal activity, steps were taken to protect participants' identities as follows: (a) IP addresses were not collected; (b) an IRB exemption to document informed consent was obtained; and (c) collection of identifying information for the purpose of remuneration occurred through a separate web page, and no list directly linking identifying information with study data was created. The study was approved by the local Institutional Review Board.

RESULTS

Descriptive Analyses

All statistical analyses were conducted with SPSS Statistical software, Version 25.0. Among the two perpetrator groups that received the event-related follow-up questions, 77% ($n = 88$) of the specific events selected as a reference in responding to these questions occurred in the past 12 months. The rest of the events used as a reference occurred prior to 12 months ago. Specifically, in the rape perpetration group, 86% ($n = 32$) of the events selected occurred in the past 12 months; in the contact/coercion perpetration group, 73% ($n = 56$) of the events selected occurred in the past 12 months.

Thirty-three percent ($n = 38$) of participants classified as perpetrators across the two perpetrator groups did not endorse any item on the SES-SFP but did endorse items on the CTS2-SC or the SSS. However, due to the prioritization of reported sexual assault incidents that occurred in the past 12 months over incidents that occurred prior to 12 months ago, only 50% ($n = 57$) of the specific events selected as a reference in responding to the event-related follow-up questions were events that were endorsed on the SES-SFP. The remaining perpetration events used as a reference in responding to these questions were endorsed on the CTS2-SC and SSS (25% and 25%, respectively). Nonetheless, for the more severe level of perpetration (i.e., rape perpetration), 78% ($n = 29$) of events used as a reference were endorsed on the SES-SFP. Contrastingly, for the lower severity perpetration (i.e., contact/coercion), 64% ($n = 49$) of events used as a reference were endorsed on the CTS2-SC or SSS. The frequencies of the different sexual assault perpetration events used as a reference in responding to the event-related follow-up questionnaire are presented in Table 2.

The results of the Marlow-Crowne Social Desirability Scale did not suggest that participants were seeking to present themselves in a socially desirable manner. As such, there is no indication that participants' responses to the other measures in the study were invalid.

Primary Analyses

Distal factors

A series of five separate multinomial logistic regression analyses were conducted with single independent variables to assess whether each of the distal variables significantly predicted a lifetime history of sexual assault perpetration. The independent variables were all continuous and comprised general frequent alcohol use (hypothesis 1a), general heavy episodic drinking (hypothesis 1b), general bar/party attendance (hypothesis 2a), sexual enhancement alcohol expectancies (hypothesis 3a), and social facilitation alcohol expectancies (hypothesis 3b). The dependent categorical variable for all analyses was perpetration category (no perpetration, contact/coercion perpetration, rape perpetration). No perpetration was used as the reference category for these analyses. Regression coefficients for each of these analyses are presented in Table 3.

Regression results indicated that general frequent alcohol use (i.e., distal frequent alcohol use) during the past 12 months [-2 Log Likelihood = 62.498, $\chi^2(2) = 21.731$, $p < .001$, Nagelkerke $R^2 = .153$], general heavy episodic drinking (i.e., distal heavy episodic drinking) during the past 12 months [-2 Log Likelihood = 43.816, $\chi^2(2) = 13.714$, $p < .01$, Nagelkerke $R^2 = .110$], frequency of bar, club, or party attendance (i.e., general bar/party attendance) during the past 12 months [-2 Log Likelihood = 101.969, $\chi^2(2) = 41.119$, $p < .001$, Nagelkerke $R^2 = .274$], alcohol expectancies related to sexual enhancement [-2 Log Likelihood = 83.817, $\chi^2(2) = 51.835$,

$p < .001$, Nagelkerke $R^2 = .339$] were all individually statistically reliable in distinguishing between having a lifetime history of sexual assault perpetration or not, including both levels of perpetration (i.e., contact/coercion perpetration and rape perpetration). In all cases, endorsement of the predictor variable was associated with a modest increased likelihood of also reporting a history of perpetration, with odds ratios ranging between 1.184 – 2.162 for specific comparisons.

In addition, results indicated that overall alcohol expectancies related to social facilitation were statistically reliable in distinguishing between having a lifetime history of sexual assault perpetration or not [-2 Log Likelihood = 92.108, $\chi^2(2) = 22.414$, $p < .001$, Nagelkerke $R^2 = .16$]. However, the regression coefficients for the two levels of sexual assault perpetration (i.e., contact/coercion perpetration and rape perpetration) indicated that alcohol expectancies related to social facilitation were only significantly predictive of the rape level of perpetration [$B = .243$, $p < .001$, Odds ratio = 1.275] but not for the contact/coercion level [$B = .017$, $p = .675$, Odds ratio = 1.017].

Following the single predictor multinomial logistic regression analyses, a forward entry stepwise multinomial logistic regression analysis was conducted to determine which of the above five independent variables (i.e., general frequent alcohol use, general heavy episodic drinking, general bar/party attendance, sexual enhancement alcohol expectancies, and social facilitation alcohol expectancies) would have significant, unique predictive power to be included in an overall model to reliably distinguish between having a lifetime history of sexual assault perpetration or not. All the preceding continuous variables were entered as the independent variables. The dependent categorical variable was perpetration category (no perpetration, contact/coercion perpetration, rape perpetration). No perpetration was used as the reference category for this analysis.

The results indicated that three of the predictor variables were significant to be included in the model. In order of predictive significance, these included sexual enhancement alcohol expectancies [$\chi^2(2) = 39.381, p < .001$], general bar/party attendance [$\chi^2(2) = 14.754, p < .01$], and social facilitation alcohol expectancies [$\chi^2(2) = 9.606, p < .01$]. The overall model consisting of the three variables was statistically significant [-2 Log Likelihood = 199.66, $\chi^2(6) = 63.741, p < .001$, Nagelkerke $R^2 = .443$]. The model was able to correctly classify 65.2% of cases. Regression coefficients for each level of sexual assault perpetration (i.e., contact/coercion perpetration and rape perpetration) for all three predictor variables included in the model are presented in Table 4.

As can be seen in the Table, sexual enhancement alcohol expectancies were a reliable predictor for both contact/coercion perpetration [$B = .267, p < .001$, Odds ratio = 1.306] and rape perpetration [$B = .357, p < .001$, Odds ratio = 1.430]. However, once this predictor was in the model, general bar/party attendance continued to have unique predictive power only for rape perpetration [$B = .250, p < .01$, Odds ratio = 1.284], but not for contact/coercion perpetration [$B = .104, p = .149$, Odds ratio = 1.110]. Furthermore, after the above two predictors were in the model, social facilitation alcohol expectancies did not have unique predictive power even for rape perpetration [$B = .058, p = .501$, Odds ratio = 1.059] and was predictive in the opposite direction for contact/coercion perpetration [$B = -.120, p < .05$, Odds ratio = .887].

Proximal alcohol use

A chi-square goodness-of-fit analysis was conducted with the whole perpetrator group (combined contact/coercion perpetration and rape perpetration) to determine whether reported incidents of perpetration were more likely than not to involve alcohol use by the perpetrator at

the time of the assault (i.e., proximal alcohol use; hypothesis 1c). The results presented in the top two panels Table 5 indicated that incidents of perpetration were not significantly more likely to involve alcohol use by the perpetrator specifically before the assault [$\chi^2(1) = 0.221, p = .638$] or at any time before, during, or after the assault [$\chi^2(1) = 1.991, p = .158$].

A 2x2 chi-square analysis was then conducted to assess whether proximal alcohol use was differential across the two perpetrator groups (i.e., contact/coercion perpetration and rape perpetration). The results presented in the top two panels of Table 6 indicate that the rape perpetrator group was more likely to have used alcohol specifically immediately prior to the assault (84%) than the contact/coercion perpetrator group (37%) [$\chi^2(1) = 21.977, p < .001$] and at any time before, during, or after the assault (84% vs. 43%, respectively) [$\chi^2(1) = 16.507, p < .001$]. The percentages of alcohol use and no alcohol use by the perpetrator across the two perpetrator groups are also presented in Figure 3. An independent-samples median test with Yates's continuity correction was conducted to assess whether there was a difference between the two perpetrator groups with regard to the amount of alcohol used when alcohol use was reported. The results indicated that the grand median of alcohol consumed was 7-9 standard drinks. No significant difference in the amount of proximal alcohol use by the perpetrator was observed between the two groups, $\chi^2(1) = .389, p = .533$.

Similar analyses were conducted to determine whether incidents of perpetration were more likely than not to involve alcohol use by the victim at the time of the assault. These results were similar to the results of alcohol use by the perpetrator described above and are presented in the middle two panels of Tables 5 and 6 below. The chi-square goodness-of-fit analysis with the whole perpetrator group (combined contact/coercion perpetration and rape perpetration) was not

statistically significant for alcohol use immediately prior to the assault [$\chi^2(1) = 1.090, p = .296$] and when looking at alcohol use before, during, or after the assault [$\chi^2(1) = 2.604, p = .107$]. However, the results of the 2x2 chi-square analysis assessing proximal alcohol use by the victim across the two perpetrator groups (i.e., contact/coercion perpetration and rape perpetration) suggested that among the rape perpetrator group compared to the contact/coercion group it was more likely that victims used alcohol both immediately prior to the assault [84% vs. 40%, respectively; $\chi^2(1) = 18.633, p < .001$] and at any time before, during, or after the assault [84% vs. 45%, respectively; $\chi^2(1) = 15.517, p < .001$]. The percentages of alcohol use and no alcohol use by the victim across the two perpetrator groups are presented in Figure 4.

In order to evaluate whether reported incidents of sexual assault perpetration were more likely to involve alcohol use by both the perpetrator and the victim compared to alcohol use by one party alone (hypothesis 1d), a chi-square goodness-of-fit analysis was conducted with the whole perpetrator group (combined contact/coercion perpetration and rape perpetration) across the four possible scenarios (i.e., alcohol use by both the perpetrator and the victim, alcohol use by the perpetrator only, alcohol use by the victim only, no alcohol use by both the perpetrator and the victim). The results were statistically significant [$\chi^2(3) = 67.27, p < .001$], with 52% of assaults involving alcohol use by both the perpetrator and the victim and only 12% of assaults involving alcohol use by one party alone.

A 2x4 chi-square analysis was then conducted across the two perpetrator groups (i.e., contact/coercion perpetration and rape perpetration). The results indicated that across both perpetrator groups incidents of sexual assault perpetration were more likely to involve alcohol use by both the perpetrator and the victim compared to alcohol use by one party alone, $\chi^2(3) = 24.418, p < .001$. This was especially the case in the rape perpetrator group where 84% of sexual

assaults involved alcohol use by both the perpetrator and the victim. Additionally, even in the contact/coercion perpetrator group where a significant number of assaults did not involve alcohol use by both the perpetrator and the victim, only a very small number of sexual assaults involved alcohol use by just one party. In the contact/coercion group, 10% of assaults involved alcohol use only by the perpetrator and 10% of assaults involved alcohol use only by the victim. In the rape group, not a single reported assault involved alcohol use by only one party. The percentages of the different combinations of alcohol use by the perpetrator and victim across the two perpetrator groups are presented in Figure 5.

Proximal bar/party attendance

A chi-square goodness-of-fit analysis was conducted with the whole perpetrator group (combined contact/coercion perpetration and rape perpetration) to determine whether reported incidents of perpetration were more likely to have taken place at, or immediately after leaving, a bar/party (i.e., proximal alcohol use) than not (hypothesis 2c). The results presented in the bottom two panels of Table 5 below indicated that incidents of sexual assault perpetration were actually significantly *less* likely to have taken place at [$\chi^2(1) = 9.143, p < .01$] or immediately after leaving [$\chi^2(1) = 17.920, p < .001$] a bar, party, club, or large social gathering, with 64-70% of assaults *not* occurring at or immediately after leaving one of these environments, respectively. Follow-up 2x2 chi-square analyses indicated that this was particularly the case in the contact/coercion perpetration group (see bottom two panels of Table 6). Furthermore, even among the rape perpetrator group that reported a higher percentage of incidents of sexual assaults occurring *at* a bar or party than not (65% vs. 35%, respectively), the observed percentage was not statistically different than the expected percentage. The percentages of proximal bar/party across the two perpetrator groups are also presented in Figure 6.

Secondary Analyses

Functional impact of alcohol use

A multinomial logistic regression analysis was conducted to assess whether the level of functional impact of alcohol use as assessed with the Problems Related to Alcohol subscale from the Student Alcohol Questionnaire (SAQ; Engs, 1975) significantly predicted a lifetime history of sexual assault perpetration.

