A Dissertation

Submitted to the Faculty

of

Xavier University

in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Psychology

by

Courtney A. Wineland, M.A.

April 4, 2018

Approved:

Kathleen J. Hart, PhD, ABPP
Kathleen J. Hart, Ph.D., ABPP
Chair, School of Psychology

Susan L: Kenford, Ph.D.
Susan L. Kenford, Ph.D.
Dissertation Chair

An Exploration of Hookup Culture, Alcohol Use, and Sexual Health among College Students

Dissertation Committee

Chair	Susan L. Kenford Ph.D. Associate Professor of Psychology
Member	Kathleen J. Hart, Ph.D., ABPP Professor of Psychology
Member	Tammy L. Sonnentag, Ph.D. Assistant Professor of Psychology

Acknowledgments

This dissertation is dedicated to my younger sister, Kristen, who I look up to in more than one way. Her struggle with mental illness when growing up was when I first encountered the detrimental effects that psychological distress can have on individuals and their families. I am very thankful that my family had access to the resources needed to help her through this difficult time. I am proud of the woman she has become in the face of her hardships. Going through this experience was very humbling and I found myself wanting to help others who are less fortunate than my sister and my family. This interest led me to embark on a journey tougher than I could have ever imagined: starting my career as a Clinical Psychologist. Although these past five years have tested me in many different ways, I would not change this journey in any way because it has led me to understand the importance of compassion, diversity, advocacy, and empathy.

To Sue Kenford, I will be eternally grateful for all that you have done for me throughout the past few years. Not only have I learned various research skills, been educated about substance use, and meaningful practice in terms of clinical work from your expertise in these areas, but I have also appreciated your patience, your ability to put your students before yourself, and your willingness to help others (especially to those who lack statistical skills - like myself!). I feel so fortunate to have worked with you and there will always be a special place for you in my heart.

I am also extremely thankful to Dr. Kathleen Hart and Dr. Tammy Sonnentag for being a part of my committee. Dr. Hart, from being my advisor my first year in graduate school to helping me finish my dissertation, you have been with me every step of the way – I am grateful to have been able to work with you. Dr. Sonnentag, your love for knowledge and research, as well as the enthusiasm you bring to everything you do, are all things I appreciate about you. And to my research assistants, Liz Garcia and Tiffany Graves, I cannot thank you enough for all of your help! I wish you both the best of luck moving forward.

As for the many times I wanted to give up throughout this journey, I cannot express enough gratitude to my friends who were always there to push me forward. To Candace Tomes, not only were you a great mentor, you also became one of my very good friends throughout this process and were a huge support in more ways than one. I also want to thank one of the forever friends I made throughout this experience, Hannah Lubman, for always being my biggest cheerleader. I know I would not have made it to this point without you. I would also like to thank my college roommate and Cincinnati enthusiast, Alexis Kennedy, who despite not being in this program herself, was always there to encourage me when I had to partake in studying over spending time with my friends. And to my boyfriend, who came into this process late in the game, but has helped me to look at the glass half full no matter what life brings.

And last, but certainly not least, I would like to thank my family for always believing in me. To my mom, for instilling the value of education, the importance of finding your passion, and most of all – being the most selfless person I know. To my dad, who has taught me to never forget to laugh no matter how hard things get and always believed in me when I did not believe in myself. To my grandma, for always being there to listen and show interest in my endeavors. And to my Uncle Dave, the first doctor in my family who always validated my ability to succeed me when I feared in not making it through to the end.

Table of Contents

Page

List of Tables

Page

List of Figures

List of Appendices

Page

Abstract

Sexual behavior is a common occurrence among the college students and is referred to as the *hookup culture*. The current study explored the hookup culture using two different university samples and designs: Study 1 (N = 198) examined overall frequency of hookup behavior, alcohol use patterns, differences in personal and perceived peer normative attitudes about aspects of hookup culture, and Sexually Transmitted Infection (STI) knowledge using self-report data. Study 2 (N = 208) used vignettes to experimentally examine hookup approval and perceptions of safe sex practice likelihood in the presence/absence of alcohol and different partner type (familiar partner/ stranger). Results from Study 1 found that 82.8% of participants reported at least one or more hookups in the past 6 months, with the majority of encounters being between familiar partners. Robust differences emerged between personal and perceived peer attitudes, such that participants held significantly less favorable attitudes than they perceived their peers to hold. This was true for both men and women. These results indicate students harbor distorted perceptions of social norms about the hookup culture. Use of some safe sex practices was higher than expected; knowledge about STIs was very low. Study 2 found, contrary to predictions, that participants were less approving of a hookup when alcohol was involved. No differences in approval emerged for partner type. Students perceived significantly less likelihood of hookup partners practicing safe sex if alcohol was involved. College campus efforts to address hookup culture may benefit from social norms campaigns sharing students' "real" view of the hookup culture by highlighting differences between perceived peer attitudes and personal attitudes.

Hookup Culture, Alcohol Use, and Sexual Health among College Students

Sexual behavior is highly prevalent among college students. The most comprehensive examination of college student sexual behavior over time is the American College Health Association—National College Health Assessment II (ACHA–NCHA II) provides an annual survey collects information from over 81,500 college students across the country on a variety of sexual behaviors. Results from the most recent 2017 edition indicated that 61,462 students reported one or more forms of sexual activity within the past 30 days. Among those who reported sexual behavior within the past 30 days, 47.8% reported having had vaginal sex, approximately 45% reported having oral sex, and about 6% reported having had anal sex. Additionally, 25.9% of respondents reported having had two or more sexual partners in the past year. These numbers reflect the high degree of sexual activity on college campuses but are silent on the motivations associated with engaging in sexually intimate behavior and the cultural milieu within which it occurs. In other words, the survey does not address the drivers behind what is often referred to as the "hookup culture." Although *hookup culture* remains a somewhat fuzzy construct, a general consensus has emerged that a hookup is engaging in any of a range of sexual activity, from kissing to sexual intercourse, with someone with whom you do not have a committed relationship (Bogle, 2007; Glenn & Marquardt, 2001; Grello, Welsh, & Harper, 2006; LaBrie, Hummer, Ghaidarox, Lac, & Kenney, 2014; Paul & Hayes, 2002). Investigations assessing the frequency of self-reported hookups—in contrast to specified sexual activities--have found rates are as high as 77 to 85 % (Glenn & Marquardt, 2001; Lambert, Kahn, & Apple, 2003; Paul, McManus, & Hayes, 2000). Further, the average number of hookups during college may be as high as 10 and although the majority of these encounters are between partners who know each other, around 10 -13% occur with strangers (Bogle, 2007; Paul & Hayes, 2002).

Studying the Hookup Culture

Hookup behavior among college students, and the attendant hookup culture it supports, has come under increased study. Although the prevalence of sexual activity among college students has remained largely steady since the 1970s, findings suggest college students are changing the way they talk about sexual activity, think about hookup behavior and the level of acceptance associated with hooking-up (Aubrey & Smith, 2013; Bogle, 2007; Monto & Carey, 2014; Paul & Hayes, 2002). These changes appear to represent a fundamental shift in terminology from the once common *casual sex* to the term *hookup*, reflecting differences from earlier generations in how students talk about their sexual activity with one another (Bogle, 2008; Grello et al., 2006; Lambert et al., 2003; Paul & Hayes, 2002; Stupiansky, Reece, Middlestadt, Finn, & Sherwood-Laughlin, 2009). Research suggests the ambiguity associated with the term *hookup* is intentional and allows college students to communicate differently about their sexual experiences than previous generations—to simultaneously endorse casual sexual activity and obscure the extent and nature of personal behavior (Paul et al., 2000). This ambiguity appears to result in many students feeling confused about what their peers are actually doing when it comes to sexual activity (Bogle, 2007).

Several studies examined student attitudes surrounding the hookup culture, as well as motivations to hookup in the college population. Aubrey and Smith (2013) explored what college students enjoyed about hooking up to gain insight into why hookup culture has become common in the overall college experience. They identified several core domains associated with hookup enjoyment: no-commitment sex, fun, increased social status, personal control, and sexual freedom. The authors found that students may personally identify with only one or several of these aspects but all aspects were viewed as crucial parts of hookup culture. Kenney and

colleagues (2014) asked a slightly different question to explore what students identified as the primary motivations associated with hooking up. They found that sexual satisfaction, relationship development, experience enhancement, coping with negative mood/self-concept, and conformity to others' expectations emerged as primary motivations behind hookup behavior. Given the number and variety of motivations and attributes associated with the decision to hookup, hookup behavior appears best understood as multiply determined and multifaceted.

Although the term hookup remains ambiguous, the process of hooking up is more clearly defined within college culture. For example, Aubrey and Smith (2013) identified agreed-on rules and assumptions governing the hookup encounter which are shared by the majority of college students. Further, there is evidence to suggest that the general norm among students is a belief that hooking up is a fundamental aspect of the college experience and an accepted stance on sexual activity (Aubrey & Smith, 2009; Monto & Carey, 2014; Paul & Hayes, 2002; Vander Ven & Beck, 2009). Although studies have found that hookups are accepted and may have some positive effects, other studies have documented negative outcomes associated with hooking up (Campbell, 2008; Vrangalova, 2015). Positively associated outcomes include the finding that, on average, both men and women report more positive than negative affect following a hookup (Uecker & Martinez, 2017). However, this may apply only to students who approve of hookup culture (Colby, Swanton, & Colby, 2012).

In contrast, emotional ambivalence following a hookup has been associated with difficulty interpreting or justifying the hookup experience, high levels of intoxication during the hookup, and possible social embarrassment coupled with feelings of shame and regret (Estabaugh & Gute, 2008; Moore, Brown, & Olmstead, 2016; Owen, Rhoades, Stanley & FInchman, 2010). One particularly large web-based study of 1,468 students found that about a

quarter of respondents reported experiencing negative outcomes following a hookup, including feeling embarrassed (24%), having emotional difficulties (24.7%), and experiencing loss of respect (20.8%) after a hookup encounter (Lewis, Atkins, Blayney, Dent & Kaysen, 2013). The mixed outcomes associated with hooking up suggest that acceptance and approval of hookup culture may be less universal among college students than it appears. In other words, although hooking up is the accepted norm, individual students may be less comfortable with hookup behavior on a personal level and differences may exist between personal beliefs and perceived peer beliefs.

Alcohol Use as an Integral Part of the Culture

Alcohol use appears to hold a central role in much of hookup culture. Aubrey and Smith (2013) noted that there is often the expectation that alcohol is involved in a hookup. An independent line of research shows that college students generally hold positive attitudes about, and high acceptance of, heavy alcohol use (Colby et al., 2012). In general, alcohol use by college students is the norm; over 57% of college students report alcohol use in the past 30 days. Among those who drink alcohol, heavy use appears common, as 40% of students report binge drinking (5 or more standard drinks in a row) and 12% report drinking 10 to 29 days out of the month (AHCA-NCHA, 2015) .

Research focused on the relations between alcohol use and hookup behavior has found that about two-thirds of participants report drinking prior a hookup encounter (Downing-Matibag & Geisinger, 2009; LaBrie et al., 2014). Alcohol use is associated with increased rates of hooking up with a stranger (LaBrie et al., 2014) and may serve as an excuse or a way to justify hookup behavior later when sharing information about the encounter with peers (Paul & Hayes, 2002). The interwoven nature of alcohol and hooking up is illustrated by where and when

students expect hookups to occur. An illustrative study done by Paul & Hayes (2002) asked students what situations are likely to result in hookups. Results indicated that 67% of students reported hookups occur at parties, 57% at fraternity houses, and 10% at bars or clubs.

Familiar Partners vs. Strangers

Beliefs about partner type are a distinct feature of the hookup culture (Bogle, 2007; Grello et al., 2006; LaBrie et al., 2014; Paul & Hayes, 2002). Research is clear that college students' perceptions of their peers' hookup partners tend to be different than their peers' actual partners (Paul & Hayes, 2002). Studies assessing actual hookup behavior suggest the majority of hookups occur with friends or known individuals (Bogle, 2007; Grello et al., 2006; LaBrie et al., 2014; OCSLS, 2011). The Online College Social Life Survey (OCSLS) surveyed 21,549 students from 22 colleges and universities between 2005 and 2011 and found that only 13% of hookups occurred with an unknown partner (OCSLS, 2011). When a hookup does involve an unknown partner, it is more likely to involve alcohol as well (LaBrie et al., 2014). These findings suggest that although there may be the assumption among college students that hookups often involve two partners who do not know each other, this is not an accurate picture of the hookup culture.

Partner type is also associated with the motivations for hooking up, as well as expectations following a hookup. Individuals who report hooking up with strangers are less likely to report hoping that a relationship will ensue from the hookup, whereas those who hookup with familiar partners tend to be more interested in starting a relationship with the person following the hookup (Garcia et al., 2012). When the partner is familiar, the proportion of those hoping that the hookup will evolve into a relationship appears quite high, with results indicating approximately half of both men and women would like to start a relationship with their hookup

partner (Garcia & Reiber, 2008; Grello, et al., 2006; Owen et al., 2010). These results are notable in light of being contrary to the hookup cultural tenet that a hookup is a no-obligation sexual intimacy.