Regression results indicated that overall functional impact of alcohol use was statistically reliable in distinguishing between having a lifetime history of sexual assault perpetration or not [-2 Log Likelihood = 102.687, $\chi^2(2) = 37.959$, $p < .001$, Nagelkerke $R^2 = .290$]. However, the regression coefficients for the two levels of sexual assault perpetration (i.e., contact/coercion perpetration and rape perpetration) indicated that functional impact of alcohol use was only significantly predictive of the rape level of perpetration [$B = .189$, $p < .001$, Odds ratio = 1.208] but not for the contact/coercion level [$B = .037$, $p = .419$, Odds ratio = 1.038].

General aggression

A multinomial logistic regression analysis was conducted to assess whether general aggressive tendencies assessed with the Buss-Perry Aggression Questionnaire significantly predicted a lifetime history of sexual assault perpetration. Regression results indicated that overall general aggression was statistically reliable in distinguishing between having a lifetime history of sexual assault perpetration or not [-2 Log Likelihood = 200.25, $\chi^2(2) = 18.494$, $p < .001$, Nagelkerke $R^2 = .138$]. However, the regression coefficients for the two levels of sexual assault perpetration (i.e., contact/coercion perpetration and rape perpetration) indicated that general aggression was only significantly predictive of the rape level of perpetration [$B = .036$, p

< .01, Odds ratio = 1.036] but not for the contact/coercion level [$B = -.012$, $p = .280$, Odds ratio = .988].

General substance use

A series of multinomial logistic regression analyses were conducted with single independent variables to assess whether each of several substance use categories significantly predicted a lifetime history of sexual assault perpetration. The substance use categories comprised cannabis, cocaine, stimulants, methamphetamine, inhalants, sedatives or sleeping pills, hallucinogens, street opioids, and prescription opioids. Regression results indicated that cannabis use [-2 Log Likelihood = 58.558, $\chi^2(2) = 14.531$, $p < .01$, Nagelkerke $R^2 = 1.06$], cocaine use [-2 Log Likelihood = 20.125, $\chi^2(2) = 26.807$, $p < .001$, Nagelkerke $R^2 = 1.91$], stimulant use [-2 Log Likelihood = 40.714, $\chi^2(2) = 6.044$, $p < .05$, Nagelkerke $R^2 = .045$], and hallucinogen use [-2 Log Likelihood = 34.268, $\chi^2(2) = 20.613$, $p < .001$, Nagelkerke $R^2 = .148$] during the past 12 months were all individually statistically reliable in distinguishing between having a lifetime history of sexual assault perpetration or not.

Following the single predictor multinomial logistic regression analyses, a forward entry stepwise multinomial logistic regression analysis was conducted with the above substances in addition to alcohol use to determine which of these substances would have significant, unique predictive power to be included in an overall model to reliably distinguish between having a lifetime history of sexual assault perpetration or not.

The results indicated that only cocaine use [$\chi^2(2) = 26.338$, $p < .001$] and alcohol use [$\chi^2(2) = 14.697$, $p < .01$] were significant to be included in the model. The overall model comprising these two substances was statistically significant [-2 Log Likelihood = 222.585, $\chi^2(4)$

= 41.034, $p < .001$, Nagelkerke $R^2 = .283$]. However, the regression coefficients for the two levels of sexual assault perpetration (i.e., contact/coercion perpetration and rape perpetration) indicated that whereas alcohol use was significantly predictive for both the contact/coercion level [$B = .319$, $p < .05$, Odds ratio = 1.376] and the rape level [$B = .449$, $p < .01$, Odds ratio = 1.567] of perpetration, cocaine use was only significantly predictive of the rape level of perpetration [$B = 1.838$, $p < .05$, Odds ratio = 6.281] but not for the contact/coercion level [$B = .646$, $p = .385$, Odds ratio = 1.908]. In addition, the odds ratios for cocaine use among the rape group ranged from 1.465 – 26.924, indicating substantially large variability.

DISCUSSION

The primary aim of the present study was to gain a better understanding of how various alcohol related factors are associated with, and potentially increase the risk for, sexual assault perpetration among college men. While a substantial number of studies have previously investigated the association between alcohol related factors and sexual assault perpetration, as noted in the introduction to this paper, the aim of the present study was to gain a deeper and finer grained understanding of these associations. In addition, whereas previous studies have investigated these various potential risk factors in isolation (i.e., analyzing one alcohol related variable at a time), the present study assessed these alcohol related factors both in isolation (i.e., univariate analyses) and in combination (i.e., multivariate analysis).

Furthermore, in considering potential risk factors for the occurrence of any behavior, and specifically sexual assault perpetration, it is important to differentiate between distal and proximal risk factors. Distal factors are elements that occur or are experienced temporally distant from a specific behavior. Proximal factors, on the other hand, are elements that occur or are experienced close in time to the behavior. Although the time frame for differentiating distal and proximal factors is relative and may vary from behavior to behavior and from situation to situation, this distinction is important to better understand the controlling variables and functions of a specific behavior. Furthermore, intervention strategies aimed at minimizing the risk for, or occurrence of, the behavior may vary depending on whether the target of the intervention is a distal or proximal risk factor. As such, an important aim of the present study was to evaluate the association between both distal and proximal alcohol related factors and sexual assault perpetration.

It is critical to note that sexual assault can range in severity from nonconsensual physical contact of a sexual nature to nonconsensual completed vaginal, anal, or oral penetration (i.e., rape) using physical force (Cortina, Koss, & Cook, 2018). Many studies investigating potential risk factors for sexual assault perpetration do not evaluate whether these risk factors vary depending on the severity level of the sexual assault perpetrated. However, this may result in drawing erroneous inferences from data analyses. For example, while data results may indicate that a particular variable is a risk factor for sexual assault perpetration, this may actually be the case only for one level of sexual assault severity (e.g., rape) but not for another level of severity (e.g., nonconsensual sexual contact). In other words, inferences drawn may be a false positive (i.e., a Type I error). Additionally, while data results may indicate that a particular variable is not significantly predictive of sexual assault perpetration, this may actually be because different levels of sexual assault severity are inversely associated with the particular variable and thus obscuring the data demonstrating that the variable is indeed significantly predictive of perpetrating a particular level of sexual assault. In other words, results may suggest a false negative (i.e., a Type II error).

In the present study, sexual assault perpetration was divided into two levels of severity and data results were obtained for each of these two levels. The lower level of sexual assault perpetration severity comprised individuals who endorsed engaging at least once in either nonconsensual sexual contact, attempted penetration, or actual penetration using verbal coercion, their older age or authority, or other enticement strategies (i.e., contact/coercion group). The higher level of sexual assault perpetration severity comprised individuals who endorsed engaging at least once in either attempted penetration or actual penetration using physical force, threatening to use physical force, or while the victim was intoxicated or incapacitated (i.e., rape

group). It is important to note that different levels of severity are not indications of the severity of the effects of the different types of sexual assault on the victim, rather they are classifications of the severity of the behavior committed by the perpetrator.

One potential alcohol related risk factor is problematic alcohol use. A substantial number of studies have found that general (i.e., distal) problematic alcohol use is associated with sexual assault perpetration (e.g., Abbey et al., 1998; Abbey & McAuslan, 2004; Carr & VanDeusen, 2004; Locke & Mahalik, 2005; Parkhill & Abbey, 2008; Tuliao, & McChargue, 2014; White, McMullin, Swartout, Sechrist, & Gollehon, 2008). However, past studies generally have not assessed whether different forms of general problematic alcohol use, such as frequency of alcohol use and heavy episodic drinking, have varying associations with sexual assault perpetration. As such, the present study investigated both the association between general frequent alcohol use (i.e., distal frequent alcohol use) and sexual assault perpetration (hypothesis 1a) and the association between general heavy episodic drinking (i.e., distal heavy episodic drinking) and sexual assault perpetration (hypothesis 1b).

Results indicated that both general frequent alcohol use and general heavy episodic drinking during the past 12 months were individually statistically reliable in distinguishing between endorsing a lifetime history of sexual assault perpetration or not. This was found for both levels of sexual assault severity (i.e., contact/coercion perpetration and rape perpetration). However, the odds ratio results suggested that more frequent general alcohol use and higher general heavy episodic drinking were more predictive of also endorsing more severe forms of sexual assault (i.e., rape perpetration) than less severe forms of sexual assault perpetration (i.e., contact/coercion perpetration). Additionally, the odds ratios for both levels of sexual assault

perpetration were higher for the predictive factor of general heavy episodic drinking compared to predictive factor of general frequency of alcohol use.

These data provide further support to previous study findings that general problematic alcohol use is significantly associated with sexual assault perpetration and suggest that while this is the case for both frequency of alcohol use and heavy episodic drinking, the latter may be more predictive than the former. Furthermore, alcohol use may be especially predictive for more severe forms of sexual assault perpetration. It should also be noted that secondary analyses in the present study found that higher negative functional impact of alcohol use was only significantly predictive of the rape level of perpetration but not for the contact/coercion level.

A second potential alcohol related risk factor is bar and party attendance. These environments attract people who are looking to “hook up” and facilitate increased sexual activity (Testa & Cleveland, 2017) and may thus increase the likelihood of the occurrence of sexual assault, independent of any alcohol use. As such, attending bars, parties, and similar contexts may be a greater risk factor for sexual assault perpetration than actual alcohol use. In fact, one recent longitudinal study found that although the association between heavy alcohol use and sexual assault perpetration was not significant after accounting for various other risk factors for sexual assault perpetration, frequency of bar or party attendance remained significantly associated with sexual assault perpetration (Testa & Cleveland, 2017). Consequently, the present study investigated the association between frequency of bar, club, or party attendance (i.e., general bar/party attendance) and sexual assault perpetration (hypothesis 2a). Additionally, this study further assessed whether general bar/party attendance is uniquely and more strongly associated with sexual assault perpetration than general problematic alcohol use, as suggested by Testa and Cleveland (2017; hypothesis 2b).

The results of the present study indicated that frequency of bar/party attendance during the past 12 months was statistically reliable in distinguishing between endorsing a lifetime history of sexual assault perpetration or not. This was found for both levels of sexual assault severity (i.e., contact/coercion perpetration and rape perpetration), but odds ratios were higher for more severe forms of sexual assault (i.e., rape perpetration). Moreover, in a follow-up multinomial regression with several alcohol related risk factors for sexual assault perpetration, frequency of bar/party attendance still provided unique predictive power for rape perpetration whereas general problematic alcohol use did not provide unique predictive power for both levels of perpetration. These data provide support for the results of Testa and Cleveland (2017) that frequency of bar/party attendance is uniquely and more strongly associated with sexual assault perpetration than general problematic alcohol use and goes a step further to clarify that this may be the case specifically for more severe forms of sexual assault perpetration.

A third important potential alcohol related risk factor for sexual assault perpetration is holding certain expectations and beliefs about the effects of alcohol use, specifically expectations related to sexual enhancement and social facilitation. Strong endorsement of these alcohol expectancies may be associated with increased sexual arousal and sexual behavior independent of the pharmacological effects of alcohol (George et al., 2000; Lang et al., 1980). The present study investigated the association between endorsement of alcohol expectancies related to sexual enhancement and sexual assault perpetration (hypothesis 3a) and the association between endorsement of alcohol expectancies related to social facilitation and sexual assault perpetration (hypothesis 3b).

The results indicated that alcohol expectancies related to sexual enhancement was statistically reliable in distinguishing between endorsing a lifetime history of sexual assault

perpetration or not. Additionally, like the first two alcohol related factors mentioned above, this association was significant for both levels of sexual assault severity (i.e., contact/coercion perpetration and rape perpetration), but odds ratios were higher for more severe forms of sexual assault (i.e., rape perpetration). However, with regard to alcohol expectancies related to social facilitation, a significant association was observed only with rape perpetration but not for contact/coercion perpetration. These results are important as this is the first study known to the author indicating a significant association between specific alcohol expectancies and sexual assault perpetration. Moreover, the results demonstrate that different alcohol expectancies (i.e., sexual enhancement expectancies vs. social facilitation expectancies) have varying associations with sexual assault perpetration depending on the level of sexual assault severity.

Furthermore, in a follow-up multinomial regression with all the alcohol related risk factors for sexual assault perpetration evaluated in this study, alcohol expectancies related to sexual enhancement showed the strongest predictive power for both contact/coercion perpetration (Odds ratio = 1.306) and rape perpetration (Odds ratio = 1.430). In fact, once alcohol expectancies related to sexual enhancement were used to predict endorsement of a history of sexual assault perpetration, almost none of the other alcohol related risk factors discussed above added any predictive value, including general heavy episodic drinking. The only exception to this was frequency of bar/party attendance, which provided significant additional predictive value, but only for rape perpetration and not for contact/coercion perpetration.