Gender Differences

A growing body of work has examined if there are gender differences regarding hookup behavior, hookup motivations and the after-effects of hooking up. To date, results have been mixed and clarity has yet to emerge (Estabaugh & Gute, 2008; Kenney et al., 2013; Lewis et al., 2013; Lewis, Lee, Patrick, & Fossos, 2007; Paul & Hayes, 2002). For example, although a some studies suggested that men tend to be more accepting of hookup culture and have more frequent hookups than women (Owen et al., 2010; Vrangalova, 2015), other studies have found that women report deriving equal enjoyment from the hookup encounter (Kenney et al., 2013). For example, some data suggest that as many as 70% of women who reported hooking up indicated they had done so for enhancement reasons-- such as for having fun, experiencing pleasure, and expanding self-esteem. Although some studies have found more women than men hope a hookup will lead to a relationship, and experience more regret one does not materialize (Owen et al., 2010), other studies have found no gender differences in this area (Garcia et al., 2012).

Some data suggest that how men and women believe others will view their decision to hookup up differs. For example, Campbell (2008) found that men were more likely to report a hookup experience provided social enhancement, including increasing their status among their friends and being viewed as “successful” when their partner was considered desirable by others. Women on the other hand were more likely to believe they had let themselves down and to hope their friends would not find out about the hookup due to concerns about being negatively judged. Such findings suggest that even within the frame of the hookup culture, men and women might

both hold—and be held to—different cultural expectations with the result that the same behavior is perceived differently. In a recent study, Uecker and Martinez (2017) found that overall both men (86%) and women (75%) reported they did not regret their hookups. However, women were likely to express regret when they were not the ones who initiated the hookup encounter, when they were not sexually satisfied, when they felt that their partner had a loss of respect for them, and when they compared their hookup experience to their female peers' hookup experiences.

Hookups and Safe Sex

The sexual intimacy associated with hookup culture carries many associated risks. These risks include, but are not limited to, increased chances of contracting a sexually transmitted infection (STI), limited discussion between partners about sexual history, and increased risk of pregnancy due to a lack of using protection (ACHA, 2017; CDC, 2016; Cooper, 2002; Weinstock, Berman & Cates, 2004). Rates of STI diseases and pregnancy are higher among those of college age than in any other age group in the United States. Specifically, the adolescent and young adult population accounts for about half of the estimated 20 million new STI cases reported each year (CDC, 2016). Within the context of hookup culture, the risks are compounded by limited use of safe sex practices when coupling sexual activity with alcohol (Abbey et al., 2007), limited knowledge about STIs and low perceived personal risk (Weinstein et al., 2008; Yacobi et al., 1999) and limited concern on the part of college students about their sexual health (Downing-Matibag & Geisinger, 2009). The 2017 ACHA–NCHA II found only about half of sexually active respondents used any form of contraception, with a majority (56.4%) of those who did use contraception reporting the use of birth control pills, which does not protect against STIs. Results indicate that condom use is variable and context specific. Condom usage appears significantly lower when alcohol is involved (Abbey et al., 2007) and

when contact is with "repeat" partners (Scott-Sheldon, Carey & Carey, 2010), Further, condoms are largely viewed as only needed for vaginal sex and are not used when students engage in oral or anal sex (Fielder & Carey, 2010a).

Knowledge about STIs and how to guard against them has been directly related to the likelihood of using safe sex practices (Weinstein et al., 2008). Results indicate that not only do students lack knowledge about STIs, they underestimate their chances of contracting an STI or becoming pregnant during unprotected sexual contact (Downing-Matibag & Geisinger, 2009). A repeated finding is that few students recognize the health risks of hookups, particularly those that occur with someone they perceive as a member of their community—i.e., someone on their college campus (Boone & Llefkowitz, 2008; Downing-Matibag & Geisinger, 2009; Lamber et al., 2003). Although the research is clear that safe sex practices are uncommon in the hookup culture (Abbey et al., 2007; Corbin & Fromme, 2002; Scholly et al., 2010; Vail-Smith et al., 2010; Weinstein et al., 2008) the extent that this can be attributed to limited knowledge is less known.

Perceived Norms of Hooking Up

The agreed upon rules and assumptions that govern hookup behavior have been understood as culture-specific norms (Paul & Hayes, 2002). Social norms research into a variety of college student behaviors indicates that students tend to overestimate the frequency with which their peers engage in certain behaviors (Colby et al,, 2009; Grello et al., 2006; LaBrie et al., 2014; Larimer et al., 2004; Wardell & Read, 2013) and that such misperceptions are associated with personal behavioral choices (Lewis, et al 2007). This is a robust finding for alcohol use (Colby et al., 2009) and appears to apply to at least some aspects of the hookup culture, such as partner type (LaBrie et al., 2014; Paul & Hayes, 2002). When asked, students

describe the prototypical hookup as two strangers, drinking alcohol at a party, having sexual intercourse, and feeling good, aroused, or excited during the hookup (Paul & Hayes, 2002). However, when asked about their personal hookup experiences, different, often less positive, narratives emerge (Lewis et al., 2013). Although research has explored the differences between perceived attitudes and personal attitudes for some aspects of hookup culture (i.e., alcohol use, partner type), no studies to date have attempted to examine personal and perceived normative beliefs about hookup culture as a whole.

The Current Study

The primary goal of the current study was to expand the hookup culture literature by assessing factors known to be associated with hooking up and exploring how these factors are related to views of the hookup culture as a whole. Of particular interest was exploring whether student views of the hookup culture and hookup behavior are generally positive or if this is a widely held misperception. Also of interest was whether and how knowledge of sexual health affects hookup perceptions and behavior.

The current study extends the literature in several ways. First, it had two parts and two complementary aims: Study 1 gathered normative and descriptive data to understand students' personal views and perceptions of peer attitudes about the hookup culture – including the role of alcohol, acceptability of various hookup behaviors, and knowledge and use of safe sex practices. Study 2 used vignettes to experimentally examine how the presence/absence of alcohol and degree of relationship between partners influenced respondents' approval of a hook up encounter and their beliefs about the extent that safe-sex would be practiced. To our knowledge, no one study has assessed perceptions of hookup behavior using both self-report and experimental manipulation components. The use of these two complementary approaches allowed for

examination of what students report their attitudes about the hookup culture are when directly asked and what they demonstrate their attitudes are when experimentally tested. Further, although past studies have examined the hookup culture and safe sex knowledge in isolation, to our knowledge, none have done so jointly.

This study set forth to investigate the following questions: Do students' personal beliefs about the hookup culture differ from their perception of peer beliefs? Do students' view the hookup culture in generally favorable or unfavorable terms? Do men and women differ in how they view the hookup culture? How knowledgeable are students about STIs? Are students generally more accepting of hookups that involve alcohol use? Are students generally more accepting of hookups where there is familiarity between partners? How are partner familiarity and alcohol use related to safe sex practices? To guide these questions, the following specific hypotheses were tested:

Normative Data (Study 1):

S1-H1: It was hypothesized that there would be a significant difference between self-reported personal hookup attitudes and perceived peer hookup attitudes. Specifically, participants would report significantly more negative personal attitudes of hookup behavior than perceived peer attitudes of hookup behavior.

S1-H2: It was hypothesized that there would be a significant difference between the self-reported personal attitudes of men and women. Specifically, men would report significantly more positive personal attitudes of hookup behavior than women.

Additionally, the following hypothesized relations were explored:

E1: There would be a significant positive correlation between participants' alcohol consumption and hookup frequency. Specifically, participants who reported higher alcohol consumption would report a higher frequency of hookups.

E2: There would be a significant negative correlation between participants' alcohol consumption rates and utilizing safe sex practices. Specifically, participants who reported higher alcohol consumption would report lower utilization of safe sex practices.

E3: There would be a significant positive correlation between participants' knowledge of STIs and engagement in safe sex practices. Specifically, participants who scored higher on a measure of knowledge about STIs would report higher utilization of safe sex practices.

E4: There would be a significant positive correlation between hookup behavior and knowledge of STIs. Specifically, participants who reported a higher frequency of hookups would score higher on a measure of knowledge about STIs.

Experimental Data (Study 2)

S2-H1: It was hypothesized that participants would view hookup behaviors as more acceptable when alcohol was involved. Specifically, participants who read a hookup vignette in which alcohol was mentioned would rate the hookup behavior as more acceptable and understandable than the hookup behavior depicted in vignettes where alcohol is not mentioned.

S2-H2: It was hypothesized that participants would view hookup behaviors as more acceptable when there was familiarity between partners. Specifically, participants would rate the hookup behavior in the vignettes where the partners know each other as more

acceptable and understandable than the hookup behavior in the vignettes where the partners were strangers.

S2-H3: It was hypothesized that there will be an interaction between alcohol use and partner familiarity on acceptability rating. Specifically, participants would rate the hookup behaviors in the vignette that involved alcohol and familiar partners more favorably.

S2-H4: It was hypothesized that participants will rate the likelihood of using safe sex practices as occurring less often when alcohol was involved. Specifically, participants would rate the likelihood of a sex-safe conversation between partners and use of contraceptives as lower in the vignettes where alcohol was involved than in the vignettes when alcohol is not involved.

S2-H5: It was hypothesized that participants would rate the likelihood of using safe sex practices lower when there was familiarity between partners. Specifically, participants would rate the likelihood of a sex-safe conversation between partners and use of contraceptives as lower in the vignettes where the partners knew each other than in the vignettes where the partners were strangers.

S2-H6: It was hypothesized that there would be an interaction between alcohol use and partner familiarity for likelihood of using safe sex practices. Specifically, participants would rate the likelihood of using safe sex practices highest for the vignette that did not involve alcohol and where the partners were strangers.

Method

Participants

Participants were recruited from a psychology participant pool at a private Midwestern university with about 4,600 undergraduate students. Two separate samples were recruited to answer the primary questions. Both samples' inclusion criteria was age 18 and above. There was no exclusion criteria. Participants earned research participation course credit for their time. Study 1 totaled 198 undergraduates. The sample included a total of 74 men and 123 women. The average age was 19.91 years old (*SD* = 1.53). Study 2 totaled 208 undergraduates. The sample included 75 men and 133 women. The mean age was 19.93 years old (*SD* = 1.12). See Table 1 for further demographic information.

Measures

Demographics questionnaire. A demographics questionnaire was created and used in both studies. It included participants' age, gender, ethnicity, religious identification, year in school, GPA, current employment status, family income, family structure, current relationship status, and sexual orientation (see Appendix A).

Study 1

Attitudes about hookups questionnaire (AHQ). This measure was created for the current study and assessed both perceived social norms and actual norms about the hookup culture. Items reflected seven hookup culture domains established by past research (Aubrey & Smith, 2013; Kenny, Lac, Hummer, & LaBrie, 2014). The items were drawn from extant measures and consolidated to form a single measure. The following hookup definition, adapted from LaBrie et al., (2014), was provided to participants in order to minimize individual interpretations of the term:

> Hooking up is engaging in intimate behavior, to which there is mutual consent, ranging from kissing to sexual intercourse between two people who are not in a committed relationship. (LaBrie et al., 2014).

Parallel structure and content was used to assess perceived norms (e.g., individuals' report of perceived peer beliefs) and actual norms (e.g., individual's report of their own beliefs). A total of 28 items were used to assess each norm category and yielded two summary scores; summary scores could range from 28 – 140. Higher scores reflected more endorsement of the hookup culture. Participants first rated the 28 items in terms of how they believe their peers view hookups and rated the same 28 items in terms of how they personally view hookups. Participants rated each item using a 5-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*).

The summary score for personal attitudes was computed by summing the 28 personal attitudes items. The personal attitudes scale of the AHQ measure demonstrated excellent internal consistency, Cronbach's α =.91. The summary score for perceived peer attitudes was computed by summing the 28 peer attitudes items. The perceived peer attitudes scale demonstrated good internal consistency (α = .81). Within the 28 items, 7 domains were assessed with 4 items each. The domains displayed poor-to-good reliability, demonstrating the following Cronbach's alpha for perceived peer and personal attitudes domains respectively: 1) sexual attitudes (SA - α = .66; α = .75); a sample item is "Hookups provide sexual benefits without a committed relationship;" 2) relationship attitudes (RA - α = .76; α = .86); a sample item is "Hookups are a way to find a relationship;" 3) coping attitudes (CA - α = .74; α = .83); a sample item is "Hookups make people feel more attractive;" 4) harmlessness attitudes (HA - α = .48; α = .84); a sample item is "A hookup is just a hookup;" 5) fun attitudes (FA - α = .37; α = .57); a sample item is "People hookup to have a good time;" 6) status attitudes (STA - α = .75; α = .83); a sample item is

"Hookups make people more popular;" and 7) alcohol attitudes (AA - α = .62; α = .68); a sample item is "People use alcohol as a reason to hookup." (see Appendix B).