The results of the present study on alcohol related distal risk factors for sexual assault perpetration demonstrate the importance of evaluating these risk factors in multivariate analyses to determine which factors have unique predictive power over other individual risk factors. In this study, although all the alcohol related factors assessed were individually significantly

associated with sexual assault perpetration, most of these factors lost their predictive power when evaluating them together with other risk factors. These results may explain why, for example, some previous studies have not found a significant association between problematic alcohol use and sexual assault perpetration (e.g., Calhoun, Bernat, Clum, & Frame, 1997; Loh et al., 2005; Lyndon, White, & Kadlec, 2007). For as already suggested by Tharp et al. (2013), significant risk factors may be obscured by stronger predictive factors in multivariate analyses. The findings of the present study suggest that from among various alcohol related distal risk factors for sexual assault perpetration, strong belief in the enhancing effects of alcohol on sexual activity may be the strongest distal risk factor for sexual assault perpetration.

However, as noted earlier, in investigating potential risk factors for sexual assault perpetration it is also critical to identify potential proximal risk factors. One obvious proximal alcohol related risk factor is the use of alcohol immediately before, during, or immediately after perpetrating sexual assault. Koss (1988) reported that 74% of perpetrators of rape in a nationally representative sample of college students reported having consumed alcohol at the time of the assault. However, Testa and Cleveland (2017) argued that more data is needed to assess involvement of alcohol use in reported incidence of sexual assault perpetration. Consequently, the present study investigated whether reported incidents of sexual assault were significantly more likely to involve alcohol use by the perpetrator at the time of the assault (i.e., proximal alcohol use) than not (hypothesis 1c).

The results indicated that among rape perpetrations, alcohol was more likely to have been used immediately prior to the assault and at any time before, during, or after the assault. In fact, 84% of perpetrators of the rape level of sexual assault reported having consumed alcohol at the time of the assault. Notably, this was the case only among reported incidents of rape

perpetrations. By contrast, less than 50% of contact/coercion perpetrators reported having consumed alcohol at the time of the assault. Moreover, when analyzing the whole perpetrator group together (combined contact/coercion perpetration and rape perpetration), the results indicated that incidents of perpetration were not significantly more likely to involve alcohol use by the perpetrator specifically before the assault or at any time before, during, or after the assault. Only when analyzing the two levels of sexual assault severity separately did it become apparent that rape perpetration was significantly more likely than not to involve alcohol use by the perpetrator at the time of the assault. This underscores the point noted earlier that different levels of sexual assault severity may have varying proximal risk factors. Consequently, it is critical for studies investigating risk factors for sexual assault perpetration to assess different levels of sexual assault severity separately.

In addition, the data suggested that reported incidents of sexual assault perpetration were more likely to involve alcohol use by both the perpetrator and the victim compared to alcohol use by one party alone (hypothesis 1d). Fifty-two percent of assaults reported in the present study involved alcohol use by both the perpetrator and the victim whereas only 12% of assaults involved alcohol use by one party alone. This finding was even more significant among incidents of rape perpetration, where 84% of reported assaults involved alcohol use by both the perpetrator and the victim and not a single reported incident involved alcohol only by one party alone (see Figure 5).

Another important potential proximal alcohol related risk factor is being at a bar, party, club, or large social gathering. The “mood” and function of these environments tends to facilitate increased sexual activity (Testa & Cleveland, 2017) and may thus increase the risk of occurrence of sexual assault either at one of these environments or close in time after leaving one of these

environments. However, the results of the present study indicated that incidents of sexual assault perpetration were actually significantly *less* likely to have taken place at or immediately after leaving of these environments. This was particularly the case for contact/coercion perpetration where 79% of reported assaults did not occur *at* a bar, party, etc. and 75% of reported assaults did not occur immediately *after* leaving a bar, party, etc. Furthermore, even in cases of rape perpetration where the data indicated a trend toward a higher percentage of incidents occurring *at* a bar, party, etc. than not (65% vs. 35%, respectively), the observed percentage was not statistically different than the expected percentage. As such, although frequency of bar/party attendance has been found to be a distal risk factor for sexual assault perpetration, as discussed above, proximal bar/party attendance does not seem to be a significant proximal risk factor for perpetration. Consequently, hypotheses 2c and 2d of this study are not supported by the present data.

Implications

The results of the present study have noteworthy implication for both research and intervention purposes. First, as noted earlier, sexual assault can range in severity from nonconsensual physical contact to completed rape using physical force. The present study demonstrates that different levels of sexual assault severity can have different associated risk factors. For example, the results of this study indicated that the various alcohol related risk factors assessed in this study were more predictive of perpetrating a higher level of sexual assault severity. Additionally, proximal alcohol use was only significantly predictive of higher severity forms of sexual assault perpetration (i.e., rape) but not lower severity forms of perpetration (i.e., contact/coercion). This has implications for developing sexual assault perpetration intervention

programs, as risk factors to be addressed and stressed would vary depending on the type of sexual assault being targeted.

Moreover, this information was learned from the present study only because different levels of sexual assault severity were specifically assessed. In fact, some of this information would have been lost if sexual assault perpetration had been assessed as a monolithic group; that is, having sexual assault perpetration assessed as a binary outcome variable (i.e., perpetration vs. non-perpetration) and ignoring severity level. Furthermore, if sexual assault perpetration had been assessed as a binary outcome variable, we may have concluded that proximal alcohol use was not a risk factor for sexual assault perpetration at all, as the data suggested that incidents of perpetration were not significantly more likely to involve alcohol use by the perpetrator when analyzing the whole perpetrator group together (combined contact/coercion perpetration and rape perpetration). Only when analyzing the two levels of sexual assault severity separately did it become apparent that rape perpetration was significantly more likely than not to involve proximal alcohol use by the perpetrator. This has important implications for research on sexual assault perpetration. The data from this study makes it clear that it is critical for studies investigating risk factors for sexual assault perpetration to assess different levels of sexual assault severity separately.

It should be noted that at the outset of the present study, the plan was in fact to assess sexual assault perpetration as a binary outcome variable regardless of severity level. The primary reason for this was that it was not expected that enough participants would report engaging in each of the different types of sexual assault severity levels to be adequate for data analyses. Therefore, although data was obtained about participants' engagement in different levels of sexual assault severity, the initial plan was to combine all reported incidents of perpetration into

a single group. Indeed, this may also be the reason why a large number of published studies on sexual assault perpetration have relied on a simple binary outcome measure of assault.

However, after data collection and demographics analyses in the present study (*prior* to any analyses of the study hypotheses), it became clear that many more participants reported engaging in some form of sexual assault perpetration than initially expected. Consequently, the decision was made to divide reported incidents of sexual assault perpetration into two levels of severity (i.e., contact/coercion perpetration and rape perpetration) for the study's primary analyses. This decision turned out to be valuable and essential and demonstrates the importance of viewing sexual assault perpetration as dimensional, consisting of different levels or forms, rather than a single uniform behavior. In light of all this, future studies should plan to recruit an adequate sample size that would have reasonable power to assess multiple levels of sexual assault severity.

The fact that many more participants in the present study reported engaging in some form of sexual assault perpetration than initially expected has another implication for sexual assault perpetration research. One reason for this result is that this study included three different measures for sexual assault perpetration. In addition, to the revised Sexual Experiences Survey-Short Form Perpetration (SES-SFP; Koss et al., 2007; 2008), which is the most used measure of sexual assault perpetration among college students, the Sexual Strategies Scale (SSS; Peterson, Janssen, Heiman, Goodrich, Thigpen, & Fortenberry, 2010; Strang, Peterson, Hill, & Heiman, 2013) and the Sexual Coercion (SC) subscale from the revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) were also administered. These additional measures were included precisely in order to obtain higher rates of participant endorsement of various types of sexual aggression. Indeed, several studies have found that the SSS yielded

higher rates of participant endorsement of various types of sexual aggression compared to the SES-SFP (Strang et al., 2013; Testa, Hoffman, Lucke, & Pagnan, 2015). Similarly, Anderson, Cahill, and Delahanty (2018) found that the CTS2-SC identified significantly more cases of sexual violence perpetration than the SES-SFP. In fact, in the present study, 38 participants (one third of participants classified as perpetrators) did not endorse any item on the SES-SFP but did endorse items on the SSS or CTS2-SC. As such, studies on sexual assault perpetration should consider including more than one measure of sexual assault perpetration, especially when one measure may capture reports of perpetration that may not be obtained from a different measure.

In addition, the substantial number of participants that reported engaging in some form of sexual assault perpetration in the present study suggests that when provided with assurances of confidentiality and autonomy to provide or withhold any information, participants may be willing to respond honestly about their behaviors in an online survey, even when the behavior may be socially unacceptable or criminal. Furthermore, the results of the Marlow-Crowne Social Desirability Scale in the present study did not suggest that participants were seeking to present themselves in a socially desirable manner. While the reliability and validity of survey data have sometimes been questioned, confidential online surveys may actually be the best method available for obtaining information about engagement in sexual assault perpetration. Indeed, Turner et al. (1998) have found that people are more likely to report private, sensitive information in a computer-based format than with a pen-and-pencil questionnaire. Additionally, several studies have found that social desirability was not a significant threat to self-reporting of sexual assault perpetration on the SES (Cook, 2002; Walker, Rowe, & Quinsey, 1993).

Furthermore, the increased number of participants that reported engaging in some form of sexual assault perpetration in the present study supports the feasibility of conducting additional

research on sexual assault perpetration in a sample of college men similar to the sample that was used in the present study, including potentially longitudinal studies investigating various alcohol related factors that may potentially predict sexual assault prospectively. Studies of risk factors for sexual assault perpetration using longitudinal methodology are currently minimal and are very much needed in order to at least determine temporal patterns between various factors and sexual assault perpetration (Abbey, 2017; Tharp et al., 2013).

Another important implication of the present study is that while various factors may be associated with sexual assault perpetration, some factors may be more strongly associated than others. As such, studies on risk factors for sexual assault perpetration need to assess potential risk factors in isolation (i.e., assessing one factor at a time) and in combination with other significant risk factors (i.e., with multivariate analyses) to determine which factors are most strongly predictive of perpetration. Furthermore, some significant risk factors may not have any unique predictive power over and above other risk factors. Indeed, in the present study while general frequent alcohol use, general heavy episodic drinking, general frequent bar/party attendance, sexual enhancement alcohol expectancies, and social facilitation alcohol were all individually significantly associated with sexual assault perpetration, in multivariate analysis, only sexual enhancement alcohol expectancies (for both levels of perpetration) and general frequent bar/party attendance (for rape perpetration) remained uniquely associated with perpetration. This has important ramifications for intervention purposes, as well. Targeting interventions on the most predictive risk factors may be most effective in reducing overall risk for perpetration. Moreover, addressing the most predictive risk factor may also generalize to other lower-level risk factors, thus minimizing their influence and impact on sexual assault perpetration.

The present study further demonstrates the importance of evaluating both distal and proximal risk factors for sexual assault perpetration. For example, the results of this study indicated that whereas general frequency of attending a bar, party, club, or social gathering was significantly associated with a lifetime history of sexual assault perpetration, incidents of sexual assault were *not* significantly more likely than not to occur at or immediately after leaving one of these environments. Furthermore, even alcohol use, which was found to be a significant distal risk factor for both levels of sexual assault perpetration severity, was found to be a significant proximal risk factor only for more severe forms of sexual assault (i.e., rape) and not for lower severity sexual assault (i.e., contact/coercion). This has critical implications for intervention strategies and programs aimed at minimizing the risk for sexual assault perpetration. These strategies and programs must be clear about whether they are aimed at targeting a distal or proximal risk factor and ensure that they have been found effective for that specific type of risk factor.

Finally, it has long been known that the prevalence rates of both sexual assault perpetration (Thompson et al., 2013) and alcohol use (SAMHSA, 2015) are higher among college students compared to the general population. Additionally, numerous studies have found that alcohol use and other alcohol related factors are associated with sexual assault perpetration. The present study provides further support to these findings and provides additional understanding and clarification of these associations. The alcohol related factors investigated in the present study, including various types of problematic alcohol use, drinking context, and alcohol expectancies are particularly relevant to college students and are potentially modifiable. As such, intervention strategies aimed at preventing and reducing sexual assault in general, and specifically among college students, should focus on targeting these alcohol related factors and

their harmful effects. This may result in significantly reducing rates of sexual assault, especially the more severe forms of sexual assault, such as attempted and completed rape.

Limitations and Future Directions

Several limitations of the present study should be noted. First, the sample size was relatively small, and the number of participants was not equally distributed across the three groups (non-perpetrator group $n = 38$, contact/coercion perpetrator group $n = 77$, and rape perpetrator group $n = 37$). Future research should include a larger sample size and ensure that participants are more equally distributed across the different groups.