Hookup behaviors questionnaire (HBQ). This measure was created for the study and modeled on the Cognitive Appraisal of Risky Events-Revised (CARE-R; Katz, Fromme & D'Amico, 2000). The CARE-R assesses a range of risky sexual behavior but is not focused on the hookup culture. The HBQ was designed to assess the full spectrum of consensual sexual behavior that can occur within a hookup, including: kissing/making out, fondling, oral sex, and sexual intercourse. The HBQ assessed both the frequency of various hookup behaviors and the frequency of safe sex practices in regards to partner type (familiar partner/ partner they just met) and in regards to alcohol use (present/absent); all combinations were assessed. The HBQ totaled seven items: four hookup behavior items and three safe sex practices items. An example hookup behavior item is "Engaged in fondling or touching below the waist." An example safe-sex item is "Used condoms or other protection during sexual intercourse." Participants indicated how often they engaged in each behavior over the past 6 months using a 7-point Likert-type scale (0 = *not at all*; 7 = *31 or more times*) for each partner/alcohol combination. Separate subscale scores for hookup behaviors were calculated based on partner type (familiar/stranger) and consumption of alcohol (present/absent), resulting in a total of eight subscale scores. Internal consistencies for each subscale ranged from excellent to good: total hookup behavior with a familiar partner (HF; α = .94), total hookup behavior with a stranger (HS; α = .92), hookup behavior with familiar partner after consuming alcohol (HFA; α = .92), and hookup behavior with a stranger after consuming alcohol (HAS; α = .85). The subscales for safe sex practices indicated poor reliability (α = .12 to α = .48), therefore individual items that assessed safe sex practices were used in the analyses as opposed to a combined scale. (see Appendix C).

STD-Knowledge questionnaire (STD-KQ). The STD-KQ (Jaworski & Carey, 2007) is a comprehensive questionnaire assessing up-to-date knowledge regarding sexually transmitted diseases (STDs). The STD-KQ includes statements about chlamydia, genital herpes, gonorrhea, hepatitis B, HIV, and Human Papilloma Virus (HPV). The STD-KQ uses a true/false/don't know format and includes 27 statements about STDs. Sample items are "Genital Herpes is caused by the same virus as HIV," "There is a vaccine that prevents a person from getting Chlamydia," "A man can tell by the way his body feels if he has Hepatitis B." Each correct answer is assigned 1 point; incorrect and "don't know" responses answers are assigned 0 points. A total score was calculated by summing all correct responses. An unexpected error in formatting the questionnaire resulted in two items being excluded, therefore the total number of items was 25. Total scores could range from 0 - 25, with higher scores indicating higher rates of STD knowledge. No cut-off or threshold scores have been identified by past research. The STD-KQ demonstrated good internal consistency ($\alpha = .85$). (see Appendix D).

Alcohol use survey (AUS). The Alcohol Use Survey (AUS) was created for the assessment of college drinking. The AUS uses standard language for assessing alcohol use. The survey captures the following personal drinking information using standard drink units: 1) typical number of days in a week when alcohol is consumed; 2) the number of standard drinks consumed each day in the previous 2 weeks; 3) number of binge drinking episodes (defined as 5 drinks for men and 4 drinks for women in a 2-hour period) within the past 2 weeks and 4) modified DSM-5 diagnostic criteria assessing for alcohol use disorders. The DSM-5 criteria were modified by making the wording and language more understandable to college age participants. Participants also reported how often their friends drink and what percentage of their friends drink.

The AUS data were used to calculate two primary variables: total number of standard drinks (TSD) consumed over a 2 week period and total number of binge episodes (TBE) in a 2-week period. TSD was calculated by summing all the reported standard drinks. TBE was extracted from question 8 for men and question 10 for women and added together. (see Appendix E).

Study 2

Hook up vignettes. A series of vignettes were used to assess participants' perceptions regarding hooking up, alcohol use, and partner type. The vignettes were modified versions of those used by Moore and Olmstead (2016) in a study evaluating beliefs about hooking up in a sample of 234 college students. Each vignette included a situation where a hookup is taking place between two individuals. The vignettes reflect four different situations: 1) hookup between two strangers with alcohol present; 2) hookup between two strangers without mention of alcohol; 3) hookup between two acquaintances with mention of alcohol; and 4) hookup between two acquaintances without mention of alcohol.

Sample vignette: (hookup between two strangers with alcohol present):

Taylor is in downtown on a Friday night with some friends and sees Cameron at a local bar. Taylor and Cameron **don't know each other**, but Taylor sits down next to Cameron and starts up a conversation. While they talk, Cameron offers to buy them **both a shot**. Taylor is appreciative, and the two talk and laugh late into the evening. When the bar is closing, Taylor and Cameron are **both too drunk to drive** themselves home. They decide to catch a cab home together, and they stop at Cameron's apartment first. Cameron invites Taylor inside, and Taylor accepts the invitation. After some more laughing and flirting, they end up hooking up.

After reading the vignette, participants read and rated two approval items and three safe-sex practice likelihood items using a 5-point Likert-type scale (1 = *Strongly Disagree/Not at all likely,* 5 = *Strongly Agree/ Completely Likely*). The primary approval item was "it was acceptable for Taylor and Cameron to go home together." A sample safe-sex likelihood item is "Taylor and Cameron talked about their sexual history (ex: number of partners, history of STIs)."

The primary approval item was used to assess subject approval of the hookup. A safe-sex practices likelihood score was calculated by summing the three safe sex practices items, with higher scores indicating higher likelihood of safe sex practices. The vignettes' internal consistency values were as follows: vignette 1 $\alpha = .95$; vignette 2 $\alpha = .94$; vignette 3 $\alpha = .96$; vignette $\alpha = .94$. (see Appendix F).

Distractor Vignettes. Two distractor vignettes depicting other potentially challenging situations college students face (i.e., roommate conflict and academic dishonesty) were included to reduce response bias by obscuring the primary focus of the study, thereby promoting more automatic and less controlled responding. Respondents were asked to read each vignette and use a 5-point Likert-type scale (1 = *Strongly Disagree/Not at all likely,* 5 = *Strongly Agree/ Completely Likely*) to answer approval and likelihood questions related to the vignette content designed to parallel those used with the hookup vignettes. These items were not be summed or used for analyses.

Sample Distractor Vignette: Jordan and Alex were randomly paired roommates but have become friends after spending several weeks living together in the dorms. Jordan just started dating someone recently, who commutes from home and, because of this, stays in the room several nights a week. Alex didn't mind this at first, but after awhile it became very frustrating to have three people in such a small room. Alex decided to bring it up to

Jordan who shrugged it off and did nothing to change the situation. After confronting Jordan directly, Alex went to the RA as guests are against dorm policy and Alex was not sure what else to do about the situation. Jordan was written up, had to pay a fine, and was barred from having guests. Alex knew that this would be Jordan's second citation. A third citation results in formal disciplinary action by the school.

(see Appendix G).

Shared Procedure

Participants for both parts of the study were recruited through the School of Psychology research participant pool and received course research credit for their participation. All responses were completely anonymous. Prior to the onset of data collection, permission was obtained from The university's institutional review board (IRB) and approved this study (see Appendix B). Informed consent was obtained at the onset of each study.

Study 1 Procedure

After completing the informed consent process, the sample completed the following self-report questionnaires: the demographic questionnaire, HBQ, AHC, STD-KQ, and AUS. The order of the questionnaires was counterbalanced to reduce potential order effects, with the exception of the demographic questionnaire, which was presented first.

Study 2 Procedure

Study 2 participants were randomly assigned to one of the four experimental vignettes using a random number generator in advance of data collection. Each experimental vignette was accompanied by the demographics form and the two distractor vignettes. The sequence of the vignettes was rotated across participants to control for order effects. The demographic questionnaire was always completed first.

Results

Study 1

Analytic strategy: Study 1 hypotheses were tested using a single two-by-two mixed-model multivariate analysis of variance (MANOVA). The within-subjects factor was personal approval versus perceived peer approval of hookup culture. The between-subjects factor was sex (men and women). The dependent variables (DV) were the seven hookup domains: sexual attitudes (SA), relationship attitudes (RA), coping attitudes (CA), harmless attitudes (HA), fun attitudes (FA), status attitudes (STA), and drinking attitudes (DA). Using a single MANOVA allowed for testing the main effects of approval source (personal/perceived peer), gender and their interaction.

Preliminary analyses: Prior to conducting analyses, the distributional properties of continuous variables were assessed using multivariate outlier analyses, including calculation of Mahalanobis distance, Cook's distance and centered leverage values (Tabachnick & Fiddell, 2001). Results revealed two cases with extreme values. To retain these cases and their position within the distribution, both were transformed to reflect the value associated with three standard deviations above the mean (Osbourne, 2002).

Alcohol use patterns. Alcohol use was common; a total of 144 (72%) participants reported consuming alcohol. Average use was 2.6 days per week (SD = 2.69) and the average number of drinks per week was 7.1 (SD = 8.71). A series of pair-sampled t-tests demonstrated that men reported significantly more drinking days per week, consumed significantly more standard drinks per week, consumed significantly more drinks in one setting, and reported a significantly greater number of binge episodes compared to women. Table 2 contains detailed alcohol use information.

Hookup Behavior. Hookup behavior within the past 6 months, defined as intimate physical contact ranging from kissing to sexual intercourse, was reported by a super-majority (82.8%) of the sample. Table 3 contains frequency of specific hookup behaviors for the full sample. Among those who reported at least one hookup encounter with someone they knew within the past 6 months, 74.8 % indicated it included alcohol and 25.2 % reported it did not include alcohol; among those who reported at least one hookup encounter with someone they just met within the past 6 months, 94.3 % reported it included alcohol and 5.71% reported the encounter did not include alcohol. Hookup behavior was largely comparable between men and women. Chi-square tests of proportions demonstrated no significant differences in number of reported hookups between men and women. Collapsed across total percentages of hookup behavior, women reported a higher percentage (61.0%) of hookups with familiar partners when alcohol was involved than men (59.5%), however this difference was not significant. See Table 4 for detailed information regarding differences between men and women.

Safe sex practices and knowledge. A total of 101 (51%) participants reported one or more hookup encounters that included sexual intercourse. Seventy-six participants reported having had intercourse one or more times exclusively with a familiar partner, seven reported having had intercourse one or more times exclusively with a stranger and 25 reported having had intercourse one or more times with both a familiar partner and a stranger within the past 6 months. Safe sex practices were low considering the high frequency of hookup encounters that involved oral sex and sexual intercourse. With regard to sexual intercourse, 83 % of those who had sexual intercourse with a familiar partner reported using protection and 88 % of those who reported having sexual intercourse with someone they just met reported using protection; overall, frequency for the full range of safe sex practices was higher when alcohol was not involved.

Utilization of safe sex practices during oral sex was markedly lower than during sexual intercourse. See Table 5 for more information regarding frequency of safe sex practices. Chi-square tests of proportions showed no significant difference between men and women for any safe sex practice. See Table 6 for differences in safe sex practices between men and women.

Results indicated limited formal knowledge about sexually transmitted diseases. In the full sample, accurate knowledge $M = 10.68$ ($SD = 4.27$) out of a total possible of 25. No significant sex differences emerged for total number of correct responses t (195) = 1.46, $p = .20$, men ($M = 11.01$, $SD = 5.04$) scored slightly than women higher ($M = 10.42$, $SD = 4.51$).

Study 1 Primary Hypotheses:

S1-H1: S1-H1 hypothesized there would be a significant difference between personal hookup attitudes and perceived peer hookup attitudes. Specifically, it was predicted that participants would report significantly more negative personal attitudes of hookup behavior than perceived peer attitudes of hookup behavior.

The hypothesis was supported. The results revealed a significant multivariate effect for attitudes of hookup behavior (personal and perceived peer), Wilks's $\Lambda = .32$, F (7, 191) = 59.29, $p < .007$, $\eta^2 = .98$. T-test comparisons were conducted to identify which of the seven hookup domains differed. A Bonferroni correction for multiple tests was applied. All seven domains were statistically significant at $p < .007$, with perceived peer attitudes showing significantly higher approval ratings than personal attitudes. See Table 7 for sample means.

S1-H2: S1-H2 hypothesized that men and women would hold different personal hookup attitudes. Specifically, men would report significantly more positive personal attitudes of hookup behavior than women. The hypothesis was supported. The results indicated a

significant multivariate main effect for gender Wilks's $\Lambda = .72$, F (7, 189) = 10.33, $p < .007$, $\eta^2 = .27$. Analyses of Variances (ANOVA) were conducted on each dependent variable. Using the Bonferroni method, p was set at .007. The ANOVAs for relationship attitudes F (1, 195) = 9.60, $p = .00$, $\eta^2 = .05$, fun attitudes F (1, 195) = 13.87, $p = .00$, $\eta^2 = .06$, and status attitudes F (1, 195) = 35.63, $p = .00$, $\eta^2 = .15$, were all significant; the ANOVAs for sexual attitudes, coping attitudes, harmless attitudes, and drinking attitudes were not. *T*-test comparisons were conducted to identify how the hookup domains, collapsed across personal and perceived peer attitudes, differed between men and women. Results indicated that men held significantly higher relationship attitudes (M men = 10.72; M women = 9.47), fun attitudes (M men = 15.95; M women = 14.78), and status attitudes (M = men 12.01; M women = 9.50).

A significant multivariate interaction between sex and personal versus perceived peer attitudes emerged, Wilks's $\Lambda = .83$, $F(7, 189) = 5.64$, $p < .05$, $\eta^2 = .17$. Univariate ANOVAs were conducted to identify which of the seven hookup domains differed. Five of the seven domains were statistically significant after applying a Bonferroni correction for multiple tests, $p < .007$. Relationship, coping, harmless, fun and status domains all showed significant interactions. The direction of each interaction was tested using paired-sample *t*-tests between personal and peer approval ratings for men and women separately. All tests for both men and women were significant at $p < .001$, indicating both men and women reported significantly lower personal approval than perceived peer approval. However, the magnitude of difference was generally greater for women than for men. Figures 1 -7 depict the interactions for each hookup domain.

Exploratory analyses: The relations between hookup behavior and safe sex practices were explored by creating a correlational matrix. The correlations were examined not only for statistical significance ($p < .05$) but for the strength of association, defined as follows: small effect=.20, medium effect=.50, and large effect=.80 (Cohen, 1992). See Table 8 for all correlation values.

The following relations were predicted:

S1-E1: S1-EI predicted a significant positive correlation between participants' alcohol consumption and hookup frequency. This hypothesis was supported. Results revealed significant positive correlations between personal alcohol consumption (average number of drinks in the past week) and hooking up with a stranger, hooking up with a familiar partner after drinking alcohol, and hooking up with a stranger when alcohol is involved. Similar results emerged between binge episodes (in the past week) and the hookup behaviors. Although statistically significant, all associations were small.

S1-E2: S1- E2 predicted a significant negative correlation between participants' alcohol consumption rates and utilization of safe sex practices. The hypothesis was not supported. As seen in Table 7, participants who reported higher weekly alcohol consumption, as well as more binge episodes, reported significantly higher utilization of safe sex practices. Specifically, those who reported higher alcohol consumption also reported higher utilization of safe sex practices during intercourse with a stranger when alcohol was involved and had more conversations with familiar partners when alcohol was involved. There were also significant positive correlations between number of binge episodes and using protection when hooking up with a stranger, when alcohol was involved, and when having a conversation about sexual history between strangers when alcohol was involved.

Although significant, associations were small. No significant relations emerged between using protection during oral sex and the alcohol use variables.

S1-E3: S1-E3 predicted a significant positive correlation between participants' knowledge of STIs and engaging in safe sex practices. The hypothesis was not supported. Only one significant result emerged. This was a negative correlation between knowledge of STIs and protection during oral sex with a stranger, such that participants who engaged in safe sex during oral sex with a stranger scored lower on a measure of STI knowledge. The association was small.

S1-E4: S1-E4 predicted a significant positive correlation between frequency of hookup behavior and knowledge of STIs. The hypothesis was not supported. Although results were in the predicted direction, they did not reach statistical significance.

Study 2: Analytic Plan

Study 2 investigated attitudes about hookup behavior, alcohol use and safe-sex practices experimentally through the use of four distinct vignettes. Alcohol (present/absent) and partner familiarity (known/stranger) were experimentally manipulated to determine their effects on approval and perceived likelihood of engaging in safe-sex practices. Two separate 2 x2 analyses of variances (ANOVA) were conducted to test a series of six formal hypotheses. For both ANOVAs the independent variables were alcohol (present/absent) and partner type (familiar/stranger). See Table 8 for detailed information.

Primary hypotheses: Before formal analyses, the effectiveness of randomization and baseline equivalency of demographic factors across conditions was assessed. A one-way MANOVA was used to evaluate continuous variables and chi-square tests of proportions assessed categorical variables. Results indicated the randomization process was effective and the

conditions were equivalent at baseline. See Appendix A. See Table 9 for details of the following results.

Approval ratings:

S2-H1: S2-H1 hypothesized that participants would view hookup behavior as more acceptable when alcohol was involved. Specifically, it was predicated that participants would report higher approval of the hookup behavior depicted in the alcohol-present vignette when compared to approval of the hookup behavior in the alcohol-absent vignette. The hypothesis was not supported. Although a significant main effect emerged for alcohol $F(1, 204) = 7.58$, $p = .01$, $\eta^2 = .04$ it was opposite in direction to predictions. Specifically, participants rated the hookup behavior in the alcohol-absent vignette as more acceptable (approval $M = 3.76$) than the hookup behavior in the alcohol-present vignette (approval $M = 3.35$).

S2-H2: S2-H2 hypothesized that participants would view hookup behavior as more acceptable when it occurred with a known partner. Specifically, it was predicted that participants would report higher approval of the hookup behavior depicted in the familiar-partner vignette when compared to approval of the hookup behavior in the stranger-partner vignette. The hypothesis was not supported. There was no main effect for partner type on approval ratings $F(1, 204) = .14$, $p = .71$, $\eta^2 = .00$.

S2-H3: S2-H3 hypothesized that there would be an interaction between alcohol use and partner familiarity on approval rating. Specifically, participants would rate the hookup behavior depicted in the alcohol-present/familiar partner vignette as much more acceptable than the alcohol-absent/familiar partner. Approval of hookup behavior with the stranger partner would not be affected by presence/absence of alcohol. This

hypothesis was not supported. The interaction between partner type and alcohol was not significant $F(1, 204) = .09$, $p = .76$, $\eta^2 = .00$.

Safe sex practices:

S2-H4: It was hypothesized that participants would rate the likelihood of using safe sex practices as occurring less often when alcohol was involved. Specifically, participants would rate the likelihood of using contraceptives as lower in the vignettes where alcohol was involved than in the vignettes when alcohol was not involved. This hypothesis was supported. The results revealed that there was a significant main effect for alcohol use on safe sex practices $F(1, 204) = 13.29$, $p = .00$, $\eta^2 = .06$, such that participants rated vignettes when alcohol was mentioned as having lower safe sex practices likelihood ($M = 7.05$) than when alcohol was not mentioned ($M = 8.32$).

S2-H5: It was hypothesized that participants would rate the likelihood of using safe sex practices as occurring less often when there was familiarity between partners. Specifically, participants would rate the likelihood of using contraceptives as lower in the vignettes where the partners knew each other than in the vignettes where the partners were strangers. The hypothesis was not supported. There was no main effect for partner type on safe sex practices $F(1, 204) = 1.63$, $p = .20$, $\eta^2 = .01$.

S2-H6: It was hypothesized that there would be an interaction between alcohol use and partner familiarity on likelihood of using safe sex practices. Specifically, participants would rate the likelihood of using safe sex practices highest in the vignette that did not involve alcohol and where the partners were strangers. Alcohol use would not affect ratings of likelihood of safe-sex practices between familiar partners. The hypothesis was not supported. There was no significant interaction between alcohol use

and partner familiarity on the likelihood of using safe sex practices $F(1, 204) = 3.2$, $p = .57$, $\eta^2 = .00$.

Discussion

The current project examined hookup culture and associated features. Specific elements examined included perceived peer and personal attitudes about hooking up, hookup frequency, alcohol use, partner familiarity, knowledge about STIs and safe sex practices. Two separate studies were conducted: Study 1 used self-report to explore perceived peer and personal attitudes of the hookup culture, personal hookup behavior and its associations with alcohol use and partner type, as well as knowledge of STIs. Study 2 examined hookup approval and perceived likelihood of using safe sex practices using a randomized experimental design with the following four scenarios: familiar partners without alcohol present, familiar partners with alcohol present, strangers without alcohol present, and strangers with alcohol present. To our knowledge, this is the first study to examine safe sex practices and knowledge of STIs using the lens of the hookup culture and to include an experimental component to minimize the effects of social desirability on individuals' reported attitudes.

Study 1

Hookup behavior was common. When collapsed across all forms of intimate contact, 82.8 % reported one or more hookups during the past six months. The most common hookup behavior reported was making out (80.3%), followed by touching/fondling (77.3%), then oral sex (65.6%), and sexual intercourse (51.5%). The majority of hookup encounters occurred between familiar partners, which is consistent with previous literature as students tend to hookup with friends or individuals they know (Glenn & Marquardt; Fielder & Carey, 2010; LaBrie et al., 2014; Lewis et al., 2013; Paul & Hayes, 2002; Vander Ven & Beck, 2009). Most, although not

all, occurred in the context of alcohol. About 81 % of reported hookups in the past 6 months involved alcohol; among those who indicated a hookup with someone they knew, 74.8% reported alcohol was involved; among those who reported a hookup with someone they just met, 94.3% reported alcohol was involved. These results are consistent with past findings (Bogle, 2007; Grello et al., 2006; LaBrie et al., 2014). Overall alcohol use was the norm as about 72% of the sample reported using alcohol, with average consumption being about 7.1 standard drinks per week. Binge episodes were lower than expected as participants reported, on average, 1 binge episode per week. Men reported more alcohol use than women. Men consumed more standard drinks per week, reported significantly higher rates of binge episodes, significantly higher maximum drinks consumed at one time and significantly more drinking days per week when compared to women. These gender differences are consistent with the literature (LaBrie et al., 2014; Vander Ven & Beck, 2009)

Although hookup behavior was common, consistent use of safe sex practices varied across type of hookup behavior and was often low. This was not surprising given prior results suggesting safe sex is not a common feature of hookups (Abbey et al., 2007; Corbin & Fromme, 2002; Scholly, Katz, Cole, & Heck, 2010). Among the current sample, only 12% of participants who reported engaging in oral sex during a hookup reported using protection; among these, 9% reported using protection when having oral sex with a familiar partner and 33% reported using protection when having oral sex with a stranger. However, condom use during sexual intercourse was more common. As noted, just over half (51%) of participants reported sexual intercourse during a hookup encounter. Among these, 83% of those who had intercourse with someone they knew used protection and 88% of those who had intercourse with a stranger used protection during their encounter. Overall, a wider range of safe sex practice was used when alcohol was

not involved. Results also indicated that knowledge about STIs was limited. The sample averaged 44% correct on the STI knowledge assessment. These results suggest that STI knowledge has not increased over the past two decades (Yacobi, 1999).

Personal attitudes and perception of peer attitudes. Robust differences emerged between personal and perceived peer attitudes about hookup culture and its subdomains. The current study found that participants endorsed more negative personal attitudes about the hookup culture compared to how they think their peers view the hookup culture. This was true for every domain assessed: hookup as sexual gratification; hookup as relationship possibility; hookup as harmless activity; hookup as way to have fun; hookup as method of coping; hookup as strategy to increase status and hookup excused by drinking. However, although personal and perceived views differed, personal attitudes still reflected general acceptance. The divergence between personal and perceived peer beliefs is not surprising, as past findings have shown that students tend to overestimate the extent to which their peers approve of or engage in various activities (Kenney et al., 2013; Lewis et al., 2013; Lewis et al., 2007).

Gender differences. As anticipated, men and women viewed the hookup culture differently. Overall, men held more positive personal views of hooking up and also perceived their peers as holding more positive attitudes than did women. Examination of the individual hookup domains indicated men were more likely to view hooking up as a possible avenue to start a relationship, as a way to have a good time, and as a way to increase their overall status more than did women. Although the results that men view hooking up as a means to have a good time and to increase their status with friends are both consistent with past findings (Campbell, 2008), the result that men, more than women, viewed hooking up as way to start a relationship was somewhat surprising. This is contrary to past findings showing that women are more likely than

men to view a hookup as a way to start a relationship (Owen et al., 2010). Prior findings may be reflective of societal gender stereotypes about women being more interested in entering a committed relationship than men. The current finding that men may desire a committed relationship more than women joins a body of literature indicating that men may accrue more benefits from being in a committed relationship than do women. For example, life satisfaction for men, but not women, is higher for married than for single individuals (Household, Income, Labor Dynamics in Australia [HILDA] Survey, 2017). Finally, both men and women reported significantly lower personal approval than perceived peer approval. Although present for both men and women in every domain, the difference between personal and perceived peer approval was generally greater for women than for men, meaning that women's perceived peer approval and personal approval were more divergent. This difference suggests that although men's social norms regarding the hookup culture are distorted, they are more accurate than those held by women. It is also consistent with the idea that societal standards of behavior may lead to more acceptance of hookup behavior by men than women (Uecker & Martinez, 2017).

Safe sex practices and alcohol use during hookups. In general, alcohol use appeared to fuel hookup behavior. Consuming more alcohol was associated with reporting more hookup behavior overall. This relation held for both known partners and strangers. Not surprisingly, those who drank more also reported more numerous instances of hookup behavior in the context of alcohol use. They also reported more instances of hooking up with strangers. This result is not surprising and is consistent with past findings. For example, past studies have found that when a hookup occurs between strangers, it is usually in the context of alcohol and often associated with more "serious" (i.e., sexual intercourse) forms of hookup behavior (LaBrie et al., 2014; Vander Ven & Beck, 2009).