Second, given the small sample size, the present study only analyzed two levels of sexual assault severity (i.e., contact/coercion and rape). However, severity levels can be broken down even further to better evaluate the risk factors for the various levels of sexual assault perpetration. Consequently, future research conducted with a larger sample size should seek to gain a better understanding of the risk factors associated with these additional levels of perpetration severity.

Third, it is often difficult to recall details about events that have occurred in the past, especially events that occurred more than 12 months ago. As such, when asking about event-related details, such as whether alcohol was used around the time of sexual assault perpetration, or whether the event occurred at a bar, party, etc., the present study prioritized incidents of reported sexual assault perpetration that occurred within the past 12 months over incidents that occurred prior to 12 months ago (see Procedure section above, rule 2). However, when no incident of sexual assault perpetration in the past 12 months was endorsed but an incident prior to 12 months ago was endorsed, event-related questions were presented regarding that incident and the data obtained were included in results reported here. However, these data may be faulty

and invalid. Additionally, reported sexual assaults prior to 12 months ago may have occurred well before participants were college students and is thus beyond the limits of the present study aim, which was focused on sexual assault perpetration among college men.

Although in the present study only 23% ($n = 26$) of events assessed with the event-related follow-up question occurred prior to 12 months ago, as noted in the Results section above, given the small sample size of this study, this may have significantly influenced the results obtained here. Therefore, future research should seek to only analyze event-related data regarding events that occurred within the past 12 months. Increasing the sample size would make doing this more feasible without risking obtaining an inadequate number of participants endorsing engaging in sexual assault perpetration.

Fourth, although the present study found that perpetrators used alcohol around the time of perpetration in 84% of the more severe forms of sexual assault perpetration (i.e., rape), it is not clear whether perpetrators were actually intoxicated at the time. In addition, the most predictive alcohol related distal risk factor investigated in this study was sexual enhancement alcohol expectancies, as described above. However, it remains unclear whether perpetrators used alcohol at the time of the assault specifically in order to enhance their sexual experiences. This information would be helpful in better understanding the role of the distal risk factor of sexual enhancement alcohol expectancies in sexual assault perpetration. Future research should include additional survey items to answer these questions. Furthermore, sophisticated methodological tools, such as ecological momentary assessment (EMA; see Shiffman, Stone, & Hufford, 2008) that assesses behaviors and experiences in real time, would likely provide greater understanding of the various proximal factors associated with sexual assault perpetration while also minimizing problems with recall bias.

Despite these limitations, the present study provides important information about the role of alcohol use and other alcohol related factors in sexual assault perpetration. Sexual assault is a major public health and criminal justice problem in our society, and particularly among college students. The need for effective interventions to reduce sexual assault is apparent. Primary prevention programs may be enhanced by specifically targeting people who are at increased risk for perpetrating sexual assault based on identified factors that increase the likelihood for occurrence of sexual assault perpetration. Additionally, these programs may be enhanced by being focused on addressing the specific risk factors that are relevant for a particular individual or group of people rather than having an entire specified population (e.g., all college students) receive the same universal, broad spectrum intervention (Testa & Cleveland, 2017; Thompson et al., 2013). Hopefully, the knowledge gained from the present study and similar research studies will promote additional research on this subject and inform the development of effective interventions to significantly reduce and prevent all forms of sexual assault perpetration.

Figure 1
Participant flow diagram

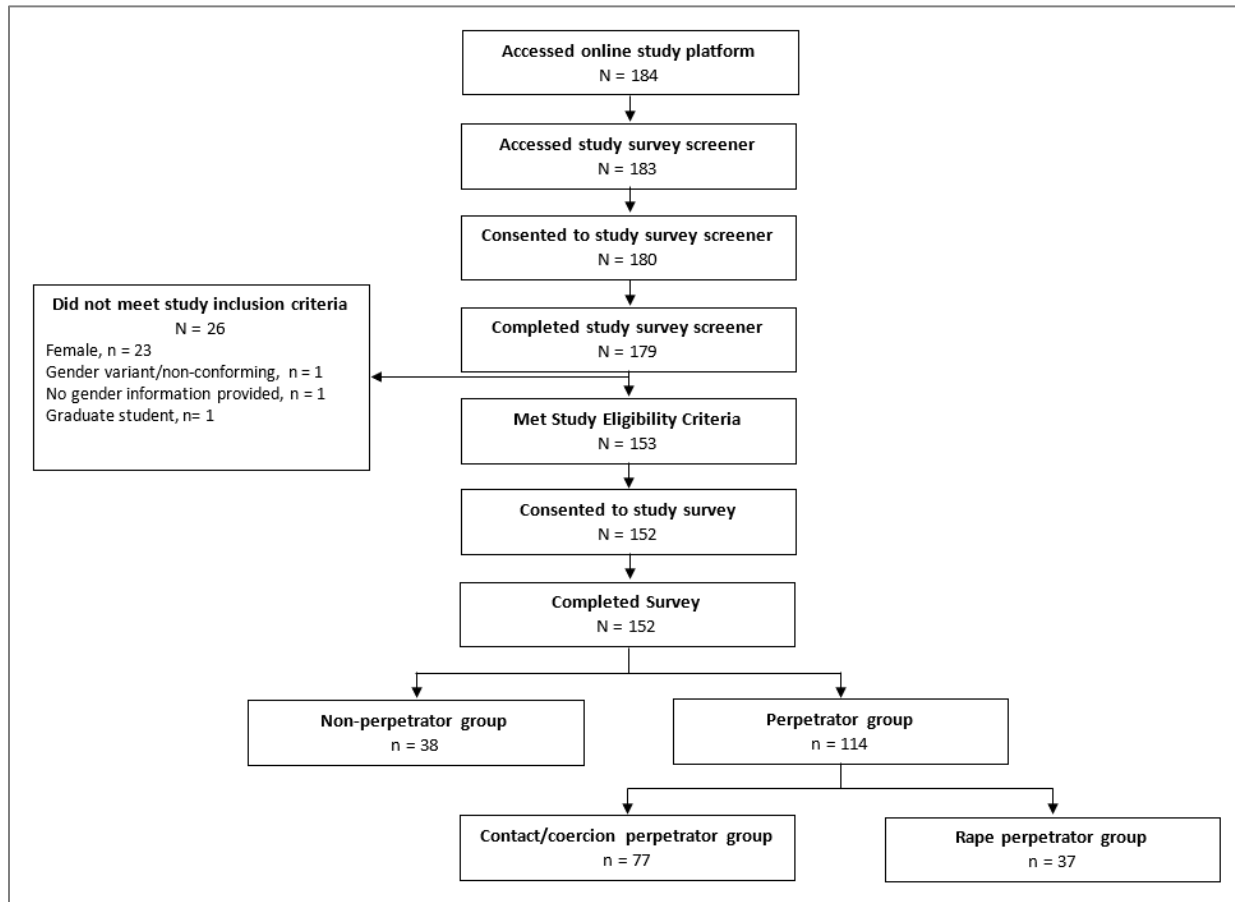


Figure 2
Survey flow diagram

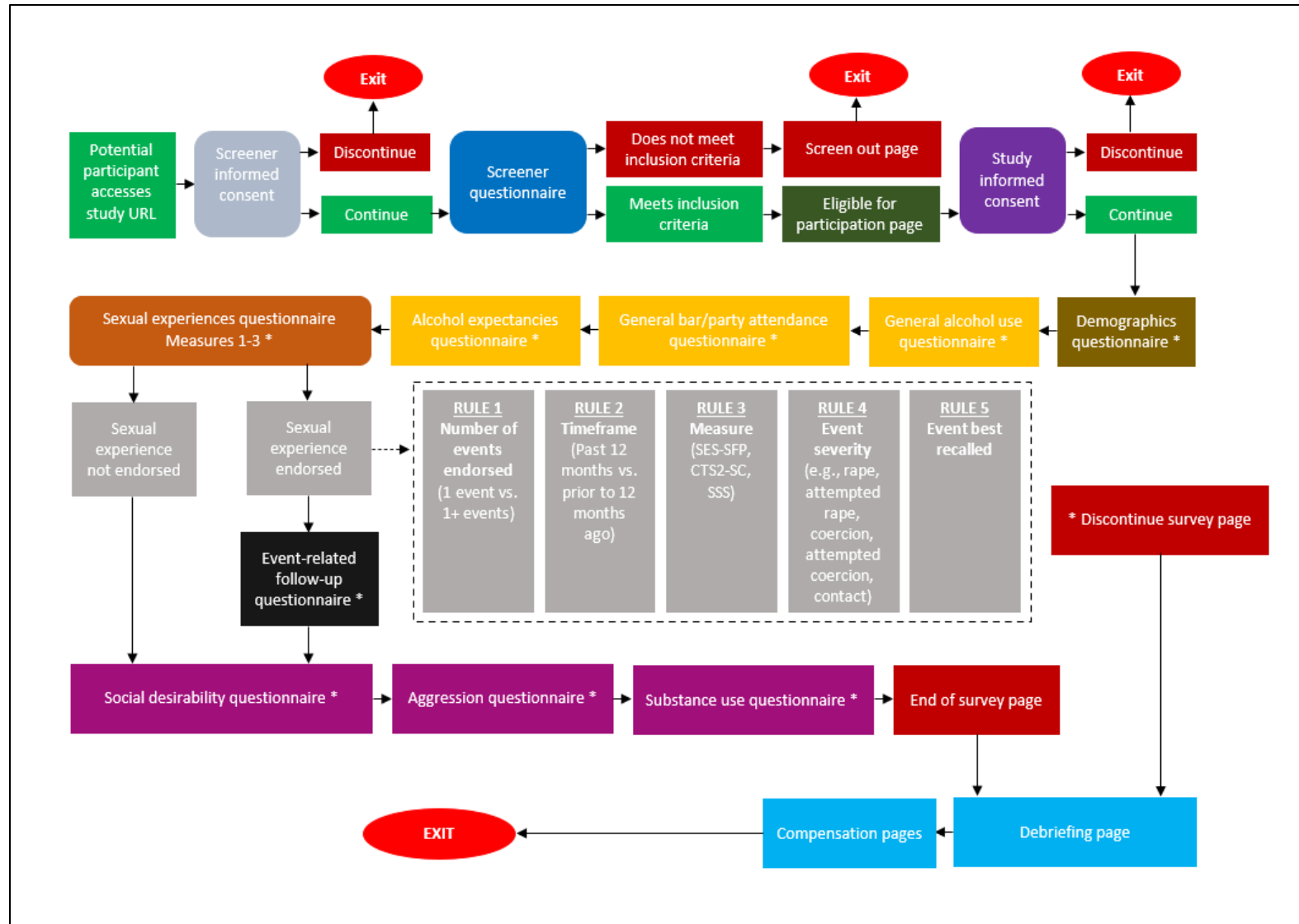


Figure 3

Frequency percentages of proximal alcohol use by perpetrators

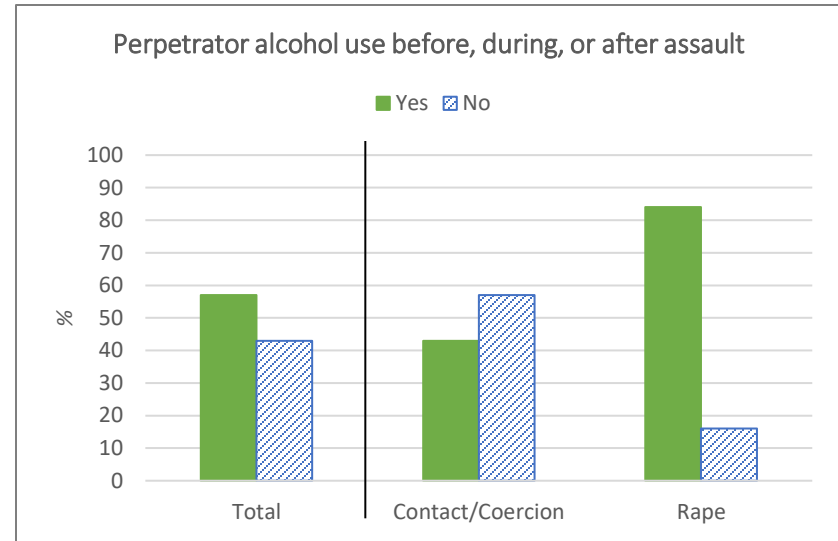
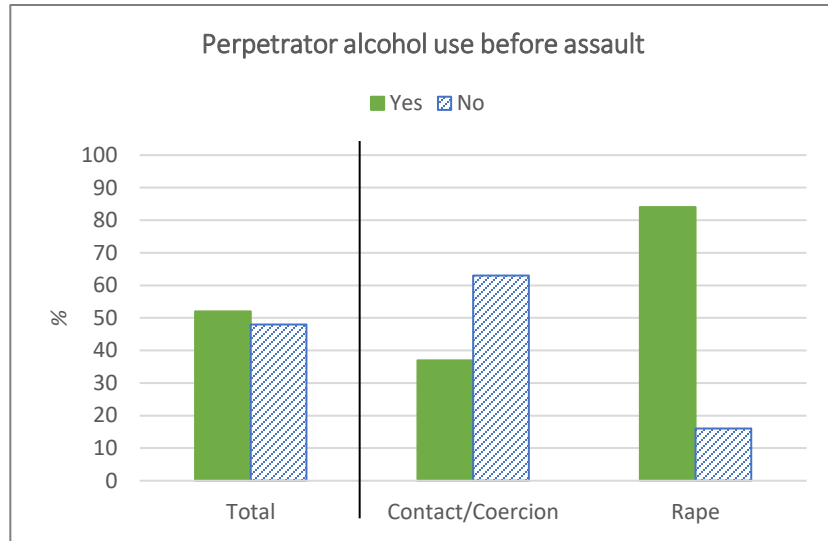