The results associated with safe-sex practices were unexpected and offer some reasons for optimism and some reasons for pessimism. First, although it was anticipated that use of all safe sex practices would decline as alcohol consumption increased, this was not the case. Rather, those who consumed more alcohol were more likely to use protection during hookups that included intercourse with strangers. This suggests that those students who are most likely to engage in high-risk hookups have awareness of the risks associated with their hookup behavior and are taking some active steps to minimize it. Higher drinking rates were not associated with using protection when having intercourse with known partners but were associated with increased likelihood of having conversations about sexual history. Taken together, these results suggest that heavy alcohol use by itself does not confer increased risk of failure to practice at least some forms of safe sex.

The rate of safe sex practice when having intercourse with familiar partners was lower than when being intimate with strangers. This suggests that when partners know each other, they may not be as concerned about practicing safe sex as they believe the associated risks are lower. However, recent findings have suggested that when college students hook up with familiar partners or people that they know, they not only underestimate the chances of being exposed to an STI but also, importantly, may not feel skilled or competent in raising the issue of safe sex or enacting a safe sex behavior such as the proper use of a condom (Addoh, Sng, & Loprinzi, 2017). No relation emerged between knowledge of STIs and practicing safe sex. Although this finding needs to be viewed within the context of overall low levels of sexual health knowledge, it does suggest that educating students about STIs alone may not produce the desired behavioral change. These results are consistent with prior findings that knowledge is not related to personal

behavior (Weinstein et al., 2008) and many students do not feel they are at risk for STIs or unwanted pregnancies (Yacobi et al., 1999).

Study 2

Approval of hookup behavior was experimentally assessed in Study 2. This was done to minimize the influence of social desirability on reported hookup culture attitudes. It was predicted that hookup behavior would be rated as more acceptable when alcohol was involved. This was not supported. Participants reported significantly less approval of the hookup behavior in the vignettes that involved alcohol. This result is open to different interpretations. One is that changes in educational programming at colleges have been effective. In recent years most colleges across the U.S. have added programming about the dangers of using alcohol and engaging in sexual activity due to the increased risks of being sexually assaulted or victimized do so confers (Testa & Livingston, 2009). Data suggest that about 25% of women will be sexually assaulted by the time they leave college and in many instances these encounters involve alcohol (Garcia & Reiber, 2008). Messaging and safety campaigns may be changing college student attitudes about mixing alcohol and sexual encounters. Although another possible interpretation is that participants reported more disapproval of hookups that occurred in the context of alcohol because of social desirability factors –i.e., it was how they believed they *should* answer—this appears unlikely due to the study design. Participants were only exposed to one hookup scenario, thereby not highlighting the presence or absence of alcohol. Additionally, the focus of the study was further obscured by providing the hookup vignette as one of three depicting college students acting in ways open to various degrees of approval. The results are also consistent with the personal beliefs expressed by participants in the self-report portion. Specifically, participants generally disagreed with the statement "I personally think being drunk is a reason to hookup" (*M* = 2.0; 1 = *completely disagree;* 5 = *completely agree*). These results also suggest that self-

reported beliefs are reflective of true beliefs (not driven by social desirability) and perceived norms are not accurate as Study 1 participants reported the belief that their peers *did* think being drunk was a reason to hook up (M = 3.67).

Also contrary to expectations, approval of hookups was not related to partner type. It was hypothesized that participants would be more approving of hookups if there was familiarity between partners. However, no differences emerged for approval between hookups involving known partners those involving strangers. This may be due to the (false) normative belief that hooking up occurs between strangers or individuals who do not know each other well (Paul & Hayes, 2002; LaBrie et al., 2014). Alternately, hookup approval may be more of an individual difference factor—e.g., students may approve or disapprove of hookup behavior and it does not depend on who the hookup involves.

Results were mixed concerning hypotheses about utilization of safe sex practices. The current study found that participants reported less perceived likelihood of using safe sex practices when there was alcohol involved but no difference emerged regarding familiarity between partners. The first finding was expected based on past findings of low rates of practicing safe sex on college campuses coupled with the high rates of alcohol use (Abbey et al., 2007). The second finding was surprising as research has consistently demonstrated both that students tend to hookup with people they know and are less likely to use protection with people they know (Boone & Llefkowitz, 2004; Garcia & Reiber, 2008; Lambert et al., 2003). However, this finding may be explained by the (false) normative belief that most hookups occur with strangers. Further, this pattern was seen in the self-report portion of this study.

Limitations, Implications and Future Directions

There are several limitations to the current study worthy of consideration when interpreting the results. First, a limitation was using two separate samples, as this did not allow for examination of the relations between approval ratings on the vignettes and personal hookup behavior and alcohol use. The decision was made to not collect this information from those in the experimental study due to concerns that doing so would reveal the purpose of the study and increase socially-desirable responding. Second, for both studies the samples were predominantly White, middle-to-upper middle class, and heterosexual. Therefore, it is unclear how well the results can generalize to other college populations. Third, some of the scales displayed suboptimal reliability. Although this was addressed by using single items when possible, it does raise the possibility that the constructs of interest were not adequately measured.

Despite these limitations, the results of this study can guide future research, particularly when taking the results of the studies into joint consideration. Specifically, the current project found that personal beliefs with regard to hookup attitudes demonstrated moderately high overall approval of hookup culture; however, personal approval was lower than perceived peer approval. Further, participants were not as accepting of mixing drinking and hookup behavior as was predicted by previous literature and this result emerged in both parts of the study. As such, it appears justified to suggest that the self-reported attitudes, when viewed in the context of the experimental results, reflected participants' "real" view of the hookup culture. Programming on college campuses could build on these results to challenge the perceived norms that students hold and show how these are somewhat different from their personal views. Doing so could reduce subjective pressure to support or approve of the hookup culture. This approach has shown some

success with other problematic student behaviors, such as excessive alcohol use (Haines & Spear, 1996).

Lastly, and arguably most concerning, is that broad utilization of safe sex practices remains low among college students. The only safe sex practice employed by students in this study with any frequency was condom use during intercourse. Results from this study indicated that failure to use a variety of safe sex practices was not related to knowledge about STIs – although both were low. College campuses may be wise to increase programming in both areas even as researchers continue to seek better predictors of when and why students are most likely to use safe sex practices.

References

Abbey, A., Parkhill, M. R., Buck, P. O., & Saenz. (2007). Condom use with a casual partner: What distinguishes college students' use when intoxicated? *Psychology of Addictive Behaviors, 2007, 21*, 76 – 83. doi:10.1037/0893-164X.21.1.76

American College Health Association. (2015). Fall 2015 undergraduate student reference group executive summary. *National College Health Assessment.* Retrieved from http://www.acha-ncha.org.

American College Health Association. (2017). Spring 2017 undergraduate student reference group executive summary. *National College Health Assessment.* Retrieved from http://www.acha-ncha.org.

Aubrey, J. A., & Smith S. E. (2013). Development and validation of the endorsement of the Hookup Culture Index. *Journal of Sex Research, 50*(5), 435 – 448. doi:10.1080/00224499.2011.637246

Bogle, K. (2007). The shift from dating to hooking up: What scholars have missed. *Sociology Compass, 2*, 775-788. doi: 10.1111/j.1751-9020.2007.00031.x

Bogle, K. (2008). *Hooking up: Sex, dating, and relationships on campus*. New York, NY: New York University Press.

Boone, T.L. & Llefkowitz, E.S. (2008). Safer sex and the health belief model. *Journal of Psychology & Human Sexuality, 16*(1), 15-68. doi: 10.1300/J056v16n01_04

Centers for Disease Control and Prevention. (2016). *Sexually Transmitted Disease Surveillance, 2014*. Atlanta, Georgia: U.S. Department of Health and Human Services.

Colby, S. M., Colby, J. J., & Raymond, G.A. (2009). College versus the real world: Student perceptions and implications for understanding heavy drinking among college students. *Addictive Behaviors, 34,* 17 – 27. doi:10.1016/j.addbeh.2008.07.023

Colby, S. M., Swanton, D. N., & Colby, J. J. (2012). College students' evaluations of heavy drinking: The influence of gender, age, and college students. *Journal of College Student Development, 53*(6), 797 – 809. doi:10.1353/csd.2012.0080

Cooper, M. L. (2002). Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. *Journal of Studies on Alcohol* (Suppl. 14), 101–117. doi: 10.1080/07448481003621718

Corbin, W. R., & Fromme, K. (2002). Alcohol use and serial monogamy as risks for sexually transmitted diseases in young adults. *Health Psychology, 21*(3), 299 – 236. doi: 10.1037/0278-6133.21.3.229

Downing-Matibag, T.M. & Geisinger, B. (2009). Hooking up and sexual risk taking among college students: A health belief model perspective. *Qualitative Health Research, 19*(9), 196-209/ doi: 10.1177/1049732309344206.

Eshbaugh, E. M., & Gute, G. (2008). Hookups and sexual regret among college women. *Journal of Social Psychology, 148,* 77-89. doi: 10.3200/SOCP.148.1.77-90

Fielder, R. L., & Carey, M. P. (2010). Predictors and consequences of sexual "hookups" among college students: A short-term prospective study. *Archives of Sexual Behavior, 39*(5), 1105 - 1119. doi: 10.1007/s10508-008-9448-4

Fromme, K., Katz, E.C., & Rivet, K (1997). Outcome expectancies and risk-taking behavior. *Cognitive Therapy and Research, 21,* 421-442. doi:10.1023/A:1021932326716

Garcia, J.R. & Reiber, C. (2008). Hook-up behavior A biopsychosocial perspective. *Journal of Social, Evolutionary, and Cultural Psychology, 3*(11), 192-208. doi: 10.1037/h0099345

Garcia, J.R., Reiber, C., Massey, S.G., & Merriwether, A.M. (2012). Sexual hookup culture: A review. *Review of General Psychology, 16*(2), 161-176. doi: 10.1037/a0027911

Glenn, N., & Marquardt, E. (2001). *Hooking up, hanging out, and hoping for Mr. right: College women on dating and mating today*. New York, NY: Institute for American Values.

Grello, C. M., Welsh, D. P., & Harper, M. S. (2006). No strings attached: The nature of casual sex in college students. *Journal of Sex Research, 43*, 255–267. doi:10.1080/00224490609552324

Haines, M., & Spear, S. F. (1996). Changing the perception of the norm: A strategy to decrease binge drinking among college students. *Journal of American College Health, 45*, 134-140. doi:10.1080/07448481.1996.9936873

Household, Income, Labor Dynamics in Australia (HILDA) Survey. (2017). HILDA fact sheet. *Department of Social Services Longtitudinal Surveys Research Archive.* Retrieved from https://www.dss.gov.au/national-centre-for-longitudinal-data/household-income-and-labour-dynamics-in-australia-hilda-fact-sheet

Kenney, S. R., Lac, A., Hummer, J. F., & LaBrie, J. W. (2014). Development and validation of the Hookup Motives Questionnaire (HMQ). *Psychological Assessment, 26*(4), 1127 – 1137. doi:10.1037/a0037131

Kenney, S. R., Thadani, V., Ghaidarov, T., & LaBrie, J. W. (2013) First-year college women's motivation for hooking up: A mixed-methods examination of normative peer perception and personal hookup participation. *International Journal of Sexual Health, 25*(3), 212 – 224. doi:10.1080/19317611.2013.786010

Lambert, T. A., Kahn, A. S., & Apple, K. J. (2003). Pluralistic ignorance and hooking up. *Journal of Sexual Research, 40*(2), 129 – 133. doi:10.1080/00224490309552174

Larimer, M. R., Turnder, A. P., Mallett, K. A., & Geisner, I. M. (2004). Predicting drinking behavior and alcohol-related problems among fraternity and sorority members: Examining the role of descriptive and injunctive norms. *Psychology of Addictive Behaviors, 18*(3), 203 – 212. doi:10.1037/0893-164X.18.3.203

LaBrie, J. W., Hummer, J. F., Ghaidarov, T. M., Lac, A., & Kenney, S. R. (2014). Hooking up in the college context: The even-level effects of alcohol use and partner familiarity on hookup behaviors and contentment. *Journal of Sex Research, 51,* 62 – 73. doi:10.1080/00224499.2012.714010

Lewis, M. A., Atkins, D. C., Blayney, J. A., Dent, D. V., & Kaysen, D. L. (2013). What is hooking up? Examining definitions of hooking up in relation to behavior and normative perceptions. *Journal of Sex Research, 50*(8), 757 – 766. doi:10.1080/00224499.2012.706333

Lewis, M. A., Lee, C. M., Patrick, M. E., & Fossos, N. (2007). Gender-specific normative misperceptions of risky sexual behavior and alcohol-related risky sexual behavior. *Sex Roles, 57,* 91 – 90. doi:0.1007/s11199-007-9218-0

Monto, M. A., & Carey, A. G. (2014). A new standard of sexual behavior? Are claims associated with the "Hookup Culture" supported by general social survey data? *Journal of Sex Research, 51*(6), 605 – 615. doi: 10.1080/00224499.2014.906031

Moore, E., Brow, S., & Olmstead, S. (2016, April). *Relationship familiarity and alcohol use influence beliefs about hooking up.* Paper presented at the 62nd Annual Meeting of the Southeastern Psychological Association, New Orleans, LA.

Online College Social Life Survey. (2011). Hookups and Sexual History. *Online College Social Life Survey.* Retrieved from http://www.nyu.edu/projects/england/ocsls/

Osbourne, J.W. (2002). Data transformation and normality. *Practical Assessment, Research & Evaluation, 8*(6). Retrieved from http://pareonline.net/getvn.asp?v=8&n=6

Owen, J. J., Rhoades, G. K., Stanley, S. M., & Fincham, F. D. (2010). ‘‘Hooking up’’ among college students: Demographic and psychosocial correlates. *Archives of Sexual Behavior, 39*, 653–663. doi: 10.1007/s10508-008-9414-1

Paul, E. L., & Hayes, K. A. (2002). The causalities of ‘‘casual’’ sex: A qualitative exploration of the phenomenology of college students’ hookups. *Journal of Social and Personal Relationships, 19*, 639–661. doi:10.1177/0265407502195006

Paul, E. L., McManus, B., & Hayes, A. (2000). “Hookups”: Characteristics and correlates of college students’ spontaneous and anonymous sexual experiences. *Journal of Sex Research, 37*, 76 – 88. doi:10.1080/00224490009552023

Scott-Sheldon, L.A., Carey, M.P., & Carey, K.B. (2010). Alcohol and risky sexual behavior among heavy drinking college students. *AIDS Behavior, 14*(4), 845-853. doi: 10.1007/s10461-008-9426-9

Scholly, K. S., Katz, A. R., Cole, D., & Heck, R. H. (2010). Factors associated with adverse sexual outcomes among college students. *American Journal of Health Studies*, *25*(4), 176 – 185. doi: 10.4081/hpr.2014.1457

Stupiansky, N., Reece, M., Middlestadt, S., Finn, P., & Sherwood-Laughlin, C. (2009). The role of sexual compulsivity in casual sexual partnerships among college women. *Sexual Addiction and Compulsivity, 16*(3), 241 – 252. doi: 10.1080/10720160903202760.

Tabachnick, B. G., & Fidell, L. S. (2007). Using Multivariate Statistics (5th ed.). Boston, MA:

Allyn & Bacon/Pearson Education.

Vail-Smith, K., Whetstone, L., & Knox, D. (2010). The illusion of safety in "monogamous" undergraduate relationships. *American Journal of Health Behavior, 34*, 12-20. doi:10.5993/AJHB.34.1.2

Vander Ven, T., & Beck, J. (2009). Getting drunk and hooking up: An exploratory study of the relationship between alcohol intoxication and casual coupling in a university sample. *Sociological Spectrum, 29*(5), 626 – 648. doi:10.1080/02732170903051417

Vrangalova, Z. (2015). Does casual sex harm college students' well-being? A longitudinal investigation of the role of motivation. *Archives of Sexual Behavior, 44*, 945 – 959. doi:10.1007/s10508-013-0255-1

Wardell, J. D., & Read, J. P. (2013). Alcohol expectancies, perceived norms, drinking behavior among college students: Examining the reciprocal determinism hypothesis. *Psychology of Addictive Behaviors, 27I*, 191 – 196. doi:10.1037/a0030653

Weinstein, R. B., Walsh, J. L., & Ward, L. M. (2008). Testing a new measure of sexual health knowledge and its connections to students' sex education, communication, confidence, and condom use. *International Journal of Sexual Health, 20*(3), 212 – 221. doi:10.1080/19317610802240279

Weinstock, H., Berman, S.,& Cates,W., Jr. (2004). Sexually transmitted diseases in American youth: Incidence and prevalence estimates, 2000. *Perspectives on Sexual and Reproductive Health, 36*, 6–10. doi:10.1363/3600604

Yacobi, E., Tennant, C., Ferrante, J., Pal, N., & Roetzheim, R. (1999) University students' knowledge and awareness of HPV. *Preventative Medicine, 28*(6), 535 – 541. doi:10.1006/pmed.1999.0486

Uecker, J.E. & Martinez, B.C. (2017). When and why women regret sex in hookups more than men do: An analyses of the online college social life survey. *The Sociological Quarterly, 58*(3), 470-494. doi: 10.1080/00380253.2017.1331716

Table 1

Demographic Information

	Study 1	Study 2
Total (*N)*	198	208
Men (*n)*	74	75
Women (*n)*	123	133
Age *M* (SD)	19.91 (1.53)	19.93 (1.12)
GPA *M* (SD)	3.32 (0.40)	3.31 (0.44)
Race/Ethnicity		
Caucasian	148 (74.5%)	160 (76.9%)
African-American	17 (8.5%)	22 (10.6%)
Latino or Hispanic	9 (5.0%)	7 (4.8%)
Bi-racial	10 (5.0%)	10 (3.4%)
Asian or Pacific Islander	5 (2.5%)	5 (2.4%)
Other	7 (3.5%)	4 (2.0%)
Sexual Orientation		
Heterosexual	179 (90.0%)	194 (94.2%)
Bisexual	11 (6.0%)	8 (3.8%)
Gay	1 (0.5%)	2 (1.0%)
Lesbian	3 (1.5%)	1 (0.5%)
Other	4 (2.0%)	1 (0.5%)

Table 1 Cont.

Religious Affiliation		
Catholic	100 (50.5%)	99 (47.6%)
Christian	59 (29.8%)	70 (33.7%)
Islamic	1 (0.5%)	2 (1.0%)
Jewish	0 (0.0%)	0 (0.0%)
Atheist	6 (3.0%)	4 (1.9%)
Agnostic	4 (2.0%)	6 (2.9%)
None	21 (10.6%)	22 (10.6%)
Other	7 (3.5%)	5 (2.4%)
Year in School		
First year	47 (23.5%)	51 (24.5%)
Sophomore	69 (35.0%)	61 (29.3%)
Junior	54 (27.5%)	69 (33.2%)
Senior	26 (13.0%)	27 (13.0%)
Living Situation		
Residential Hall	107 (53.5%)	106 (51.0%)
Living Off-campus	63 (32.0%)	74 (36.0%)
Relationship Status		
Single	119 (60.4%)	121 (58.2%)
Dating (Non-exclusively)	6 (3.0%)	6 (2.9%)
Dating (Exclusively)	71 (36.0%)	8 (38.5%

Table 1 Cont.

Relationship Length		
< 6 months	21 (26.9%)	24 (25.5%)
≥ 6 months	57 (71.8%)	69 (74.5%)
Sexual Relationships		
Exclusively Heterosexual	173 (87.9%)	183 (88.0%)
Equally Hetero/Homo-sexual	5 (2.5%)	3 (1.4%)
Equally Homosexual	2 (1.0%)	2 (1.0%)

Table 2

Descriptive Statistics for Alcohol Use

Variable	Total Sample *N* = 198 *M (SD)*	Women *n* = 123 *M (SD)*	Men *n* = 74 *M (SD)*	*t* value	*p* value*
Drinking days/Week	1.3 (1.28)	1.23 (1.25)	1.46 (1.35)	3.23	.001
Standard Drinks/Week	7.12 (8.71)	5.16 (6.27)	10.46 (10.97)	-8.69	<.001
Most drinks consumed at one time	7.70 (6.59)	6.25 (5.71)	10.19 (7.25)	-12.61	<.001
Number of binge episodes/Week	1.44 (.86)	1.43 (1.06)	1.46 (.72)	2.65	<.01

Note: * test for difference between men and women

Table 3

Frequency of Partner Type and Alcohol Status for Each Hookup Behavior

Behavior	Familiar Partner		Stranger	
	Alcohol *n* (%)	No Alcohol *n* (%)	Alcohol *n* (%)	No Alcohol *n* (%)
Make Out	115 (76.2%)	36 (23.8%)	64 (95.5%)	3 (4.47%)
Touching/Fondling	97 (66.4%)	49 (33.5%)	41 (89.1%)	5 (10.8%)
Oral Sex	80 (65.0%)	43 (34.9%)	24 (77.4%)	7 (22.6%)
Sexual Intercourse	62 (64.6%)	34 (35.4%)	21 (84.0%)	4 (16.0%)
Total Hookup Scale	119 (74.8%)	40 (25.2%)	66 (94.3%)	4 (5.71%)

Note: Hookup behavior is defined as least one encounter in the past 6 months

Table 4

Type of Hookup Behavior for Men and Women who Reported Hooking Up

	Men *n* (%)	Women *n* (%)	χ^2	*p* value*
Familiar Partner/Alcohol	44 (59.5%)	75 (61.0%)	20.51	.99
Familiar Partner/No Alcohol	17 (27.8%)	22 (22.6%)	20.51	.99
Familiar Partner/Total	61 (82.4%)	97 (78.9%)	32.57	.93
Stranger Alcohol	33 (48.6%)	33 (26.8%)	19.58	.61
Stranger/No Alcohol	3 (2.43%)	1 (0.08%)	19.58	.61
Stranger/Total	36 (48.6%)	34 (27.6%)	29.92	.18

Note: * test for difference between men and women; hookup behavior collapsed across all types; denominator = number within category (men/women) who reported at least one hookup encounter in past 6 months

Table 5

Frequency of Using Safe Sex Practices by Hookup Behavior and Partner Type

Safe Sex Practice:	Familiar Partner		Stranger	
	Alcohol	No Alcohol	Alcohol	No Alcohol
Protection during oral sex	6 (0.07%)	5 (11.6%)	5 (20.8%)	2 (28.6%)
Protection during sexual intercourse	47 (75.8%)	33 (97.1%)	18 (85.7%)	4(100%)
Conversation with partner about sexual history	37 (26.1%)	93 (77.5%)	18 (40.0%)	14 (100.0%)

Note: Protection defined as using condoms or other barrier; denominator = total number of participants who reported specified hookup behavior

Table 6

Frequency of Safe Sex Practices for Men and Women within Hookup Behavior Categories

Safe Sex Practice:	Familiar Partner		Stranger	
	Alcohol *n* (%)	No Alcohol *n* (%)	Alcohol *n* (%)	No Alcohol *n* (%)
Protection during oral sex				
Men	2 (0.06%)	1 (0.06%)	3 (0.02%)	1 (0.25%)
Women	4 (0.08%)	4 (16.0%)	2 (22.2%)	0 (0.00%)
Protection during sexual intercourse				
Men	17 (68.0%)	11 (100.0%)	10 (1.00%)	4 (75.0%)
Women	30 (81.1%)	21 (95.5%)	8 (72.7%)	1 (100.0%)
Conversation with partner about sexual history				
Men	20 (36.3%)	24 (85.7%)	11 (33.3%)	7 (100.0%)
Women	17 (19.5%)	38 (80.8%)	7 (15.0%)	7 (70.0%)

Note: Protection defined as using condoms or other barrier; denominator = frequency of men and women who reported specified hookup behavior

Table 7

Descriptive Statistics for Hookup Domains

Variable	Sexual *M* *(SD)*	Relationship *M* *(SD)*	Coping *M* *(SD)*	Harmless *M* *(SD)*	Fun *M* *(SD)*	Status *M* *(SD)*	Drinking *M* *(SD)*
Personal Approval	13.19 (3.41)	8.62 (3.61)	11.75 (3.97)	11.12 (3.84)	14.07 (3.21)	8.83 (3.74)	10.35 (3.45)
Perceived Peer Approval	15.32 (2.54)	11.26 (2.92)	14.28 (2.87)	15.18 (02.0)	16.37 (1.87)	12.04 (3.15)	14.83 (8.84)

Note: Values can range from 4 – 20; higher scores reflect more approval.

Table 8

Correlations of Exploratory Analyses

	P:O (FP)	P:O (FP/A)	P: O (SP)	P: O (SP/A)	P:IC (FP)	P:IC (FP/A)	P:IC (SP)	P:IC (SP/A)	C: (FP)	C: (FP/A)	C: (SP)	C: (SP/A)	HF: (FP)	HF: (FP/A)	HF: (SP)	HF: (SP/A)	#SD	TBE	STIK	Gen
P:O (FP)	1	.46 [b]	.24 [b]	.19 [b]	.10	.04	.03	.05	.03	.03	-.02	-.01	.16 [a]	.03	-.01	-.01	.03	.03	-.02	.05
P:O (FP/A)	--	1	.81 [b]	.70 [b]	.05	.09	.25 [b]	.29 [b]	.00	.14	.05	.12	.03	.12	.07	.13	.11	.11	-.14	-.02
P: O (SP)	--	--	1	.86 [b]	.02	.08	.33 [b]	.37 [b]	.02	.16 [a]	.09	17 [a]	-.01	.08	.13	.20 [b]	.11	.06	-.18 [a]	-.03
P: O (SP/A)	--	--	--	1	-.02	.05	.37 [b]	.43 [b]	.05	.12	.63	.25 [b]	-.01	.03	.19 [b]	.25 [b]	.10	.09	-.08	-.09
P:IC (FP)	--	--	--	--	1	.74 [b]	.12	.05	.17 [a]	.02	-.02	-.09	.73 [b]	.49 [b]	.07	-.05	.01	-.03	.06	.09
P: IC (FP/A)	--	--	--	--	--	1	.13	.19 [b]	-.01	.05	-.05	-.01	.52 [b]	.66 [b]	.11	.10	.14	.04	-.02	.42
P: IC (SP)	--	--	--	--	--	--	1	.89 [b]	.07	-.03	.24 [b]	.17 [a]	.06	.07	.76 [b]	.66 [b]	.20 [b]	.19 [b]	.06	-.19 [b]
P: IC (SP/A)	--	--	--	--	--	--	--	1	.01	.01	.17 [b]	.21 [b]	.01	.09	.66 [b]	.71 [b]	.19 [b]	.21 [b]	.01	-.16 [b]
C: (FP)	--	--	--	--	--	--	--	--	1	.43 [b]	.46 [a]	.23 [b]	.21 [b]	.01	.07	-.05	-.06	-.03	.11	-.15 [a]
C: (FP/A)	--	--	--	--	--	--	--	--	--	1	.35 [b]	.53 [b]	.04	.21 [b]	.03	.06	.18 [b]	.08	.02	-.06
C: (SP)	--	--	--	--	--	--	--	--	--	--	1	.67 [b]	-.07	-.06	.33 [b]	.30 [b]	-.11	.06	-.11	-.07
C: (SP/A)	--	--	--	--	--	--	--	--	--	--	--	1	-.07	.04	21 [b]	.28 [b]	.03	.14 [a]	-.02	-.15 [a]
HF: (FP)	--	--	--	--	--	--	--	--	--	--	--	--	1	.64 [b]	.09	-.02	.07	-.01	.00	-.11
HF: (FP/A)	--	--	--	--	--	--	--	--	--	--	--	--	--	1	.16 [b]	.86 [b]	.37 [b]	.12	.06	.07
HF: (SP)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	.18 [a]	.24 [b]	.19 [b]	.10	.17 [b]
HF: (SP/A)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	.31 [b]	.25 [b]	.06	-.13

Table 8 Cont.

#SD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	.07	-.09	-.29 [b]
TBE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	.33	-.28 [b]
STIK	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	-.02
Gen	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1

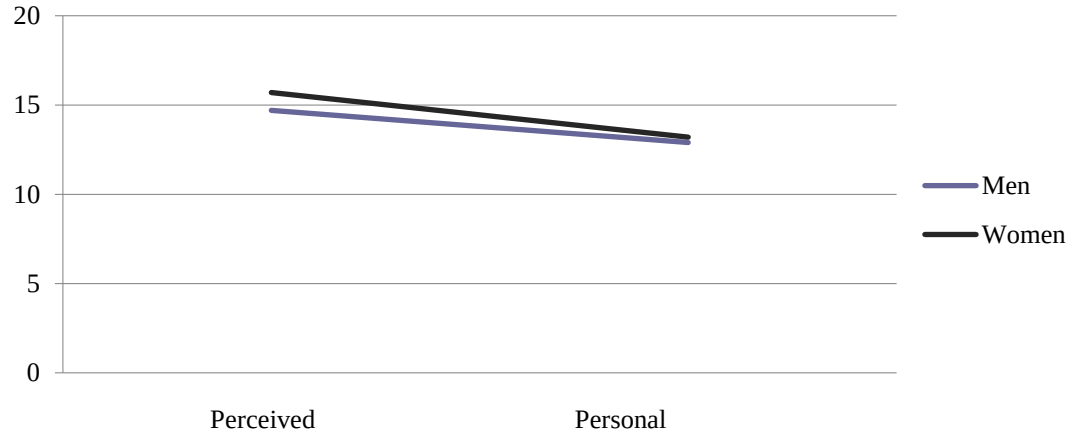
Note: (FP) = Familiar partner; (FP/A) = Familiar partner/Alcohol present; (SP) = Stranger partner; (SP/A) = stranger partner/alcohol present; P:O = Protection during oral sex; P:IC = Protection during sexual intercourse; C = Conversation about safe sex practices and sexual history; HF = Hookup frequency (i.e. number of hookups in past six months) #SD = Number of standard drinks in the past two weeks; TBE = Total binge episodes in past 2weeks; STIK = Sexually Transmitted Infections knowledge score from STDKQ; Gen = Gender.
Values highlighted were used to test the exploratory hypotheses.
[a] = $p < .05$, [b] = $p < .01$

Table 9

Descriptive Statistics of Hookup Approval and Safe Sex Practices by Hookup Vignette

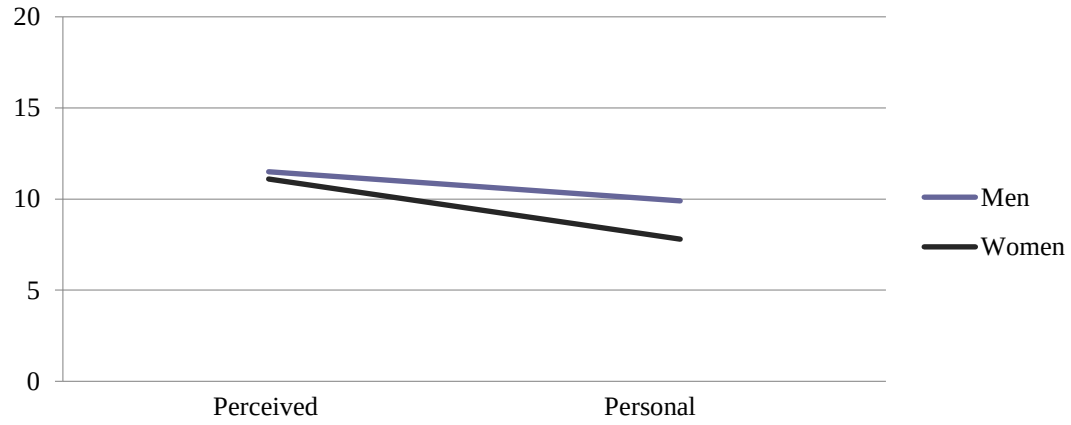
Variable	Familiar		Stranger	
	Alcohol *M(SD)*	No Alcohol *M(SD)*	Alcohol *M(SD)*	No Alcohol *M(SD)*
Hookup Approval	3.29 (1.04)	3.75 (0.95)	3.39 (1.39)	3.76 (0.86)
Safe Sex Practices	6.92 (0.35)	8.00 (3.5)	7.17 (2.94)	8.65 (2.44)

Figure 1. Gender Differences between Personal and Perceived Hookup Sexual Attitudes



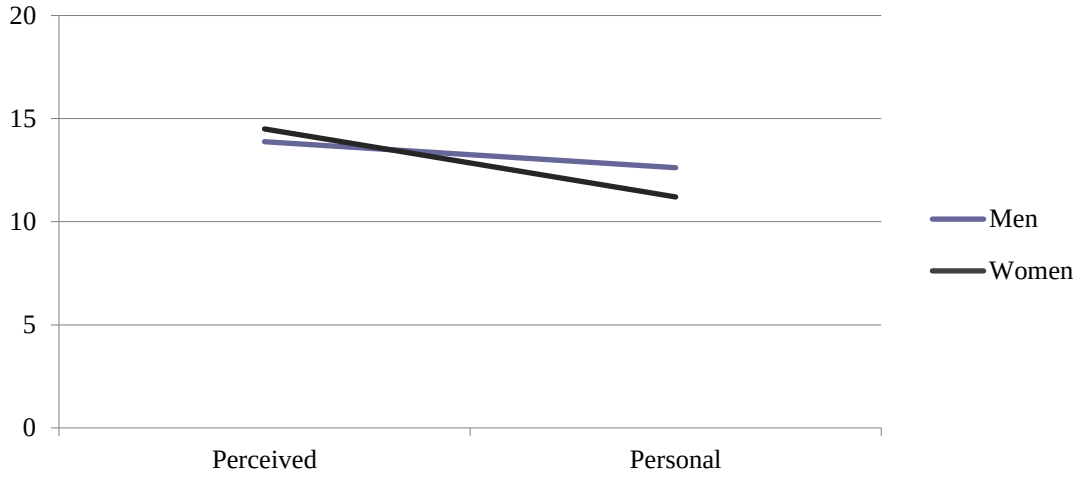
Note: Interaction not significant, $p = .19$

Figure 2. Gender Differences Between Personal and Perceived Hookup Relationship Attitudes



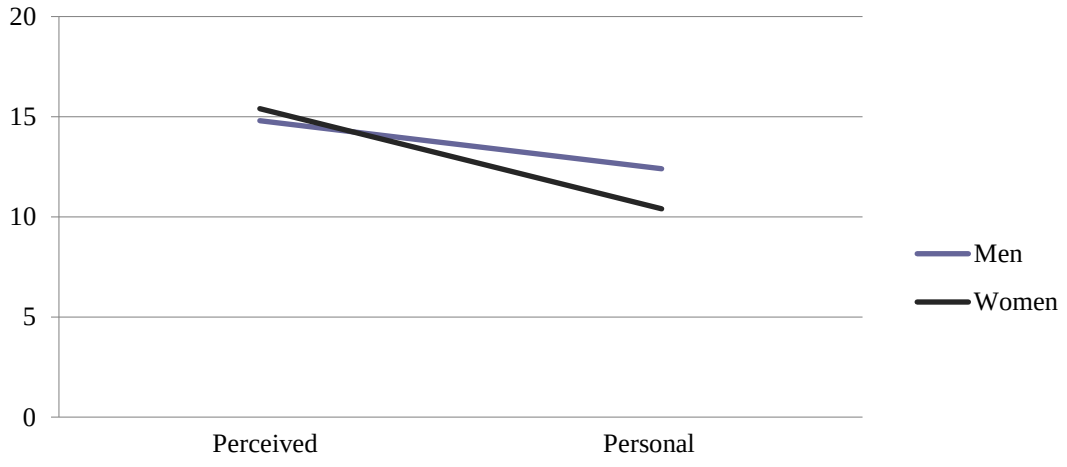
Note: Interaction significant, $p = .001$

Figure 3. Gender Differences Between Personal and Perceived Hookup Coping Attitudes



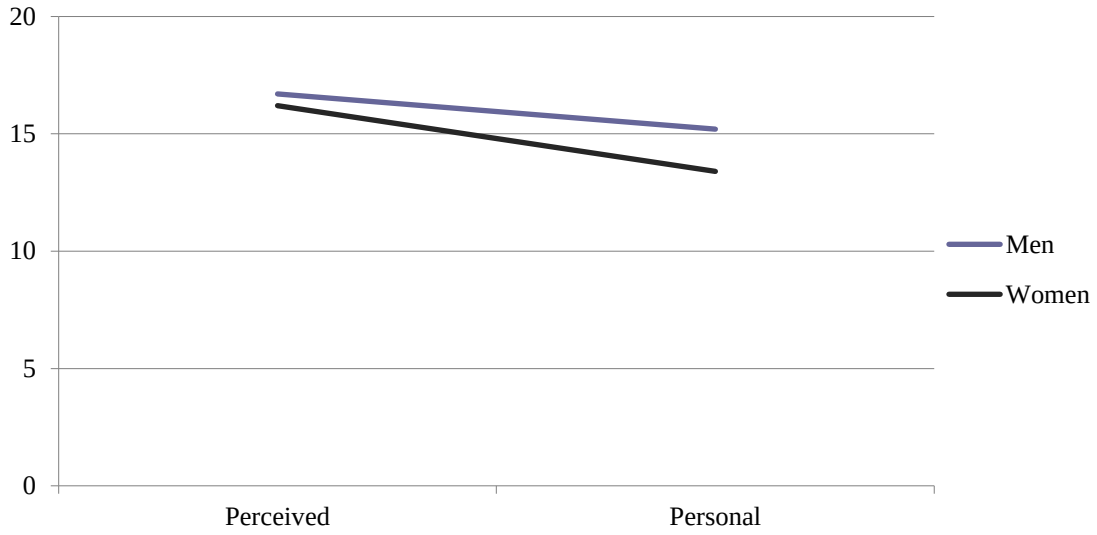
Note: Interaction significant, $p < .001$

Figure 4. Gender Differences Between Personal and Perceived Hookup Harmless Attitudes



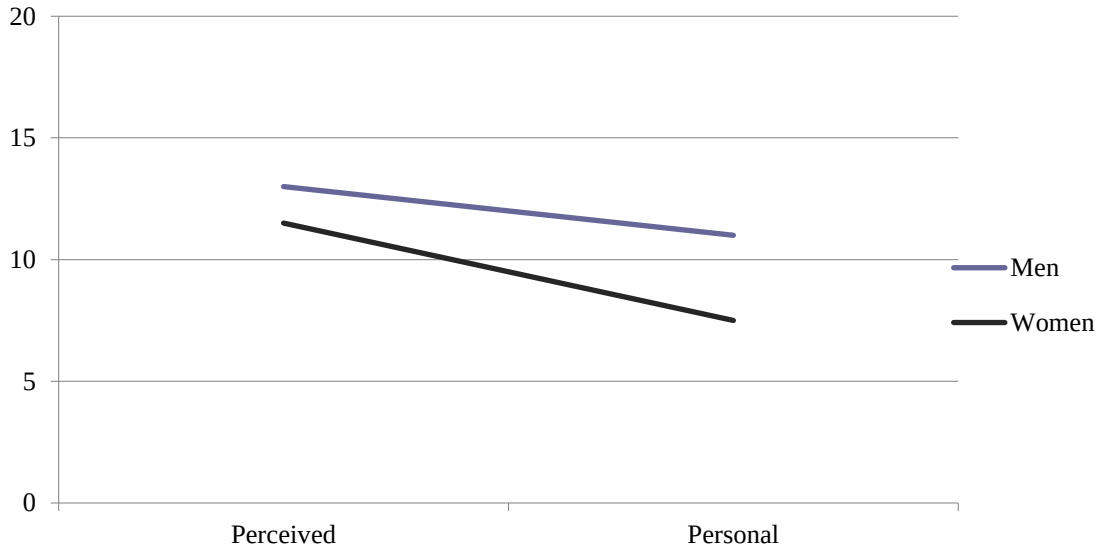
Note: Interaction significant, $p < .001$

Figure 5. Gender Differences Between Personal and Perceived Hookup Fun Attitudes



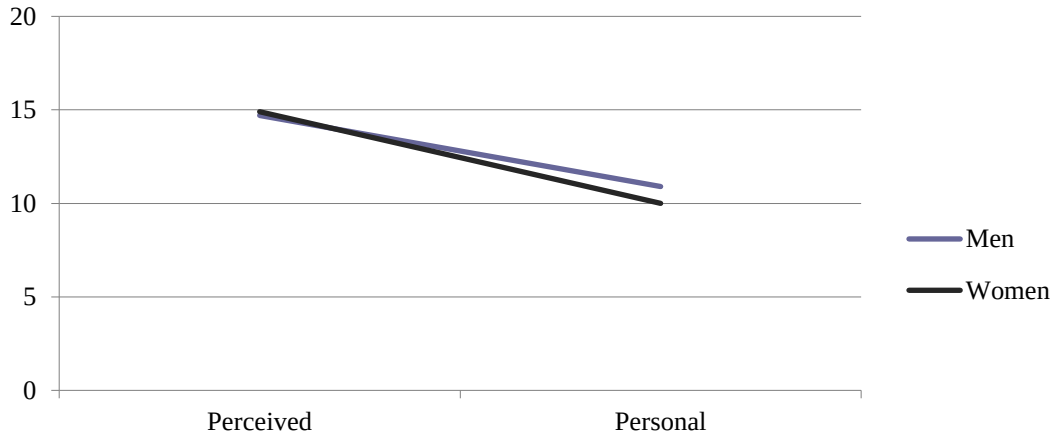
Note: Interaction significant, $p = .002$

Figure 6. Gender Differences Between Personal and Perceived Hookup Status Attitudes



Note: Interaction significant, $p < .001$

Figure 7. Gender Differences Between Personal and Perceived Hookup Drinking Attitudes



Note: Interaction not significant, $p = .01$

Appendix A

Table 10

Randomization Effectiveness: Continuous Demographic Variables by Condition

	Familiar		Stranger		Total
	Alcohol *M(SD)*	No Alcohol *M(SD)*	Alcohol *M(SD)*	No Alcohol *M(SD)*	*M(SD)*
Age	20.04 (1.04)	19.69(1.26)	19.98 (.97)	20.02 (1.18)	19.93 (1.12)
GPA	3.27 (.44)	3.29 (.42)	3.36 (.47)	3.30 (.44)	3.31 (.44)
Length of Relationship	.69 (1.14)	.88 (1.33)	.66 (1.21)	.39 (.67)	.65 (1.12)

Table 11

Randomization Effectiveness: Proportions of Categorical Demographic Variables by Condition

	Familiar		Stranger		Total
	Alcohol *n* (%)	No Alcohol *n* (%)	Alcohol *n* (%)	No Alcohol *n* (%)	*n* (%)
Gender:					
Male	22 (42.3%)	15 (28.8%)	22 (42.3%)	17 (32.6%)	74 (35.6%)
Female	30 (57.7%)	37 (71.2%)	30 (57.7%)	35 (67.3%)	133 (63.9%)
Race/Ethnicity:					
Caucasian	41 (78.8%)	40 (76.9%)	40 (76.9%)	38 (73.1%)	160 (76.9%)
African-American	3 (5.76%)	5 (9.62%)	7 (13.5%)	7 (13.5%)	22 (10.6%)
Latino/Hispanic	1 (1.92%)	2 (3.84%)	2 (3.84%)	2 (3.84%)	7 (3.36%)
Asian	0 (0.00%)	3 (5.76%)	1 (1.92%)	1 (1.92%)	5 (2.40%)
Bi-racial	5 (9.62%)	2 (3.84%)	1 (1.92%)	2 (3.84%)	10 (20.8%)
Other	2 (3.84%)	0 (0.00%)	1 (1.92%)	1 (1.92%)	4 (1.92%)
Relationship Status:			.		.
Single	27 (51.9%)	29 (55.7%)	.29 (55.7%)	36 (62.9%)	12 (58.2%)
Dating (Not Exclusive)	2 (3.84%)	0 (0.00%)	3 (5.76%)	1 (1.92%)	6 (2.88%)
Dating (Exclusive)	22 (42.3%)	23 (44.2%)	20 (38.5%)	15 (28.8%)	80 (38.5%)
Engaged	1 (1.92%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (0.48%)

Table 11 Cont.

Sexual Orientation:					
Heterosexual	50 (96.2%)	46 (88.5%)	49 (94.2%)	51 (98.1%)	196 (94.2%)
Bisexual	1 (1.92%)	5 (9.62%)	0 (0.00%)	1 (1.92%)	8 (3.84%)
Gay	1 (1.92%)	1 (1.92%)	1 (1.92%)	0 (0.00%)	2 (0.96%)
Lesbian	0 (0.00%)	0 (0.00%)	1 (1.92%)	0 (0.00%)	1 (0.48%)
Other	0 (0.00%)	0 (0.00%)	1 (1.92%)	0 (0.00%)	1 (0.48%)

Appendix B

January 30, 2017

Courtney Wineland

Dear Ms. Wineland

The IRB has completed the review of your protocol *#16-053, An Exploration of Hookup Culture, Alcohol Use, and Sexual Health among College Students* using expedited review procedures. We appreciate your thorough treatment of the issues raised and your timely response. Your study is approved in the Expedited category under Federal Regulation 45CFR46.

Approval expires January 30, 2018. A progress report, available at http://www.xavier.edu/irb/forms.cfm, is due by that date. If the IRB has not received a progress report from you before MIDNIGHT on the study's expiration date, we will AUTOMATICALLY set your study's status to "Closed". **No further data collection is allowed at that point, and if you wish to re-commence data collection, you will be required to submit a new application, along with all relevant materials, to our office.**

Although we will endeavor to send you a reminder, it is **your responsibility** as the researcher to ensure that your progress report and any request for an extension of data collection is submitted to our office before your approval expires.

If you wish to modify your study, including any changes to the approved Informed Consent form, it will be necessary to obtain IRB approval prior to implementing the modification. If any adverse events occur, please notify the IRB immediately.

If you have any questions, please contact the IRB office at 745-2870. We wish you success with your research!

Sincerely,

Morell E. Mullins, Jr., Ph.D.

Summary

Title: Hookup Culture, Alcohol Use, and Sexual Health among College Students

Problem: Sexual behavior is highly prevalent among college students with about 50% of college students reporting sexual intercourse in a national survey (ACHA, 2017). Although sexually intimate behavior is not new among college students, the words used to describe it have changed in recent years from *casual sex* to *hookup*. The term *hookup* refers to engaging in any of a range of sexual activity, from kissing to sexual intercourse, with someone with whom you do not have a committed relationship (Bogle, 2007; Glenn & Marquardt, 2001; Grello et al., 2006; LaBrie et al., 2014; Paul & Hayes, 2002). Investigations assessing the frequency of self-reported hookups—in contrast to specified sexual activities—have found rates are as high as 77 to 85% (Glenn & Marquardt, 2001; Lambert et al., 2003; Paul et al., 2000). Much of hookup behavior appears to occur in the context of alcohol use. However, results remain mixed about how much the hookup culture is actually accepted and approved by college students. Some studies have found that hookups are accepted and may have positive effects and others have documented negative outcomes associated with hooking up (Campbell, 2008; Vrangalova, 2015). Little formal study has been done on the consistency or differences between perceived peer attitudes and personal attitudes, and how these may vary across men and women. Additional concerns on college campuses that intersect with the hookup culture are limited use of safe sex practices and low overall knowledge in regards to sexual health (ACHA, 2017; CDC, 2016; Cooper, 2002; Weinstock et al., 2004). The primary goal of the current study was to expand the hookup culture literature by assessing factors known to be associated with hooking up and exploring how these factors are related to views of the hookup culture as a whole. Of particular interest was exploring whether student views of the hookup culture and hookup behavior are generally

positive or if this is a widely held misperception, particularly in regards to alcohol use. Also of interest was whether and how knowledge of sexual health affects hookup perceptions and behavior.

Method: The current project used two samples: Study 1 (N = 198) and Study 2 (N = 208). Both samples' participants were predominantly Caucasian (Study 1 = 75%; Study 2 = 77%), female (Study 1 = 62%; Study 2 = 64%), and heterosexual (Study 1 = 90%; Study 2 = 94%). Study 1 and Study 2 used two separate samples to minimize social desirability response bias in the experimental condition. Study 1 used self-report data to assess social norms regarding perceived peer attitudes and personal attitudes, as well as frequency of personal hookup and safe sex practice behaviors, STI (Sexually Transmitted Infections) knowledge, and alcohol use. Study 2 implemented an experimental design with four randomized conditions (familiar partner/alcohol present; familiar partner/no alcohol; stranger partner /alcohol present; and stranger partner /no alcohol) to assess acceptability of hookup behavior and perceived likelihood of safe sex practices by vignette protagonists.

Findings: Study 1: A 2x7 mixed model MANOVA revealed significant main effects for the within subjects factor perception (personal vs peer) $F(7, 191) = 59.29$, $p < .007$, $\eta^2 = .98$); the between subjects factor gender (men vs woman) $F(7, 189) = 10.33$, $p < .007$, $\eta^2 = .27$; and a significant perception *gender interaction, $F(7, 189) = 5.64$, $p < .05$, $\eta^2 = .17$. Post hoc analyses for the within-subjects factor of perception revealed significant differences between personal and perceived peer norm hookup attitudes for all 7 assessed hookup domains (sexual, relationship, coping, harmless, fun, status, drinking attitudes). Post hoc analyses of the main effect for gender revealed differences for relationship attitudes $F(1, 195) = 9.60$, $p = .00$, $\eta^2 = .05$, fun attitudes $F(1, 195) = 13.87$, $p = .00$, $\eta^2 = .06$, and status attitudes $F(1, 195) = 35.63$, $p = .00$, $\eta^2 = .15$, with

men scoring higher in each area. The significant interaction between gender and perception (personal versus perceived peer attitudes) was unpackaged and results indicated significant difference for 5 of the 7 hookup domains, with women reporting significantly lower personal approval. Study 2 results indicated, contrary to prediction, participants were less approving of hookups when alcohol was involved, $F(1, 204) = 7.58$, $p = .01$, $\eta^2 = .04$, regardless of partner type (i.e., familiar/ stranger). However, as expected, results indicated lower perceived likelihood of vignette protagonists using safe sex practice after consuming alcohol $F(1, 204) = 13.29$, $p = .00$, $\eta^2 = .06$.

Implications: The current findings provide more insight into the hookup culture. The difference which emerged between personal and perceived peer approval of hookup behavior demonstrate that although personal hookup attitudes were positive, perceived peer approval was much stronger. Participants were not as accepting of mixing drinking and hookup behavior as expected. This result emerged in both parts of the study. When viewing the totality of the results, it appears justified to suggest that the self-reported attitudes reflect participants' real view of the hookup culture. Programming on college campuses could build on these results to challenge the perceived norms that students' hold and to illustrate how the perceived norms are somewhat different from the actual norms –e.g., their personal views. Doing so could reduce subjective pressure to support or approve of the hookup culture.

Press Release

April 4, 2018

An Exploration of Hookup Culture, Alcohol Use, and Sexual Health among College Students

CINCINNATI - Two separate studies aimed at further exploring the hookup culture on college campuses found that contrary to popular belief, the majority of students are disapproving of the use of alcohol when "hooking up." The researchers also found that personal attitudes about the hookup culture were significantly more negative than perceived peer attitudes of the hookup culture. Lead researcher Courtney Wineland explained "we used a novel strategy which combined experimental and self-report studies to identify how students really view hookup culture. Our findings suggest that although students generally approve of hooking up, they are more comfortable about it when alcohol is not involved. However, they continue to think that their peers believe it is okay to drink and hookup." She further explained that this suggests students may be starting to internalize educational messages about the risks of combining alcohol and hookup behavior but more work needs to be done. She concluded by stating college campuses may benefit from using this information to challenge students' perceptions of the hookup culture and to establish more accurate norms.