Figure 4

Frequency percentages of proximal alcohol use by victims

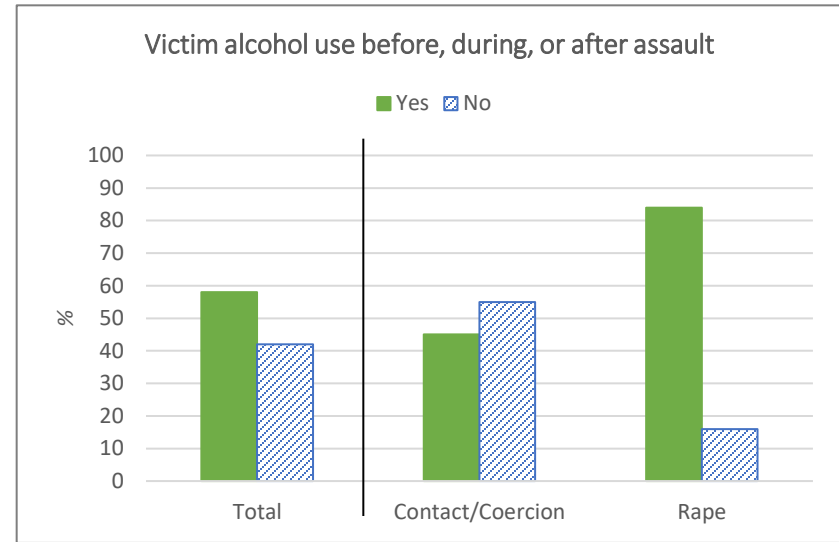
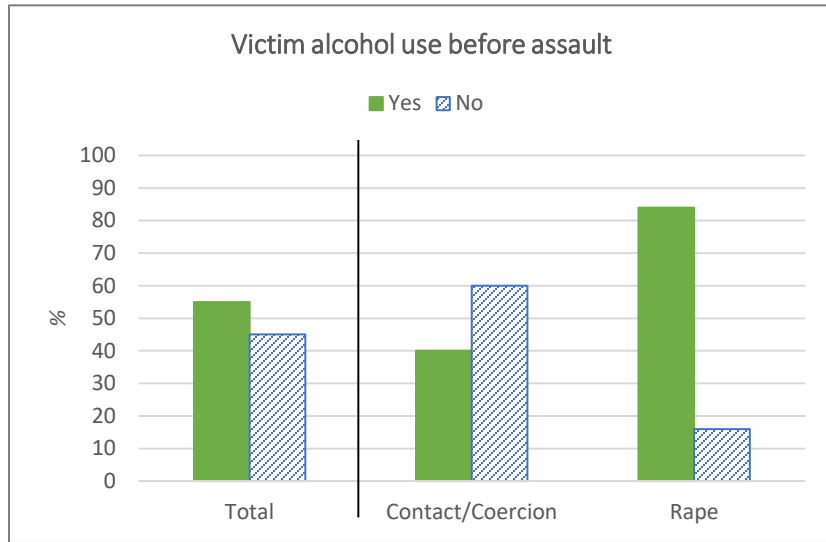


Figure 5

Frequency percentages of proximal alcohol use by perpetrators and victims

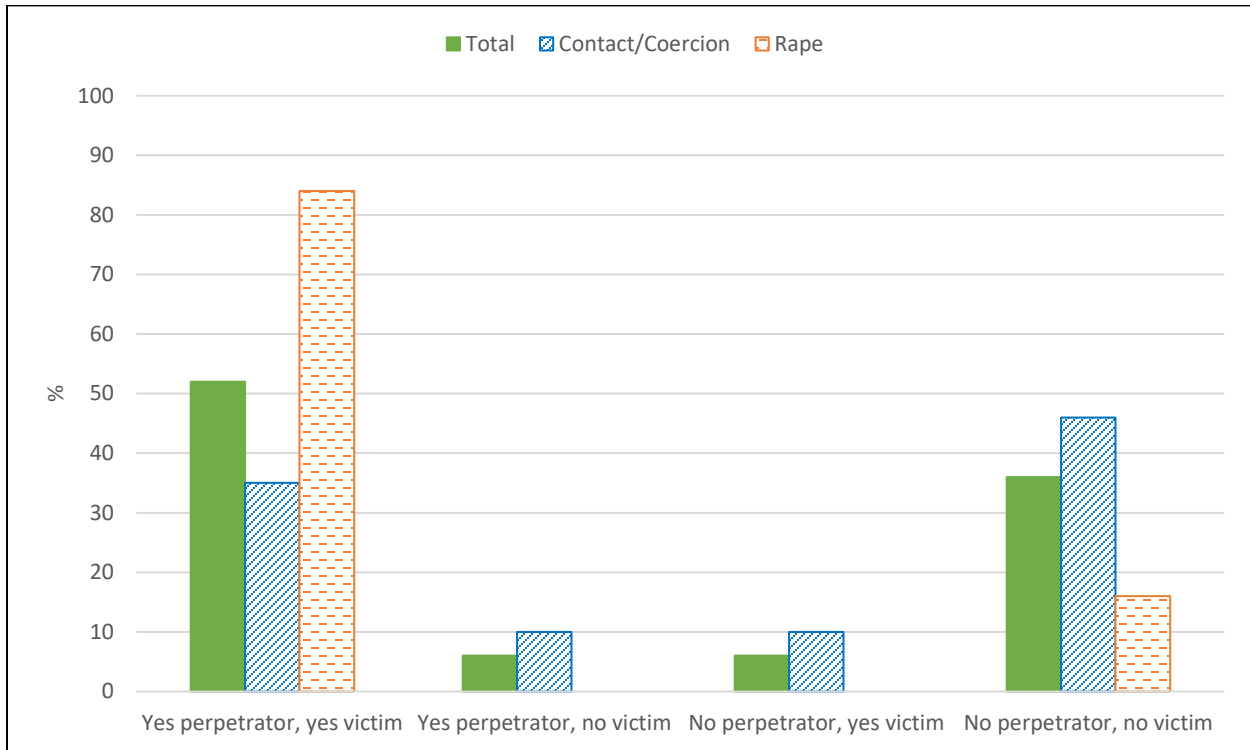


Figure 6
Frequency percentages of proximal bar/party attendance

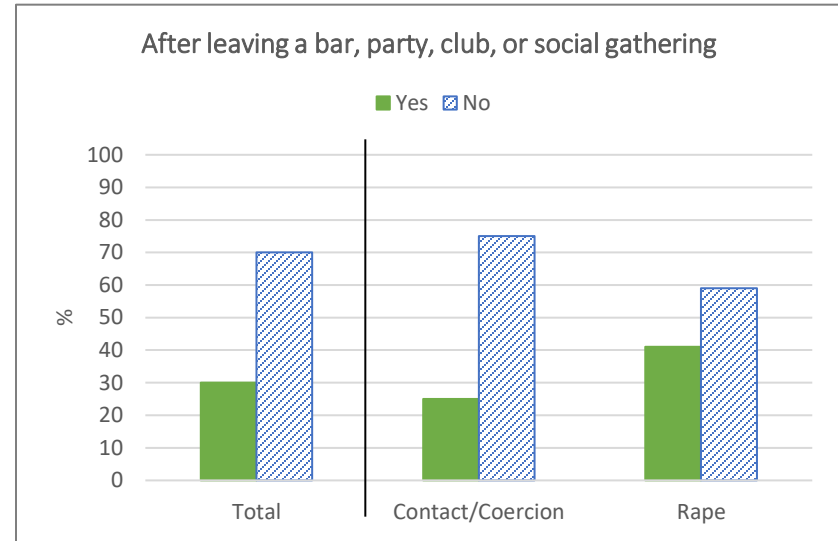
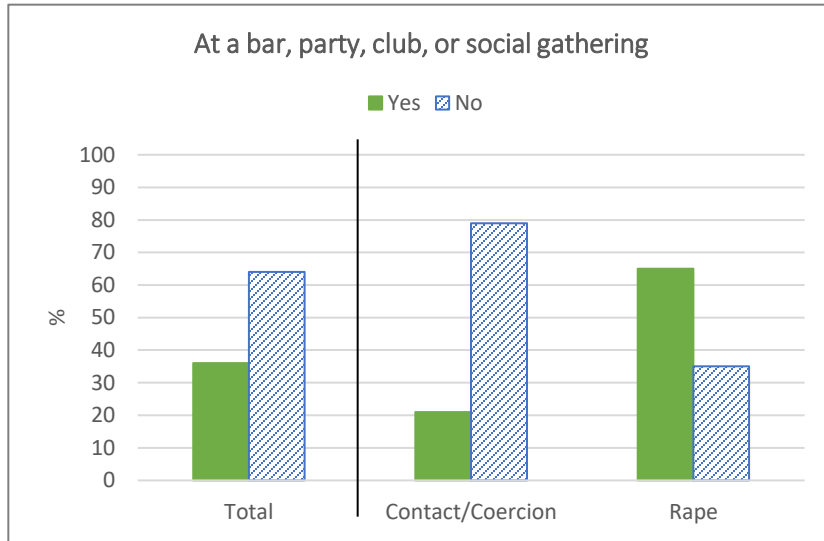


Table 1
Demographic characteristics

| Characteristic | Non-perpetrator | | Contact/Coercion | | Rape | | Full sample | |
|---------------------------------------|-----------------|----------|------------------|----------|----------|----------|-------------|----------|
| | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % |
| Age | 38 | 22.3 (M) | 77 | 22.8 (M) | 37 | 23.1 (M) | 152 | 22.7 (M) |
| Gender | | | | | | | | |
| Male | 37 | 97.4 | 76 | 98.7 | 37 | 100.0 | 150 | 98.7 |
| Transgender male | 1 | 2.6 | 1 | 1.3 | 0 | 0 | 2 | 1.3 |
| Race | | | | | | | | |
| Asian or Asian-American | 4 | 10.5 | 7 | 9.1 | 5 | 13.5 | 16 | 10.5 |
| Black or African American | 2 | 5.3 | 14 | 18.2 | 9 | 24.3 | 25 | 16.4 |
| White or Caucasian | 29 | 76.3 | 52 | 67.5 | 22 | 59.5 | 103 | 67.8 |
| Other | 2 | 5.3 | 4 | 5.2 | 2 | 5.4 | 8 | 5.4 |
| Hispanic or Latino | 3 | 7.9 | 6 | 7.8 | 0 | 0 | 9 | 5.9 |
| Sexual orientation | | | | | | | | |
| Bisexual | 2 | 5.3 | 10 | 13.0 | 3 | 8.1 | 15 | 9.9 |
| Heterosexual | 25 | 65.8 | 59 | 76.6 | 33 | 89.2 | 117 | 77.0 |
| Homosexual | 9 | 23.7 | 7 | 9.1 | 0 | 0 | 16 | 10.5 |
| Other | 0 | 0 | 1 | 1.3 | 0 | 0 | 1 | 0.7 |
| Prefer not to answer | 2 | 5.3 | 0 | 0 | 1 | 2.7 | 3 | 2.0 |
| Year in School | | | | | | | | |
| Freshman/first year | 9 | 23.7 | 9 | 11.7 | 6 | 16.2 | 24 | 15.8 |
| Sophomore/second year | 9 | 23.7 | 16 | 20.8 | 15 | 40.5 | 40 | 26.3 |
| Junior/third year | 9 | 23.7 | 29 | 37.7 | 8 | 21.6 | 46 | 30.3 |
| Senior/fourth year | 7 | 18.4 | 21 | 27.3 | 8 | 21.6 | 36 | 23.7 |
| Other | 4 | 10.5 | 2 | 2.6 | 0 | 0 | 6 | 3.9 |
| Organization membership | | | | | | | | |
| Greek organization (i.e., fraternity) | 3 | 7.9 | 8 | 10.4 | 3 | 8.1 | 14 | 9.2 |
| All-male organized sports team | 2 | 5.3 | 5 | 6.5 | 16 | 43.2 | 23 | 15.1 |
| Other all-male group | 0 | 0 | 3 | 3.9 | 2 | 5.4 | 5 | 3.3 |
| Marital status | | | | | | | | |
| Never married | 29 | 76.3 | 62 | 80.5 | 35 | 94.6 | 126 | 82.9 |

| | | | | | | | | |
|--|----|------|----|------|----|------|----|------|
| Not married but living with partner | 4 | 10.5 | 10 | 13.0 | 1 | 2.7 | 15 | 9.9 |
| Engaged | 0 | 0 | 1 | 1.3 | 0 | 0 | 1 | 0.7 |
| Married | 5 | 13.2 | 3 | 3.9 | 1 | 2.7 | 9 | 5.9 |
| Divorced | 0 | 0 | 1 | 1.3 | 0 | 0 | 1 | 0.7 |
| <hr/> | | | | | | | | |
| Dating status | | | | | | | | |
| Not dating at all | 10 | 26.3 | 15 | 19.5 | 5 | 13.5 | 30 | 19.7 |
| Dating casually or hooking up | 10 | 26.3 | 34 | 44.2 | 20 | 54.1 | 64 | 42.1 |
| In a long-term monogamous relationship | 12 | 31.6 | 24 | 31.2 | 11 | 29.7 | 47 | 30.9 |
| <hr/> | | | | | | | | |
| Current Housing | | | | | | | | |
| University housing | 4 | 10.5 | 7 | 9.1 | 0 | 0 | 11 | 7.2 |
| Off campus alone | 3 | 7.9 | 16 | 20.8 | 3 | 8.1 | 22 | 14.5 |
| Off campus with friends | 5 | 13.2 | 26 | 33.8 | 20 | 54.1 | 51 | 33.6 |
| Off campus with partner/spouse | 10 | 26.3 | 13 | 16.9 | 2 | 5.4 | 25 | 16.4 |
| With Parents | 15 | 39.5 | 13 | 16.9 | 12 | 32.4 | 40 | 26.3 |
| Other | 0 | 0 | 2 | 2.6 | 0 | 0 | 2 | 1.3 |

Table 2*Frequencies of reference events for follow-up questions*

| | Time of event | Measure event reported on | Severity level of event | Frequency (n) |
|-------------------------------------|------------------------|---------------------------|---------------------------|---------------|
| Rape perpetration group | Past 12 months | SES-SFP | Rape | 14 |
| | | | Attempted rape | 12 |
| | | CTS2-SC | Use of force | 2 |
| | Prior to 12 months ago | SES-SFP | Intoxication | 4 |
| | | | Rape | 2 |
| | | Attempted rape | 1 | |
| Contact/coercion perpetration group | Past 12 months | SES-SFP | Intoxication | 2 |
| | | | Coercion | 7 |
| | | | Attempted coercion | 6 |
| | | CTS2-SC | Sexual contact | 8 |
| | | | Verbal coercion | 24 |
| | | | Verbal coercion | 4 |
| | Prior to 12 months ago | SES-SFP | Enticement | 7 |
| | | | Verbal coercion | 1 |
| | | | Attempted verbal coercion | 3 |
| | | CTS2-SC | Sexual contact | 3 |
| | | | Verbal coercion | 2 |
| | | | Older age/authority | 1 |
| Prior to 12 months ago | SSS | Verbal coercion | 6 | |
| | | Enticement | 5 | |

SES-SFP = Sexual Experiences Survey-Short Form Perpetration; CTS2-SC = revised Conflict Tactics Scales-Sexual Coercion subscale; SSS = Sexual Strategies Scale

Table 3
Regression coefficients for individual distal factors

| | <i>B</i> | <i>Wald</i> | <i>df</i> | <i>p</i> | Odds Ratio |
|---------------------------------|----------|-------------|-----------|----------|------------|
| General frequent alcohol use | | | | | |
| Contact/coercion perpetration | .357 | 11.637 | 1 | < .01 | 1.429 |
| Rape perpetration | .546 | 16.904 | 1 | < .001 | 1.727 |
| General heavy episodic drinking | | | | | |
| Contact/coercion perpetration | .507 | 6.532 | 1 | < .05 | 1.660 |
| Rape perpetration | .771 | 11.712 | 1 | < .01 | 2.162 |
| General bar/party attendance | | | | | |
| Contact/coercion perpetration | .169 | 9.223 | 1 | < .01 | 1.184 |
| Rape perpetration | .349 | 27.157 | 1 | < .001 | 1.417 |
| Sexual enhancement AE | | | | | |
| Contact/coercion perpetration | .245 | 16.525 | 1 | < .001 | 1.278 |
| Rape perpetration | .548 | 31.738 | 1 | < .001 | 1.730 |
| Social facilitation AE | | | | | |
| Contact/coercion perpetration | .017 | 0.176 | 1 | .675 | 1.017 |
| Rape perpetration | .243 | 14.335 | 1 | < .001 | 1.275 |

AE = Alcohol expectancies

Table 4*Regression coefficients for stepwise distal factors model*

| | <i>B</i> | <i>Wald</i> | <i>df</i> | <i>p</i> | Odds Ratio |
|-------------------------------|----------|-------------|-----------|----------|------------|
| Contact/coercion perpetration | | | | | |
| Sexual enhancement AE | .267 | 13.765 | 1 | < .001 | 1.306 |
| General bar/party attendance | .104 | 2.081 | 1 | .149 | 1.110 |
| Social facilitation AE | -.120 | 3.934 | 1 | < .05 | .887 |
| Rape perpetration | | | | | |
| Sexual enhancement AE | .357 | 11.614 | 1 | < .001 | 1.430 |
| General bar/party attendance | .250 | 9.069 | 1 | < .01 | 1.284 |
| Social facilitation AE | .058 | .453 | 1 | .501 | 1.059 |

AE = Alcohol Expectancies

Table 5*Chi-square goodness-of-fit results for proximal factors*

| Variable | Observed <i>N</i> (% of Group) | | χ^2 | <i>df</i> | <i>p</i> |
|---|--------------------------------|----------|----------|-----------|----------|
| | Yes | No | | | |
| Perpetrator alcohol use before | 59 (52%) | 54 (48%) | 0.221 | 1 | .638 |
| Perpetrator alcohol use before, during, or after | 64 (57%) | 49 (43%) | 1.991 | 1 | .158 |
| Victim alcohol use before | 61 (55%) | 50 (45%) | 1.090 | 1 | .296 |
| Victim alcohol use before, during, or after | 64 (58%) | 47 (42%) | 2.604 | 1 | .107 |
| At a bar, party, club, or social gathering | 40 (36%) | 72 (64%) | 9.143 | 1 | < .01 |
| After leaving a bar, party, club, or social gathering | 34 (30%) | 79 (70%) | 17.920 | 1 | < .001 |

Table 6*Chi-square results for proximal factors across perpetrator groups*

| Variable | Observed <i>N</i> (% of Group) | | χ^2 | <i>df</i> | <i>p</i> |
|---|--------------------------------|----------|----------|-----------|----------|
| | Yes | No | | | |
| Perpetrator alcohol use before | | | 21.977 | 1 | < .001 |
| Contact/coercion perpetration | 28 (37%) | 48 (63%) | | | |
| Rape perpetration | 31 (84%) | 6 (16%) | | | |
| Perpetrator alcohol use before, during, or after | | | 16.507 | 1 | < .001 |
| Contact/coercion perpetration | 33 (43%) | 43 (57%) | | | |
| Rape perpetration | 31 (84%) | 6 (16%) | | | |
| Victim alcohol use before | | | 18.633 | 1 | < .001 |
| Contact/coercion perpetration | 30 (40%) | 44 (60%) | | | |
| Rape perpetration | 31 (84%) | 6 (16%) | | | |
| Victim alcohol use before, during, or after | | | 15.517 | 1 | < .001 |
| Contact/coercion perpetration | 33 (45%) | 41 (55%) | | | |
| Rape perpetration | 31 (84%) | 6 (16%) | | | |
| At a bar, party, club, or social gathering | | | 20.450 | 1 | < .001 |
| Contact/coercion perpetration | 16 (21%) | 59 (79%) | | | |
| Rape perpetration | 24 (65%) | 13 (35%) | | | |
| After leaving a bar, party, club, or social gathering | | | 2.857 | 1 | .091 |
| Contact/coercion perpetration | 19 (25%) | 57 (75%) | | | |
| Rape perpetration | 15 (41%) | 22 (59%) | | | |

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Appendix A:
 Screener Questionnaire

1. What is your age? (Please fill in the blank) _____

2. With which gender identity do you most identify?
 - Female
 - Male
 - Transgender female
 - Transgender male
 - Gender variant/non-conforming
 - Other (please specify) _____
 - Prefer not to answer

3. What is your current year in school?
 - Freshman/first year
 - Sophomore/second year
 - Junior/third year
 - Senior/Fourth year
 - Other (please specify) _____
 - Prefer not to answer

4. Did you participate in this study before?
 - No
 - Yes

Appendix B:
Demographics Questionnaire

First, we would like to ask a few general background questions.

1. What is the race that best describes you? (Select all that apply)
 - American Indian or Alaska Native
 - Asian or Asian-American
 - Black or African-American
 - Native Hawaiian or Pacific Islander
 - White or Caucasian
 - Other (Please specify) _____
 - Prefer not to answer

2. Are you Hispanic or Latino?
 - Yes
 - No
 - Prefer not to answer

3. What is your sexual orientation?
 - Bisexual
 - Heterosexual
 - Homosexual
 - Other (please specify) _____
 - Prefer not to answer

4. What is your major? (Please specify) _____
 - Prefer not to answer

5. Are you a member of any of the following groups? (Select all that apply)
 - Greek organization (i.e., fraternity)
 - All-male organized sports team
 - Other all-male group (Please specify) _____
 - Prefer not to answer

6. Approximately, what is your annual household income?
 - Under \$10,000
 - \$10,000 - \$20,000
 - \$21,000 - \$30,000
 - \$31,000 - \$40,000
 - \$41,000 - \$50,000
 - \$51,000 - \$75,000
 - \$76,000 - \$100,000
 - Over \$100,000

- Prefer not to answer

7. Where do you currently live?

- University housing (e.g., Sandburg Hall, Cambridge Commons, RiverView, Kenilworth, Putin Hall)
- Off campus apartment/house - alone
- Off campus apartment/house - with friends
- Off campus apartment/house - with partner/spouse
- With parents
- Other (Please specify) _____
- Prefer not to answer

8. What is your current marital status?

- Never married
- Not married but living with a partner
- Engaged
- Married
- Separated
- Divorced
- Widowed
- Other (Please specify) _____
- Prefer not to answer

[If B, C, or D selected for Question 8]

8a. What is the gender of your partner/spouse?

- Female
- Male
- Other (Please specify) _____
- Prefer not to answer

[If A, B, E, F, G, or H selected for Question 8]

8b. What is your current dating status?

- Not dating at all
- Dating casually or hooking-up
- In a long-term monogamous relationship (more than 6 months)
- Other (Please specify) _____
- Prefer not to answer

[If B or C selected for Question 8b]

8c. What is the gender of your partner(s)? *[Allow selection of both Female, Male, and Other options]*

- Female
- Male
- Other (Please specify) _____
- Prefer not to answer

9. How old were you the first time you had consensual (not forced) ORAL sex?

- 13 years-old or younger
- 14
- 15
- 16
- 17
- 18
- 19 years-old or older
- I have never had oral sex
- I have only had nonconsensual (forced) oral sex
- Prefer not to answer

10. How old were you the first time you had consensual (not forced) VAGINAL sex?

- 13 years-old or younger
- 14
- 15
- 16
- 17
- 18
- 19 years-old or older
- I have never had vaginal sex
- I have only had nonconsensual (forced) vaginal sex
- Prefer not to answer

11. How old were you the first time you had consensual (not forced) ANAL sex?

- 13 years-old or younger
- 14
- 15
- 16
- 17
- 18
- 19 years-old or older
- I have never had anal sex
- I have only had nonconsensual (forced) anal sex
- Prefer not to answer

12. How many consensual (not forced) sex partners have you had in your *lifetime*?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

- 9
- 10
- 11 or more
- Prefer not to answer

13. How many consensual (not forced) sex partners have you had in the past year?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11 or more
- Prefer not to answer

14. Approximately, how often do you read, listen to, or watch sexually explicit material (i.e., pornographic material)?

- 5-10 times per year
- 1-2 times per month
- 3-4 times per month
- 1-2 times per week
- 3-4 times per week
- Almost daily
- Never
- Prefer not to answer

Appendix C:

General Alcohol Use Questionnaire

Now, we would like to ask some questions about your use of alcohol (for example, beer, wine, liquor, spirits, etc.):

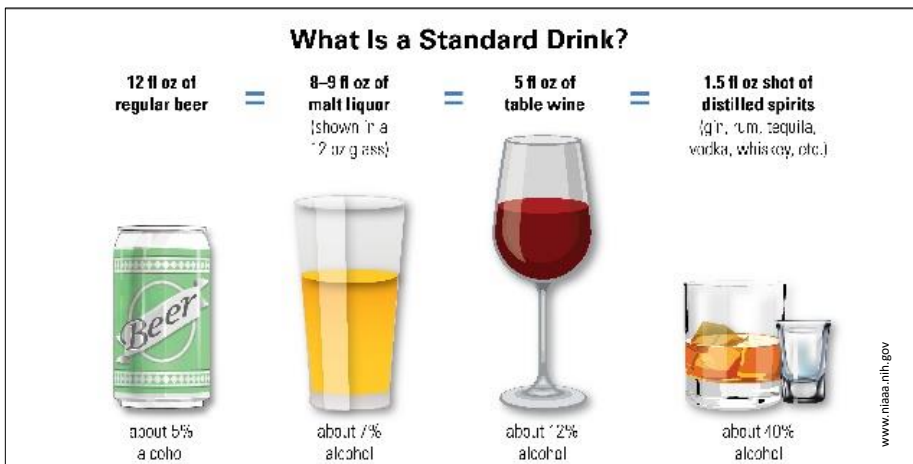
1. During the past 12 months, how often did you have a drink containing alcohol?

- Daily or almost daily
- 3-6 times a week
- Twice a week
- Once a week
- 2-3 times a month
- About once a month
- Several times, but less than once a month
- Never
- Prefer not to answer

[If option "Never" is selected, discontinue the General Alcohol Use Questionnaire and proceed with the General Bar/Party Attendance Questionnaire below.]

2. During the past 12 months, how many standard drinks containing alcohol did you have on a typical day when you were drinking? Refer to the figure below for standard drink information.

- 1 or 2
- 3 or 4
- 5 or 6
- 7 to 9
- 10 or more
- Prefer not to answer



3. During the past 12 months, how often did you have six or more standard drinks on one occasion?
- Never
 - Less than monthly
 - Monthly
 - Weekly
 - Daily or almost daily
 - Prefer not to answer
4. In the past 30 days, how often did you drink enough to get drunk (for example, feeling unsteady, dizzy, or sick to the stomach)?
- Not at all
 - 1-2 occasions
 - 3-5 occasions
 - 6-9 occasions
 - 10-19 occasions
 - 20-39 occasions
 - 40 or more occasions
 - Prefer not to answer

Following is a list of common results of alcohol use that college students often report. Please indicate how often you have experienced these results during the past 12 months.

| During the past 12 months, I have... | Never | Several times, but less than monthly | About once a month | 2-3 times a month | 1-2 times a week | Daily or almost daily | Prefer not to answer |
|--|-----------------------|---|---------------------------|--------------------------|-------------------------|------------------------------|-----------------------------|
| had a hangover. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| gotten nauseated and vomited from drinking. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| driven a car after having several drinks. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| driven a car when I knew I had too much to drink. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| driven a car while drinking. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| come to class after having several drinks. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| “cut a class” after having several drinks. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| missed a class because of a hangover. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| been arrested for DWI (Driving While Intoxicated). | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| been criticized by someone I was dating because of my drinking. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| had trouble with the law because of drinking. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| lost a job because of drinking. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| received a lower grade because of drinking. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| gotten in trouble with school administration because of behavior resulting from drinking too much. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| gotten into a fight after drinking. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| thought I might have an alcohol problem. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| damaged property, pulled a false alarm, or other such behavior after drinking. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| participated in a drinking game. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Appendix D:

General Bar/Party Attendance Questionnaire

Now, we would like to ask a few questions about your attendance at bars, parties, etc.

1. During the past 12 months, how often did you attend a party?
 - Daily or almost daily
 - 3-6 times a week
 - Twice a week
 - Once a week
 - 2-3 times a month
 - About once a month
 - Several times, but less than once a month
 - Never
 - Prefer not to answer

2. During the past 12 months, how often did you go to a bar?
 - Daily or almost daily
 - 3-6 times a week
 - Twice a week
 - Once a week
 - 2-3 times a month
 - About once a month
 - Several times, but less than once a month
 - Never
 - Prefer not to answer

3. During the past 12 months, how often did you go to a club?
 - Daily or almost daily
 - 3-6 times a week
 - Twice a week
 - Once a week
 - 2-3 times a month
 - About once a month
 - Several times, but less than once a month
 - Never
 - Prefer not to answer

4. During the past 12 months, how often did you attend a large social gathering?
 - Daily or almost daily
 - 3-6 times a week
 - Twice a week
 - Once a week
 - 2-3 times a month
 - About once a month

- Several times, but less than once a month
- Never
- Prefer not to answer

Appendix E:

Alcohol Expectancies Questionnaire

Here is a list of some effects or consequences that some people experience after drinking alcohol. How likely is it that these things happen to **you** when you drink alcohol? Please select the option that best describes how drinking alcohol would affect you.

If you do not drink at all, just answer according to what you think would happen to you if you **did** drink.

| When I drink alcohol... | How likely is it that this would happen? | | | | | | |
|--|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | No chance | Very unlikely | Unlikely | Likely | Very likely | Certain to happen | Prefer not to answer |
| I am more accepted socially. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I become aggressive. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am less alert. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel ashamed of myself. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I enjoy the buzz. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I become clumsy or uncoordinated. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel good. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I get into fights. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can't concentrate. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have a good time. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have problems driving. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel guilty. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I get a hangover. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel happy. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I get a headache. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am more sexually assertive. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It is fun. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I get mean. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have problems with memory and concentration. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am more outgoing. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It takes away my negative moods and feelings. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have more desire for sex. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It is easier for me to socialize. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel pleasant physical effects. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am more sexually responsive. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel more sociable. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel sad or depressed. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am able to talk more freely. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I become more sexually active. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel sick. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel less stressed. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am friendlier. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I experience unpleasant physical effects. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am able to take my mind off my problems. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Appendix F:

Sexual Experiences Questionnaires

The following questions concern sexual experiences. We know that these are personal questions, so as a reminder, your name and other identifying information will not be connected to your responses. Your information is completely confidential. We hope this helps you to feel comfortable answering these questions honestly.

[Beginning of Measure 1: SES-SFP]

Please indicate the number of times each of the following experiences has happened.

If several experiences occurred on the same occasion, please select ALL of the experiences that apply. For example, if one night you told some lies and had sex with someone who was drunk, you would select both boxes a and c. The past 12 months refers to the past year going back from today. Since age 14 refers to your life starting on your 14th birthday and stopping one year ago today.

Note: Please respond to all of these questions even though you might have already responded to similar questions earlier in this survey. **As a reminder, your name and other identifying information will not be connected to your responses. Your information is completely confidential.**

| | | How many times in the past 12 months? | | | | | How many times since age 14? | | | | |
|----|---|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0 | 1 | 2 | 3+ | Prefer not to answer | 0 | 1 | 2 | 3+ | Prefer not to answer |
| 1. | I fondled, kissed, or rubbed up against the private areas of someone’s body (lips, breast, crotch, or butt) or removed some of their clothes without their consent (<i>but did not attempt sexual penetration</i>) by: | | | | | | | | | | |
| a. | Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn’t want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. | Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force, after they said they didn’t want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. | Taking advantage when they were too drunk or out of it to stop what was happening. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. | Threatening to physically harm them or someone close to them. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e. | Using force, for example holding them down with my body weight, pinning their arms, or having a weapon. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | How many times in the past 12 months? | | | | | How many times since age 14? | | | | |
|----|--|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0 | 1 | 2 | 3+ | Prefer not to answer | 0 | 1 | 2 | 3+ | Prefer not to answer |
| 2. | I had oral sex with someone or had someone perform oral sex on me without their consent by: | | | | | | | | | | |
| | a. Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | b. Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force, after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | c. Taking advantage when they were too drunk or out of it to stop what was happening. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | d. Threatening to physically harm them or someone close to them. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | e. Using force, for example holding them down with my body weight, pinning their arms, or having a weapon. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | How many times in the past 12 months? | | | | | How many times since age 14? | | | | |
|----|--|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0 | 1 | 2 | 3+ | Prefer not to answer | 0 | 1 | 2 | 3+ | Prefer not to answer |
| 3. | I put my penis or I put my finger(s) or object(s) into a woman's vagina without her consent by: | | | | | | | | | | |
| | a. Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | b. Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force, after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | c. Taking advantage when they were too drunk or out of it to stop what was happening. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | d. Threatening to physically harm them or someone close to them. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | e. Using force, for example holding them down with my body weight, pinning their arms, or having a weapon. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | How many times in the past 12 months? | | | | | How many times since age 14? | | | | |
|----|--|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0 | 1 | 2 | 3+ | Prefer not to answer | 0 | 1 | 2 | 3+ | Prefer not to answer |
| 4. | I put my penis or I put my finger(s) or object(s) into someone's butt without their consent by: | | | | | | | | | | |
| | a. Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | b. Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force, after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | c. Taking advantage when they were too drunk or out of it to stop what was happening. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | d. Threatening to physically harm them or someone close to them. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | e. Using force, for example holding them down with my body weight, pinning their arms, or having a weapon. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | How many times in the past 12 months? | | | | | How many times since age 14? | | | | |
|----|--|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0 | 1 | 2 | 3+ | Prefer not to answer | 0 | 1 | 2 | 3+ | Prefer not to answer |
| 5. | Even though it did not happen, I TRIED to have oral sex with someone or make them have oral sex with me without their consent by: | | | | | | | | | | |
| | a. Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | b. Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force, after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | c. Taking advantage when they were too drunk or out of it to stop what was happening. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | d. Threatening to physically harm them or someone close to them. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| | e. Using force, for example holding them down with my body weight, pinning their arms, or having a weapon. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | How many times in the past 12 months? | | | | | How many times since age 14? | | | | |
|----|---|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0 | 1 | 2 | 3+ | Prefer not to answer | 0 | 1 | 2 | 3+ | Prefer not to answer |
| 6. | Even though it did not happen, I TRIED to put my penis or I tried to put my finger(s) or object(s) into a woman's vagina without their consent by: | | | | | | | | | | |
| a. | Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. | Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force, after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. | Taking advantage when they were too drunk or out of it to stop what was happening. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. | Threatening to physically harm them or someone close to them. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e. | Using force, for example holding them down with my body weight, pinning their arms, or having a weapon. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | How many times in the past 12 months? | | | | | How many times since age 14? | | | | |
|----|---|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | | 0 | 1 | 2 | 3+ | Prefer not to answer | 0 | 1 | 2 | 3+ | Prefer not to answer |
| 7. | Even though it did not happen, I TRIED to put my penis or I tried to put my finger(s) or object(s) into someone's butt without their consent by: | | | | | | | | | | |
| a. | Telling lies, threatening to end the relationship, threatening to spread rumors about them, making promises about the future I knew were untrue, or continually verbally pressuring them after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. | Showing displeasure, criticizing their sexuality or attractiveness, getting angry but not using physical force, after they said they didn't want to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. | Taking advantage when they were too drunk or out of it to stop what was happening. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. | Threatening to physically harm them or someone close to them. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e. | Using force, for example holding them down with my body weight, pinning their arms, or having a weapon. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

8. Do you think you may have ever raped someone?
- Yes
 - No
 - Prefer not to answer

[End of Measure 1: SES-SFP]

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 10. I insisted on sex when my partner did not want to (but did not use physical force). | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11. I slapped my partner. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12. I used threats to make my partner have oral or anal sex. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13. I burned or scalded my partner on purpose. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14. I insisted my partner have oral or anal sex (but did not use physical force). | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. I accused my partner of being a lousy lover. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16. I used threats to make my partner have sex. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17. I agreed to try a solution to a disagreement my partner suggested. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18. I forced my partner to have sex without a condom. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

[End of Measure 2: CTS2-SC]

| | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 13. Taking off <u>your</u> clothes in the hopes that she will give in to sex. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14. Using physical restraint. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15. Threatening to break up with her if she doesn't have sex. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 16. Questioning her sexuality (e.g., calling her a lesbian). | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 17. Using your authority to convince her (e.g., if you were her boss, her supervisor, her camp counselor, etc.). | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 18. Harming her physically. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 19. Tying her up. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 20. Questioning her commitment to the relationship (e.g., saying "if you loved me, you would"). | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 21. Accusing her of "leading you on" or being "a tease." | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 22. Slipping her drugs (e.g., GHB or "Roofies") so that you can take advantage of her. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Appendix G:

Event-Related Follow-Up Questionnaire

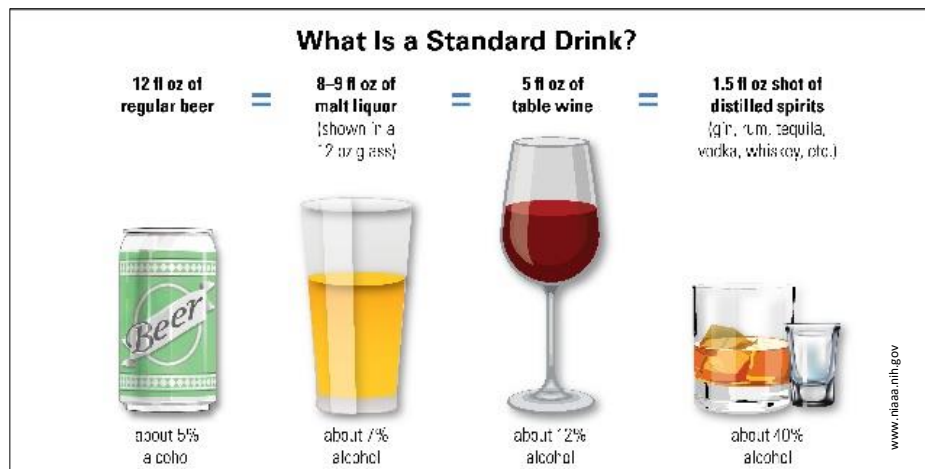
[Present text prompt]

1. Did you consume alcohol immediately before this experience?
 - Yes
 - No
 - Prefer not to answer
2. Did you consume alcohol during this experience?
 - Yes
 - No
 - Prefer not to answer
3. Did you consume alcohol immediately after this experience?
 - Yes
 - No
 - Prefer not to answer

[If response option "Yes" selected for any of the questions 1-3]

3a. How many standard drinks containing alcohol did you consume? Refer to the figure below for standard drink information.

- 1 or 2
- 3 or 4
- 5 or 6
- 7 to 9
- 10 or more
- Prefer not to answer



- 3b. Do you believe you were intoxicated/drunk at the time of this experience?
- Yes
 - No
 - Maybe
 - Prefer not to answer
4. What was the gender of the person to whom this experience was done to?
- Female
 - Male
 - Other (Please specify) _____
 - Prefer not to answer
5. What was your relationship to the person to whom this experience was done to?
- Dating partner (even if first date)
 - Long-term partner
 - Spouse
 - Family member (besides spouse)
 - Family friend
 - Neighbor
 - Non-romantic friend
 - Fellow student
 - Casual acquaintance
 - Stranger
 - Other (Please specify) _____
 - Prefer not to answer
6. Did the individual whom this experience was done to consume alcohol immediately before the experience?
- Yes
 - No
 - Prefer not to answer
7. Did the individual whom this experience was done to consume alcohol during the experience?
- Yes
 - No
 - Prefer not to answer
8. Did the individual whom this experience was done to consume alcohol immediately after the experience?
- Yes
 - No
 - Prefer not to answer
9. Do you believe the individual whom this experience was done to was intoxicated/drunk at the time of the experience?

- Yes
- No
- Maybe
- Prefer not to answer

[If response option “Yes” selected *for any of the questions 6-9, or response option “Maybe” selected for question 9*]

9a. Did you serve alcohol to the individual whom this experience was done to with the intent to incapacitate them?

- Yes
- No
- Prefer not to answer

9b. Did you serve alcohol to the individual whom this experience was done to without the intent to incapacitate them?

- Yes
- No
- Prefer not to answer

9c. Did you take advantage of the self-entered state of intoxication of the individual whom this experience was done to?

- Yes
- No
- Prefer not to answer

10. Did this experience occur at a party?

- Yes
- No
- Prefer not to answer

11. Did this experience occur at a bar?

- Yes
- No
- Prefer not to answer

12. Did this experience occur at a club?

- Yes
- No
- Prefer not to answer

13. Did this experience occur at a large social gathering?

- Yes
- No
- Prefer not to answer

14. Did this experience occur close in time after leaving a party together with the individual the experience was done to?

- Yes
- No
- Prefer not to answer

15. Did this experience occur close in time after leaving a bar together with the individual the experience was done to?

- Yes
- No
- Prefer not to answer

16. Did this experience occur close in time after leaving a club together with the individual the experience was done to?

- Yes
- No
- Prefer not to answer

17. Did this experience occur close in time after leaving a large social gathering together with the individual the experience was done to?

- Yes
- No
- Prefer not to answer

Appendix H:

Social Desirability Questionnaire

Listed below are a number of statements concerning personal attitudes and traits. Please read each item and select “True” if the statement is true for you or select “False” if the statement is false for you.

| | True | False | Prefer not to answer |
|--|------|-------|----------------------------|
| 1. Before voting I thoroughly investigate the qualifications of all the candidates. | ○ | ○ | ○ |
| 2. I never hesitate to go out of my way to help someone in trouble. | ○ | ○ | ○ |
| 3. It is sometimes hard for me to go on with my work if I am not encouraged. | ○ | ○ | ○ |
| 4. I have never intensely disliked anyone. | ○ | ○ | ○ |
| 5. On occasions I have had doubts about my ability to succeed in life. | ○ | ○ | ○ |
| 6. I sometimes feel resentful when I don't get my way. | ○ | ○ | ○ |
| 7. I am always careful about my manner of dress. | ○ | ○ | ○ |
| 8. My table manners at home are as good as when I eat out in a restaurant. | ○ | ○ | ○ |
| 9. If I could get into a movie without paying and be sure I was not seen, I would probably do it. | ○ | ○ | ○ |
| 10. On a few occasions, I have given up something because I thought too little of my ability. | ○ | ○ | ○ |
| 11. I like to gossip at times. | ○ | ○ | ○ |
| 12. There have been times when I felt like rebelling against people in authority even though I knew they were right. | ○ | ○ | ○ |
| 13. No matter who I'm talking to, I'm always a good listener. | ○ | ○ | ○ |
| 14. I can remember “playing sick” to get out of something. | ○ | ○ | ○ |
| 15. There have been occasions when I have taken advantage of someone. | ○ | ○ | ○ |
| 16. I'm always willing to admit it when I make a mistake. | ○ | ○ | ○ |
| 17. I always try to practice what I preach. | ○ | ○ | ○ |
| 18. I don't find it particularly difficult to get along with loudmouthed, obnoxious people. | ○ | ○ | ○ |
| 19. I sometimes try to get even rather than forgive and forget. | ○ | ○ | ○ |
| 20. When I don't know something, I don't mind at all admitting it. | ○ | ○ | ○ |
| 21. I'm always courteous, even to people who are disagreeable. | ○ | ○ | ○ |
| 22. At times, I have really insisted on having things my own way. | ○ | ○ | ○ |
| 23. There have been occasions when I felt like smashing things. | ○ | ○ | ○ |
| 24. I would never think of letting someone else be punished for my wrong doings. | ○ | ○ | ○ |
| 25. I never resent being asked to return a favor. | ○ | ○ | ○ |
| 26. I have never been irked when people expressed ideas very different from my own. | ○ | ○ | ○ |

| | | | |
|---|-----------------------|-----------------------|-----------------------|
| 27. I never make a long trip without checking the safety of my car. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 28. There have been times when I was quite jealous of the good fortune of others. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 29. I have almost never felt the urge to tell someone off. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 30. I'm sometimes irritated by people who ask favors of me. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 31. I have never felt that I was punished without cause. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 32. I sometimes think when people have a misfortune they only got what they deserved. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 33. I have never deliberately said something that hurt someone's feelings. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Appendix I:

Aggression Questionnaire

Using the 5-point scale shown below, please indicate how uncharacteristic or characteristic each of the following statements is in describing you.

| | Extremely uncharacteristic | Somewhat uncharacteristic | Neither uncharacteristic nor characteristic | Somewhat characteristic | Extremely characteristic | Prefer not to answer |
|--|-------------------------------|------------------------------|--|----------------------------|-----------------------------|----------------------------|
| 1. Some of my friends think I am a hothead | 0 | 0 | 0 | 0 | 0 | 0 |
| 2. If I have to resort to violence to protect my rights, I will. | 0 | 0 | 0 | 0 | 0 | 0 |
| 3. When people are especially nice to me, I wonder what they want. | 0 | 0 | 0 | 0 | 0 | 0 |
| 4. I tell my friends openly when I disagree with them. | 0 | 0 | 0 | 0 | 0 | 0 |
| 5. I have become so mad that I have broken things. | 0 | 0 | 0 | 0 | 0 | 0 |
| 6. I can't help getting into arguments when people disagree with me. | 0 | 0 | 0 | 0 | 0 | 0 |
| 7. I wonder why sometimes I feel so bitter about things. | 0 | 0 | 0 | 0 | 0 | 0 |
| 8. Once in a while, I can't control the urge to strike another person. | 0 | 0 | 0 | 0 | 0 | 0 |
| 9. I am an even-tempered person. | 0 | 0 | 0 | 0 | 0 | 0 |
| 10. I am suspicious of overly friendly strangers. | 0 | 0 | 0 | 0 | 0 | 0 |
| 11. I have threatened people I know. | 0 | 0 | 0 | 0 | 0 | 0 |
| 12. I flare up quickly but get over it quickly. | 0 | 0 | 0 | 0 | 0 | 0 |
| 13. Given enough provocation, I may hit another person. | 0 | 0 | 0 | 0 | 0 | 0 |
| 14. When people annoy me, I may tell them what I think of them. | 0 | 0 | 0 | 0 | 0 | 0 |
| 15. I am sometimes eaten up with jealousy. | 0 | 0 | 0 | 0 | 0 | 0 |
| 16. I can think of no good reason for ever hitting a person. | 0 | 0 | 0 | 0 | 0 | 0 |
| 17. At times I feel I have gotten a raw deal out of life. | 0 | 0 | 0 | 0 | 0 | 0 |
| 18. I have trouble controlling my temper. | 0 | 0 | 0 | 0 | 0 | 0 |
| 19. When frustrated, I let my irritation show. | 0 | 0 | 0 | 0 | 0 | 0 |
| 20. I sometimes feel that people are laughing at me behind my back. | 0 | 0 | 0 | 0 | 0 | 0 |
| 21. I often find myself disagreeing with people. | 0 | 0 | 0 | 0 | 0 | 0 |
| 22. If somebody hits me, I hit back. | 0 | 0 | 0 | 0 | 0 | 0 |
| 23. I sometimes feel like a powder keg ready to explode. | 0 | 0 | 0 | 0 | 0 | 0 |
| 24. Other people always seem to get the breaks. | 0 | 0 | 0 | 0 | 0 | 0 |
| 25. There are people who pushed me so far that we came to blows. | 0 | 0 | 0 | 0 | 0 | 0 |
| 26. I know that "friends" talk about me behind my back. | 0 | 0 | 0 | 0 | 0 | 0 |
| 27. My friends say that I'm somewhat argumentative. | 0 | 0 | 0 | 0 | 0 | 0 |
| 28. Sometimes I fly off the handle for no good reason. | 0 | 0 | 0 | 0 | 0 | 0 |
| 29. I get into fights a little more than the average person. | 0 | 0 | 0 | 0 | 0 | 0 |

Appendix J:

Substance Use Questionnaire

We just have a few more questions for you.

During the past 12 months, how often did you use the following substances without a medical prescription or more than your prescribed dosage?

| | Daily or almost daily | 3-6 times a week | Twice a week | Once a week | 2-3 times a month | About once a month | Several times, but less than once a month | Never | Prefer not to answer |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|-----------------------|-----------------------|
| Cannabis (marijuana, pot, grass, hash, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Cocaine (coke, crack, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Methamphetamine (speed, crystal meth, ice, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Inhalants (nitrous oxide, glue, gas, paint thinner, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Sedatives or sleeping pills (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Street opioids (heroin, opium, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Prescription opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other: (Please specify) _____ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other: (Please specify) _____ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |