Published in final edited form as:

Arch Sex Behav. 2012 October ; 41(5): 1219–1229. doi:10.1007/s10508-011-9817-2.

Predictors of Hooking Up Sexual Behaviors and Emotional Reactions Among U.S. College Students

Melissa A. Lewis,

Department of Psychiatry and Behavioral Sciences, University of Washington, Box 354944,
Seattle, WA 98195, USA

Hollie Granato,

Department of Psychology, University of Washington, Seattle, WA, USA

Jessica A. Blayney,

Department of Psychiatry and Behavioral Sciences, University of Washington, Box 354944,
Seattle, WA 98195, USA

Ty W. Lostutter, and

Department of Psychiatry and Behavioral Sciences, University of Washington, Box 354944,
Seattle, WA 98195, USA

Jason R. Kilmer

Department of Psychiatry and Behavioral Sciences, University of Washington, Box 354944,
Seattle, WA 98195, USA

Abstract

The present study examined factors associated with engaging in oral and vaginal sex and condom use during the most recent hookup, a term that refers to a range of physically intimate behaviors outside of a committed relationship, among college students. In addition, this research aimed to evaluate factors associated with experiencing positive and negative affect resulting from the most recent hookup. A random sample ($N = 1,468$) of undergraduates (56.4% female) completed a Web-based survey that was comprised of measures of drinking and sexual behavior. Participants ($n = 824$; 56.1%) who indicated they had ever hooked up were included in data analysis. Findings indicated that sex, partner type, alcohol use, attitudes towards hooking up, and attitudes towards sexual activity during hookups explained significant variance for oral sex, vaginal sex, condom use, and positive and negative affect related to the most recent hookup experience. Clinical implications regarding the role of situational stressors, such as the impact on affect following a hookup, and ways to reduce risks associated with stressors are discussed.

Keywords

Sexual behavior; Casual sex; Hooking up; Mental health; Alcohol; College students

Introduction

Hooking up can be defined as a sexual encounter where two people are physically intimate (e.g., kissing, touching, oral sex, vaginal sex, anal sex) with someone whom they are not dating or in a romantic relationship with at the time, and in which it is understood there is no mutual expectation of a romantic commitment (Fielder & Carey, 2010a; Owen, Rhoades, Stanley, & Fincham, 2010). Research has shown hooking up rates in college to be high, up to 86% (Fielder & Carey, 2010b; Grello, Welsh, & Harper, 2006; Owen et al., 2010; Paul & Hayes, 2002). Although studies have suggested that nearly half of men and one-third of women may be engaging in sexual intercourse during hookups (Paul, McManus, & Hayes, 2000), less is known about the factors that may be related to engaging in different sexual behaviors, such as oral and vaginal sex, during a hookup. Therefore, to best understand the risks associated with hooking up, it is important to gain insight into factors that may lead students to engage in oral and vaginal sex during a hookup. Furthermore, it is important to understand how sexual risk may be decreased by examining condom use during hooking up.

Hooking up has been shown to be associated with sexual risks, including not using condoms (Fielder & Carey, 2010b; Paul et al., 2000). For example, Fielder and Carey found that only 69% of females reported condom use during the most recent hookup in which they reported vaginal sex and no females reported condom use during the most recent hookup in which they reported oral sex. With research showing that college students have an average of 10.80 ($SD = 13.61$) hookup experiences a year (Paul et al., 2000), it is no surprise that students who hookup report having a higher number of casual sexual partners (Grello et al., 2006) than students who do not hookup.

In addition to sexual risks associated with hooking up, research has shown that hooking up is related to emotional consequences (Fielder & Carey, 2010a, 2010b; Grello et al., 2006; Owen et al., 2010). Owen et al. (2010) demonstrated gender differences in emotional reactions to hooking up, illustrating that there is great variability in attitudes following a hookup. For women, 26.4% reported a positive reaction, 48.7% reported a negative reaction, and 24.9% reported an ambivalent reaction. For men, 50.4% reported a positive reaction, 26.0% reported a negative reaction, and 23.6% reported an ambivalent reaction. Research conducted by Fielder and Carey (2010a) found that women who had penetrative sexual hookups reported greater distress and lower self-esteem. However, distress and self-esteem were assessed more generally rather than as a direct result of hooking up. Additionally, Fielder and Carey (2010b) found that college women reported enjoying their most recent hookup and indicated a low level of regret. However, this study did not examine emotional reactions of the most recent hookup among men nor did it examine factors associated with emotional reactions. Thus, it is important to examine factors associated with positive and negative affect following the most recent hookups of both men and women.

While previous research has shown that many factors, such as alcohol use, are associated with hooking up, the majority of this research is cross-sectional and thus cannot provide causal explanations for engaging in sexual behavior, using a condom, and/or emotional reactions to hooking up. In addition, of the research that is prospective (e.g., Fielder & Carey, 2010a), risk behaviors were examined at a global level; thus, with little research

examining hooking up at the event level, it is unclear how factors contribute to hooking up. Fielder and Carey (2010b) examined the most recent hookup among a sample of first-semester college women. While this study provided prevalence estimates and characteristics of women's most recent hookups, the study did not examine college men's most recent hookup or how characteristics of the hookup may relate to sexual behavior, condom use, or emotional reactions. Thus the literature would be extended by examining factors associated with oral and vaginal sexual behavior, condom use, and emotional reactions with hookups at an event level. An event level approach is useful to elicit information about the most recent hookup, as this approach reduces memory burden for longer recall timeframes of drinking and sexual behavior, avoids averaging across drinking and sexual experiences, and provides precise contextual information about hookups (Fielder & Carey, 2010b; Weinhardt & Carey, 2000).

Partner Type

Event level methodologies also allow researchers to obtain partner-specific information, such as partner type. Previous research examining casual sex among college students found that 37% of most recent casual sexual partners were someone with whom students were less familiar (i.e., stranger, someone they had seen around before, or acquaintance), while 63% of students reported that their most recent casual sex partner was a friend (Grello et al., 2006). This study also found that students were more likely to have engaged in oral and vaginal sex when their partner was a friend rather than a stranger or acquaintance. In a recent study, Fielder and Carey (2010b) found that, among female college students, hookups were more likely to occur with friends (47%) or acquaintances (23%) than with strangers (14%) or ex-boyfriends (12%).

It is unknown if condoms are more or less likely to be used during hookups with more known partners. Although research has shown that condom use is more common with casual partners than with steady sexual partners (Cooper & Orcutt, 1997), this may not be the case when hooking up. Students may be more likely to use a condom when hooking up with more known partner due to their being more comfortable to negotiate request the use of a condom but not have to worry about the trust or intimacy concerns that are often relate to condom use with steady partners (Morrison, Baker, & Gillmore, 1998; Morrison, Gillmore, & Baker, 1995). Thus research is still needed to examine the relationship between partner type and oral or vaginal sex and condom use during the most recent hookup as well as positive or negative affect following the most recent hookup in both men and women.

Alcohol Use

Research has shown that heavier alcohol use is associated with a greater likelihood of hooking up and having multiple hookup partners (Fielder & Carey, 2010a; Grello et al., 2006; Lambert, Kahn, & Apple, 2003; Owen et al., 2010; Paul & Hayes, 2002). Fielder and Carey (2010a) found that pre-college peak intoxication level was associated with engaging in oral and vaginal sex and having more oral and vaginal sexual hookup partners during the first semester of college. Owen et al. (2010) found that alcohol use was related to a greater likelihood of hooking up, although alcohol use was not associated with affect. Because hooking up and affect were examined over a 12 month period, it is unclear how sexual

behavior and alcohol use may relate to affect specific to hooking up at an event level. While research has examined the role that alcohol can play in predicting a hookup (Fielder & Carey, 2010a), less is known about the role of alcohol use in sexual risk during a hookup (i.e., condom use). Alcohol use on a global level has been consistently linked with increased sexual risk behaviors and consequences (Baliunas, Rehm, Irving, & Shuper, 2010; Cooper, 2002). That noted, event level studies indicate alcohol intoxication does not yield greater sexual risk-taking in every situation (Dermen & Cooper, 2000), suggesting that more complex factors contribute to sexual risk behaviors such as condom use (Weinhardt & Carey, 2000). A study conducted by Kiene, Barta, Tennen, and Armeli (2009) found that when examining sexual behavior on an event level, drinking done proximal to sexual intercourse increased the likelihood of unprotected sex with casual but not steady partners, a finding especially true among women. Neal and Fromme (2007) found that when evaluating the relations between drinking and sexual behavior at the event level among college students, alcohol intoxication did not influence the decision to engage in sexual behavior but rather it decreased the use of protective behaviors (i.e., reduced the likelihood of talking about or using protection) when one engaged in sexual activities.

When examining the most recent hookup among college women, Fielder and Carey (2010) found that women reported having an average of 3 drinks ($SD = 3.0$) before their most recent hookup, with 64% consuming at least one drink. This study also found that 51% of college women indicated intoxication as a motive for hooking up with their most recent hookup partner. This study, however, examined only women and did not examine if alcohol consumed in conjunction with the hookup was associated with engaging in oral or vaginal sex, condom use, or affect. Examining factors related to condom use during hooking up is important as Fielder and Carey (2010b) found that no female students reported using condoms during oral sex hookups and 69% of students reported condom use for vaginal sex hookups. Therefore, it is important to consider the event level role that alcohol can play in sexual risk and emotional reactions during a hookup among both women and men.

Attitudes

Owen et al. (2010) found that less favorable attitudes toward hooking up related to greater negative affect. It was suggested that possessing negative attitudes towards hooking up and then engaging in hooking up might create dissonance, thereby causing negative emotional reactions. A limitation of this study was that it did not examine how attitudes towards hooking up related to sexual behaviors or condom use. Since this study was both cross-sectional and evaluated variables at a global level, additional research is needed to examine how attitudes towards hooking up and attitudes towards sexual behaviors during hooking up relate to oral and vaginal sex, condom use, and emotional reactions to hooking up.

The Present Study

Understanding factors that relate to sexual behavior during a hookup could inform the development and evaluation of preventative interventions aimed to reduce risky sexual behavior among college students. Examining hooking up at the event level may provide critical contextual information relating to sexual hookups and subsequent emotional responses. Thus, the purpose of the present research was to extend previous findings by

examining the relationships among alcohol use, partner type, hooking up attitudes, approval of hooking up in association with oral and vaginal sex, and condom use during the most recent hooking up experience. In addition, this study aimed to extend findings by examining the association of these factors with positive and negative affect resulting from the most recent hookup. It was expected that these associations would be present even when controlling for relevant covariates, such as sex (Grello, Welsh, Harper, & Dickson, 2003; Owen et al., 2010; Paul et al., 2000).

Hypotheses—Hypothesis 1: It was predicted that partner type would be associated with oral and vaginal sexual behavior such that less known partners (i.e., stranger, casual acquaintance) would be associated with a lower likelihood of sexual behavior and more known partners (i.e., friend, ex-boyfriend/girlfriend) would be associated with a greater likelihood of sexual behavior.

Hypothesis 2: It was predicted that more known partners (i.e., friend, ex-partner) would be associated with a greater likelihood of using a condom during the most recent hookup.

Hypothesis 3: It was predicted that all partner types would be negatively associated with positive affect and positively associated with negative affect.

Hypothesis 4: It was predicted that heavier typical alcohol use and heavier alcohol use in conjunction with the hookup would be associated with a greater likelihood of oral and vaginal sexual behavior, lower likelihood of using a condom, lower positive affect, and higher negative affect.

Hypothesis 5: It was predicted that attitudes towards hooking up and approval of sexual behavior during hookups would be positively associated with a greater likelihood of sexual behavior, condom use, and positive affect and negatively associated with a negative affect.

Hypothesis 6: It was predicted that hookups involving oral and vaginal sex would be negatively associated with positive affect and positively associated with negative affect.

Method

Participants and Procedure

A random sample ($N = 3,224$) of 18-to-25-year-old undergraduate students were mailed and e-mailed an invitation to participate in a 20-min Web-based screening survey for a larger study on sexual behavior and alcohol use. A total of 1,468 (56.4% female) participated in the study and, of those, 1,388 completed the survey. Participants ($n = 824$; 56.1%) in the final analyses included those students who reported ever hooking up. Participants with missing data on certain variables were excluded due to listwise deletion. Recruitment rates were comparable to other large scale studies in this population (e.g., Marlatt et al., 1998; McCabe, Boyd, Couper, Crawford, & D'Arcy, 2002). Participants received \$10 for completing the survey. Ethnicity of the sample was 61.0% Caucasian, 23.2% Asian, 9.4% multiracial, and 6.4% other. A small proportion of the sample identified as Hispanic (5.6%). The mean age for participants was 19.9 years ($SD = 1.52$). The majority of students (63.1%) reported not currently being in a monogamous relationship and 94.4% identified as

heterosexual. All study procedures were approved by the university's institutional review board, and a Federal Certificate of Confidentiality was obtained for this research.

Measures

Sexual History—Participants were asked “Have you ever had sexual intercourse?” Sexual intercourse was defined as oral, vaginal or anal intercourse. Response options were *yes* = 1 or *no* = 0.

Hooking Up—Hooking up was assessed by a single item asking “Have you ever hooked up with someone?” Hooking up was defined as an “event where you were physically intimate (any of the following: kissing, touching, oral sex, vaginal sex, anal sex) with someone whom you were not dating or in a romantic relationship with at the time and in which you understood there was no mutual expectation of a romantic commitment.” Response options were *yes* = 1 or *no* = 0.

Participants were asked to report on various descriptive characteristics of their most recent hookup. Participants were asked “Was the experience you just described the first time you hooked up with that person?” as well as “Was this hookup an experience you wanted to have?” and “Was this hookup an experience you did not want to have or were unable to consent to?” Participants were also asked to report any problems associated with their most recent hookup (i.e., loss of respect for yourself, embarrassment, emotional difficulties, difficulty in a relationship with a steady partner, break up with a steady partner, unwanted pregnancy, and sexual transmitted infections). Response options were *yes* = 1 or *no* = 0.

Typical Weekly Alcohol Consumption—Typical number of drinks consumed per week during the last 3 months was assessed with a modified version of the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985). Participants were provided the following definition for standard drinks: 12 oz beer, 10 oz wine cooler, 4 oz wine, 1 cocktail with 1¼ oz of 100-proof liquor or 1½ oz of 80-proof liquor. Participants were asked: “Consider a typical week during the last 3 months. How much alcohol, on average (measured in number of drinks), do you drink on each day of a typical week?” A response table with each day of the week was presented and the participants filled in how much they typically drank on each day of the week. Scores were computed by summing the number of drinks on each day of the typical week.

Approval of Sexual Activity During Hooking Up—Personal attitudes regarding the acceptability (or unacceptability) of sexual behaviors during a hookup was assessed with five items ($\alpha = .80$). Response options were measured on a Likert scale ranging from 1 (*unacceptable*) to 7 (*acceptable*). Behavioral responses included the following: no sexual activity of any kind (reverse scored), kissing, touching each other's bodies, oral sex, vaginal sex, and anal sex. Scores of these five items represent the means of the items.

College Hooking Up Attitudes—Four items generated by Fielder and Carey (2010a) were utilized to assess college hooking up attitudes ($\alpha = .84$). Participants were asked how much they agreed or disagreed with the following statements: (1) hooking up is part of the college experience; (2) college students are expected to hookup; (3) everyone looks forward

to hooking up in college; and (4) hooking up is important to my social life. Response options were measured on a Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Scoring was based on the means for all items.

Most Recent Hookup Partner—Participants were asked about their most recent hookup experience. Hookup partner was assessed by asking participants to indicate if their most recent hookup partner was a stranger, casual acquaintance, friend, or ex-boyfriend or ex-girlfriend.

Most Recent Hookup Sexual Behaviors—Participants were asked to report the sexual behaviors they engaged in during their most recent hookup with the question: “During this hookup, did you and your partner engage in the following?” Response options were *yes* = 1 or *no* = 0 for engaging in oral sex, vaginal sex, and anal sex.

Condom Use During the Most Recent Hookup—Condom use was reported using a single question, “During this hookup, did you or your partner use a condom?” Responses options were *yes* = 1 or *no* = 0.

Alcohol Consumption During the Most Recent Hookup—Alcohol consumption during the most recent hookup was assessed by asking participants to report the number of drinks they had directly prior to or during the most recent hookup. Responses ranged from 0 = 0 *drinks* to 25 = 25 *or more drinks*.

Positive and Negative Affect Related to Most Recent Hookup—We utilized a measure to assess positive and negative affect resulting from the most recent hookup based on the work of Glenn and Marquardt (2001) and Owen et al. (2010). Participants were asked, “Please indicate the extent to which you experienced the feelings or emotions below as a result of this hookup. This hookup made me feel...” Positive affect ($\alpha = .87$) items included: *happy*, *carefree*, *attractive*, *desirable*, and *excited*. Negative affect ($\alpha = .87$) items included: *upset*, *regretful*, *depressed*, *confused*, and *ashamed*. Previous research has shown these, and similar, emotional adjectives have high face validity, are commonly used emotional adjectives for adjective checklists, and have been used to adequately differentiate emotional reactions to hooking up (Glenn & Marquardt, 2001; Owen et al., 2010). Affect was measured on a Likert scale of 1 (*not at all*) to 5 (*extremely*). Positive and negative affect represent mean scores.

Results

Descriptive Information

The majority of the sample was sexually experienced, with 83% of participants reporting having oral, vaginal or anal sexual behavior in their lifetime. During their most recent hookup, 46.7% of students reported not having oral or vaginal sex, 14.3% of students reporting having oral sex only, 14.9% reporting having vaginal sex only, and 24.1% reported having both oral and vaginal sex. Of the students who reported having oral, vaginal or anal sex during their most recent hookup ($n = 429$), 46.6% reporting using a condom. Because

only 2.6% of the sample reported having anal sex during the most recent hookup, we did not examine this variable as an outcome.

During the most recent hookup, 8.3% hooked up with a stranger, 24.0% hooked up with a casual acquaintance, 53.8% hooked up with a friend, and 13.8% hooked up with an ex-boyfriend or ex-girlfriend. Almost two-thirds (61.9%) of students reported that their most recent hookup was the first time they had hooked up with this particular partner.

The majority (86.3%) of students described their most recent hookup experience as an experience they wanted to have. A smaller proportion (7.6%) of students indicated that their most recent hookup experience was an experience they did not want to have or were unable to give consent. Students indicated having experienced a number of emotional, social or physical consequences as a result of the hookup, with 20.8% of students reporting experiencing a loss of respect, 27.1% indicated feeling embarrassed, 24.7% reported having emotional difficulties, 10.0% reported difficulties in a relationship with a steady partner, 2.5% reported breaking up with a steady partner, .2% reported an unwanted pregnancy, and .9% reported contracting a sexually transmitted infection.

Means and SDs are shown in Table 1 and correlations are presented in Table 2. A majority (60.9%) of students reported drinking alcohol during their most recent hookup and, of those, 65.4% engaged in heavy episodic drinking (5/4 drinks for men/ women). Students reported having an average of 3.3 drinks ($SD = 3.59$) during the most recent hookup, which was positively correlated with typical weekly drinking, hooking up attitudes, approval of hooking up, and negative affect. Correlations indicated that typical weekly drinking was positively associated with all variables with the exception of negative affect, in which the relationship was significant but negative. Positive affect was negatively associated with number of drinks during the hookup.

Students reported higher positive affect ($M = 2.97$, $SD = 1.06$) than negative affect ($M = 1.73$, $SD = 0.90$) following a hookup. Overall, findings indicated that students had neutral attitudes ($M = 4.15$, $SD = 1.48$) towards hooking up and found approval of sexual behaviors acceptable ($M = 4.74$, $SD = 1.83$) during hooking up. For both men and women, hooking up attitudes and approval of sexual activity during hooking up were positively associated with typical drinking and positive affect, whereas they were negatively associated with negative affect. Positive and negative affect were negatively associated for men and women.

Oral Sexual Behavior, Vaginal Sexual Behavior, and Condom Use

Logistic regression analysis was used to evaluate the likelihood of engaging in oral sexual behavior, vaginal sexual behavior, and condom use during the most recent hookup. Oral sexual behavior, vaginal sexual behavior, and condom use were each evaluated as a function of nine predictors (i.e., sex, stranger, casual acquaintance, friend, ex-boyfriend/girlfriend, typical weekly drinking, number of drinks before or during the hookup, attitude towards hooking up, attitude towards alcohol and hooking up, and attitude toward acceptable sexual activity during a hookup). Sex was included in analyses as a covariate based on its previous associations with sexual behavior, condom use, and affect relating to hooking up (Grello et al., 2003; Owen et al., 2010; Paul et al., 2000). Sex was dummy coded (men = 1, women =

0). Hookup partner type was dummy coded (stranger: yes = 1, no = 0; casual acquaintance: yes = 1, no = 0; friend: yes = 1, no = 0; ex-boyfriend/ex-girlfriend: yes = 1, no = 0). Typical weekly drinking, number of drinks before or during the hookup, attitude towards hooking up, attitude toward acceptable sexual activity during a hookup were mean centered to facilitate interpretation of parameter estimates (Cohen, Cohen, West, & Aiken, 2003). Two-way interactions between each of the predictors and sex were examined for oral sexual behavior, vaginal sexual behavior, and condom use. Because most interactions were not significant, they are not presented. Thus, findings overall did not vary by sex.

Oral Sexual Behavior—When evaluating oral sexual behavior during the most recent hookup, the model with all main effects was statistically reliable compared to a constant-only model, $\chi^2(9, N = 806) = 104.72, p < .001$, which indicates that the predictors reliably distinguished between students who had oral sex during their most recent hookup and those who did not. Classification was acceptable, with 67.9% classified correctly. Results shown in Table 3 indicated that the model provided good fit for the likelihood of having oral sex during the most recent hookup (Nagelkerke $R^2 = .17$). Findings indicated that participants were more likely to have oral sex during their most recent hookup if they typically drank heavier amounts of alcohol and had higher approval of sexual activity during a hookup.

Vaginal Sexual Behavior—When evaluating vaginal sexual behavior during the most recent hookup, the model with all main effects was statistically reliable compared to a constant-only model, $\chi^2(9, N = 798) = 124.69, p < .001$. Thus, the predictors reliably distinguished between students who had vaginal sex during their most recent hookup and those who did not. Classification was good, with 68.3% classified correctly. Results shown in Table 4 indicated that the model provided good fit for the likelihood of having vaginal sexual behavior during the most recent hookup (Nagelkerke $R^2 = .20$). Findings indicated that participants were more likely to have vaginal sex during their most recent hookup if they typically consumed heavier amounts of alcohol and had higher approval of sexual activity during a hookup. Findings indicated that participants were less likely to have vaginal sex during the most recent hookup if they were male and hooked up with a stranger, casual acquaintance, or friend.

Condom Use—When evaluating condom use among participants who reported having oral, vaginal, or anal sex during the most recent hookup ($n = 427$), the model with all main effects was statistically reliable compared to a constant-only model, $\chi^2(19, N = 421) = 24.67, p < .001$. Thus, the predictors reliably distinguished between students who used a condom during their most recent hookup and those who did not. Classification was adequate, with 60.7% classified correctly. Results indicated that the model provided good fit for the likelihood of having vaginal sexual behavior during the most recent hookup (Nagelkerke $R^2 = .08$). Findings (Table 5) indicated that participants were more likely to have used a condom during their most recent hookup if they hooked up with a casual acquaintance or ex-boyfriend/girlfriend. Participants were also more likely to report using a condom if they had higher approval of sexual activity during a hookup.

Positive and Negative Affect—Hierarchical regression analysis was used to evaluate positive and negative affect associated with hooking up as a function of eleven predictors (i.e., sex, stranger, casual acquaintance, friend, ex-boyfriend/girlfriend, typical weekly drinking, number of drinks before or during the hookup, whether the participant had oral or vaginal sex during the hookup, attitude towards hooking up, and attitude toward acceptable sexual activity during a hookup). Oral sexual behavior was dummy coded (yes = 1, no = 0). Vaginal sexual behavior was also dummy coded (yes = 1, no = 0). Coding and mean centering for all other variables were identical to the logistic regression analyses presented above. Two-way interactions between each of the predictors and sex were examined for positive and negative affect. Because most interactions were not significant they are not presented. Thus, findings overall did not vary by sex.

Positive Affect—When evaluating positive affect (Table 6), the predictors accounted for a small proportion of variance ($R^2 = .17$). Finding suggested that typically consuming heavy amounts of alcohol, having oral sex during the hookup, holding favorable attitudes towards hooking up, and approving of sexual activity during hooking up were uniquely and positively related with positive affect associated with the most recent hookup. Hooking up with a stranger, casual acquaintance or friend, consuming higher amounts of alcohol in association with the hookup, and having vaginal sex during the hookup were uniquely and negatively related to positive affect associated with the most recent hookup.

Negative Affect—When evaluating negative affect (Table 6), the predictors accounted for a small proportion of variance ($R^2 = .12$). Finding suggested that hooking up with a stranger, casual acquaintance, friend, or an ex-boyfriend or ex-girlfriend, consuming heavy amounts of alcohol in association with the hookup, and having vaginal sex were uniquely and positively related to negative affect associated with the most recent hookup. Being male, typically consuming heavy amounts of alcohol, and approving of sexual activity during a sexual hookup were uniquely and negatively related to negative affect associated with the most recent hookup.

Discussion

The present study examined how partner type, alcohol consumption, and attitudes towards hooking up related to engaging in sexual behavior and condom use as well as to emotional reactions to the most recent hookup. Findings indicated that students reported higher positive affect than negative affect resulting from their most recent hookup. Furthermore, men reported higher positive affect and lower negative affect compared to women. Although negative affect reported from the most recent hookup was low, a number of students reported emotional, social, and physical consequences resulting from their most recent hookup, suggesting that additional research examining consequences of hooking up is warranted.

Partner Type

Findings indicated that most students hooked up with someone they knew well, such as a friend or an ex-partner. While partner type was not associated with engaging in oral sex

during a hookup, hooking up with a stranger, casual acquaintance, and friend was associated with a lower likelihood of having vaginal sex. Hooking up with an ex-boyfriend/ex-girlfriend was associated with a greater likelihood of using a condom. This may be due to increased comfort with condom negotiation related to greater familiarity or having reason to suspect that the person might be involved with someone else, contributing to an increase in the perceived need for protection. Hooking up with a casual acquaintance was also associated with a greater likelihood of condom use during the most recent hookup, perhaps resulting from hearing rumors about the casual acquaintance's sexual history, increasing the perceived need to use a condom.

With the exception of an ex-partner, all other partner types were associated with greater negative affect and lower positive affect. It appears that hooking up with an ex-boyfriend or exgirlfriend may be perceived as different than hooking up with someone for whom the individual did not have a sexual history. Interestingly, we defined a hookup as a non-committal sexual act; however, previous qualitative research on men's perception of hooking up suggests that men may approach a hookup with the intention of renewing their previous relationship or, conversely, having a good-time without experiencing regret because of existing trust with their ex-partner (Epstein, Calzo, Smiler, & Ward, 2009; Townsend, 1995). However, hooking up with a noncommitted sexual partner in general appears to be associated with negative emotional reactions.

There may be many reasons for the association between partner type and negative affect associated with the most recent hookup. For example, hooking up in college settings often occurs at parties or small group events in which other people may have knowledge about one's hookup behaviors or afterwards having one or both of the hookup participants tell others about the event. Having other people know about the hookup could lead to greater feelings of being upset, embarrassment, regret, and/or shame, as people may make negative comments about one's hookup partner or spread gossip about the hookup encounter. It is also possible that since the majority of hookup partners were friends or one's ex-partner, that negative affect could also be related to relationship uncertainty and, in turn, increase feelings of confusion, regret, and/or depression. After the hookup, it may feel awkward to discuss the sexual encounter, leading to avoidance of the person. Moreover, one partner may regret the experience while the other partner may be hoping the event leads to reconciling their past relationship or view the hookup in the hopes that it might lead to a romantic relationship (Epstein et al., 2009; Townsend, 1995).

Alcohol Consumption

Typical weekly drinking was weakly associated with having oral and vaginal sex during the most recent hookup such that students who reported higher typical weekly drinking were 1.03 times more likely to have oral or vaginal sex during their most recent hookup. However, unexpectedly, drinking in conjunction to the hookup was not a significant predictor of either oral or vaginal sex. This finding suggests that the association between alcohol and sexual behavior during a hookup may exist because both behaviors have common underlying risk factors (e.g., sensation seeking) rather than alcohol being a causal factor. It may also be that the relationship between typical alcohol use and oral and vaginal

sex during the hookup was being driven by expectancies. Similarly, typical alcohol use was associated with greater positive affect and lower negative affect relating to the most recent hookup. Typical drinking may result in more positive emotional reactions to hooking up due to having expectancies related to alcohol enhancing one's emotional reactions to sex. Future research should examine alcohol-related sexual expectancies as a mediator of these relationships. Alcohol use was involved in the majority of hookups; however, findings indicated that alcohol consumed in connection to the hookup was not associated with either oral or vaginal sex or condom use. Future research should examine if expectancies have a greater influence in sexual behavior than actual alcohol consumed prior to the hookup.

In addition, the number of drinks consumed during the hookup was associated with less positive affect and more negative affect resulting from the hookup. While alcohol use during the hookup did not predict oral or vaginal sexual behavior or condom use, prior research has shown that alcohol is associated with a greater likelihood to hookup (Fielder & Carey, 2010a; Grello et al., 2006; Lambert et al., 2003; Owen et al., 2010; Paul & Hayes, 2002). Thus, less positive affect and more negative affect may result from alcohol contributing to the decision to hookup rather than the decision to engage in specific behaviors that occurred during the hookup.

Approval of Sexual Behavior During Hooking Up

Approval of sexual behavior during hooking up was associated with a greater likelihood of oral sexual behavior, vaginal sexual behavior, and condom use. This finding suggests that having a more favorable attitude toward sexual activity during hooking up may lead one to be more prepared for sex during a hookup and thus more prepared to use a condom. Approving of sex during hooking up was positively associated with positive affect and negatively associated with negative affect. This finding suggests that students who engaged in sexual behaviors that were inside their "comfort zone" were likely to have a more positive hookup experience.

Sexual Behavior During Hooking Up

Findings indicated that having oral sex during the most recent hookup was associated with greater positive affect but was not a significant predictor of negative affect. Furthermore, students who had vaginal sex during the hookup reported lower positive affect and higher negative affect. This finding is similar to that of Fielder and Carey (2010b) in which penetrative sex was associated with greater distress and lower self-esteem for women. Future research should examine why positive and negative affect varies by the type of sexual behavior that occurs during hookups.

Clinical Implications

Findings from the present study show a number of concerning characteristics associated with college students most recent hookups. Over half (53.3%) of students reported having sex during their most recent hookup; however, only 46.6% of these students reported using a condom. As a result of their most recent hookup, .2% of students reported an unwanted pregnancy and .9% of students reported having a sexually transmitted infection. Also of concern is that 7.6% of students indicated that their most recent hookup experience was an

experience they did not want to have or were unable to give consent. Students also experienced emotional consequences as a result of their most recent hookup, with 20.8% of students reporting experiencing a loss of respect, 27.1% of students indicating feeling embarrassed, 24.7% of students reporting emotional difficulties. Finally, students reported their most recent hookup as a cause of problems with a steady partner with 10.0% of students having reported difficulties in a relationship with a steady partner and 2.5% of students having reported breaking up with a steady partner. Overall, students indicated having experienced a number of emotional, social, or physical consequences as a result of their most recent hookup.

In this study, 83% of students reported that they had ever hooked up, and 60.9% of students reported drinking during the most recent hook-up. Given that many of these hookups were associated with embarrassment or other emotional difficulties, and given that a majority of these hookups involved alcohol, it is noteworthy that the most endorsed consequence related to drinking by college students is doing something that they later regretted (American College Health Association, 2010). It is clear that a greater understanding of the impact (and complications surrounding) hooking up could inform prevention and intervention efforts with college students. Particularly if the hookup is regretted, this can even have academic implications, and could certainly be helpful to those working with students in a counseling setting. Turner and Berry (2000) demonstrated that 70% of students seeking counseling reported that personal problems affected their academic success. It is possible that the emotional impact and consequences following a hookup (including instances in which alcohol was seen as a contributing factor) could be quite significant for a college student. Hence, determining strategies to reduce, manage, or cope with negative affect and consequences following a hookup could be relevant to students' presenting issues in a counseling setting.

Findings from the present study demonstrated that students reported rather low levels of negative affect resulting from their most recent hookup, with men reporting lower negative affect than women. Although findings from the present study suggested that levels of negative affect from hooking up are low, addressing negative affect is important, as negative affect regarding sexual encounters may lead to feelings of anxiety, guilt, and fear, which could influence effective contraception negotiation and usage, thereby leading to greater STI exposure in future sexual experiences (Gerrard, Gibbons, & McCoy, 1993). With recent research suggesting that problems with alcohol could lead to increased risk for major depression (Fergusson, Boden, & Horwood, 2009), alcohol prevention and intervention efforts continue to be an important priority in a college setting. As college campuses increase their focus on mental health issues, the role of situational stressors (like the impact to affect following a hook-up) and ways to reduce the risks associated with these stressors can be a continued area of interest for researchers and clinicians.

Limitations/Future Directions

A primary limitation of the present research was that typical alcohol consumption and the most recent hookup experience were measured concurrently. While it is logical that typical high-risk alcohol use may relate to engaging in other risk behaviors during a hookup or how

one emotionally reacts to a hookup, future research should examine this association longitudinally. It may be the case that emotional problems from hooking up lead to using alcohol. In addition, we did not examine if condom use during the hookup was specific to oral, vaginal or anal sex. Although previous research has shown that college women do not use condoms for oral sex associated with a hookup (Fielder & Carey, 2010b), future research is needed to determine if there are different predictors for condom use for different sexual behaviors. We also did not examine if participants gave or received oral sex during the hookup. Future research should examine if positive and negative affect varies depending on whether someone gives or receives oral sex during a hookup. Because we examined the most recent hookup, the time from which the most recent hookup occurred and participating in the study varied for individuals. Thus it is possible that there may be some memory bias for individuals who did not hookup close to the time of the study. Additionally, the present study was restricted to a sample of college students. Although this is a very important group to study as they are at high risk for STI transmission and are often failing to use condoms at a high rate (American College Health Association, 2009, 2010), the findings from this study may fail to generalize to other groups who also may not be using condoms. For example, these findings would need to be replicated for men who have sex with men or adolescents. Finally, future research should seek to understand the findings from the present study within the context of relevant theories.

Conclusions—The results from the present study increase our understanding of how partner types, alcohol use, and attitudes towards hooking up are associated with the likelihood of engaging in oral and vaginal sex and using a condom during a hookup as well as the emotional reactions to hooking up. Overall, students reported higher positive affect than negative affect resulting from their most recent hookup. This finding is consistent with previous research on positive and negative consequences of drinking and sexual behavior (Fielder & Carey, 2010b; Park, 2004; Shrier, Shih, Hacker, & de Moor, 2007). Further research on hooking up is needed to untangle the multiple paths that may lead to positive and negative affect following hookups as well as to determine if these emotional reactions are short- or longer-term and whether they play a role in either promoting or deterring future hookup experiences.

Acknowledgments

Data collection and article preparation were supported by National Institute on Alcohol Abuse and Alcoholism Grant K01AA016966 awarded to M. A. Lewis.

References

- American College Health Association. National College Health Assessment Spring 2008 Reference Group Data Report (Abridged). *Journal of American College Health*. 2009; 57:477–488. [PubMed: 19254888]
- American College Health Association. American College Health Association-National College Health Assessment II: Reference Group Data Report Fall. American College Health Association; Baltimore, MD: 2010. 2009.
- Baliunas D, Rehm J, Irving H, Shuper P. Alcohol consumption and risk of incident human immunodeficiency virus infection: A metaanalysis. *International Journal of Public Health*. 2010; 55:159–166. [PubMed: 19949966]

- Cohen, J.; Cohen, P.; West, SG.; Aiken, LS. Applied multiple regression/correlation analysis for the behavioral sciences. 3rd. Lawrence Erlbaum Associates; Mahwah, NJ: 2003.
- Collins RL, Parks GA, Marlatt GA. Social determinants of alcohol consumption: The effects of social interaction and model status on the self-administration of alcohol. *Journal of Consulting and Clinical Psychology*. 1985; 53:189–200. [PubMed: 3998247]
- Cooper ML. Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. *Journal of Studies on Alcohol*. 2002; 14:101–117.
- Cooper ML, Orcutt HK. Drinking and sexual experience on first dates among adolescents. *Journal of Abnormal Psychology*. 1997; 106:191–202. [PubMed: 9131839]
- Dermen KH, Cooper ML. Inhibition conflict and alcohol expectancy as moderators of alcohol's relationship to condom use. *Experimental and Clinical Psychopharmacology*. 2000; 8:198–206. [PubMed: 10843303]
- Epstein M, Calzo JP, Smiler AP, Ward LM. "Anything from making out to having sex": Men's negotiations of hooking up and friends with benefits scripts. *Journal of Sex Research*. 2009; 46:414–424. [PubMed: 19253134]
- Fergusson DM, Boden JM, Horwood LJ. Tests of causal links between alcohol abuse or dependence and major depression. *Archives of General Psychiatry*. 2009; 66:260–266. [PubMed: 19255375]
- Fielder RL, Carey MP. Predictors and consequences of sexual "hookups" among college students: A short-term prospective study. *Archives of Sexual Behavior*. 2010a; 39:1105–1119. [PubMed: 19130207]
- Fielder RL, Carey MP. Prevalence and characteristics of sexual hookups among first-semester female college students. *Journal of Sex and Marital Therapy*. 2010b; 36:346–359. [PubMed: 20574889]
- Gerrard M, Gibbons FX, McCoy SB. Emotional inhibition of effective contraception. *Anxiety, Stress & Coping*. 1993; 6:73–88.
- Glenn, N.; Marquardt, E. Hooking up, hanging out, and hoping for Mr. Right: College women on dating and mating today. Institute for American Values; New York: 2001.
- Grello CM, Welsh DP, Harper MS. No strings attached: The nature of casual sex in late adolescents. *Journal of Sex Research*. 2006; 43:255–267. [PubMed: 17599248]
- Grello CM, Welsh DP, Harper MS, Dickson JW. Dating and sexual relationship trajectories and adolescent functioning. *Adolescent & Family Health*. 2003; 3:103–112.
- Kiene SM, Barta WD, Tennen H, Armeli S. Alcohol, helping young adults to have unprotected sex with casual partners: Findings from a daily diary study of alcohol use and sexual behavior. *Journal of Adolescent Health*. 2009; 44:73–80. [PubMed: 19101461]
- Lambert TA, Kahn AS, Apple KJ. Pluralistic ignorance and hooking up. *Journal of Sex Research*. 2003; 40:129–133. [PubMed: 12908120]
- Marlatt GA, Baer JS, Kivlahan DR, Dimeff LA, Larimer ME, Quigley LA, Williams E. Screening and brief intervention for high-risk college student drinkers: Results from a 2-year follow-up assessment. *Journal of Consulting and Clinical Psychology*. 1998; 66:604–615. [PubMed: 9735576]
- McCabe SE, Boyd CJ, Couper MP, Crawford S, D'Arcy H. Mode effects for collecting alcohol and other drug use data: Web and U.S. mail. *Journal of Studies on Alcohol*. 2002; 63:755–761. [PubMed: 12529076]
- Morrison DM, Baker SA, Gillmore MR. Condom use among high-risk heterosexual teens: A longitudinal analysis using the theory of reasoned action. *Psychology & Health*. 1998; 13:207–222.
- Morrison DM, Gillmore MR, Baker SA. Determinants of condom use among high-risk heterosexual adults: A test of the theory of reasoned action. *Journal of Applied Social Psychology*. 1995; 25:651–676.
- Neal DJ, Fromme K. Event-level covariation of alcohol intoxication and behavioral risks during the first year of college. *Journal of Consulting and Clinical Psychology*. 2007; 75:294–306. [PubMed: 17469887]
- Owen JJ, Rhoades GK, Stanley SM, Fincham FD. "Hooking up" among college students: Demographic and psychosocial correlates. *Archives of Sexual Behavior*. 2010; 39:653–663. [PubMed: 18839300]

- Park CL. Positive and negative consequences of alcohol consumption in college students. *Addictive Behaviors*. 2004; 29:311–321. [PubMed: 14732419]
- Paul EL, Hayes KA. The casualties of ‘casual’ sex: A qualitative exploration of the phenomenology of college students’ hookups. *Journal of Social and Personal Relationships*. 2002; 19:639–661.
- Paul EL, McManus B, Hayes A. “Hookups”: Characteristics and correlates of college students’ spontaneous and anonymous sexual experiences. *Journal of Sex Research*. 2000; 37:76–88.
- Shrier LA, Shih M, Hacker L, de Moor C. A momentary sampling study of the affective experience following coital events in adolescents. *Journal of Adolescent Health*. 2007; 40:e1–e8. [PubMed: 17367729]
- Townsend JM. Sex without emotional involvement: An evolutionary interpretation of sex differences. *Archives of Sexual Behavior*. 1995; 24:173–206.
- Turner AL, Berry TR. Counseling center contributions to student retention and graduation: A longitudinal assessment. *Journal of College Student Development*. 2000; 41:627–636.
- Weinhardt LS, Carey MP. Does alcohol lead to sexual risk behavior? Findings from event-level research. *Annual Review of Sex Research*. 2000; 11:125–157.

Table 1

Means and SDs by sex

Variable	Men		Women		<i>t</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
1. Typical drinks per week ^a	15.14	13.40	9.41	7.77	5.16***	0.54
2. Drinks during hookup	4.03	4.30	2.76	2.96	3.63***	0.35
3. Hooking up attitudes ^c	4.96	1.35	3.78	1.32	9.11***	0.88
4. Approval of hooking up ^c	5.80	1.40	4.92	1.57	6.13***	0.59
5. Positive affect ^d	3.20	1.03	2.90	1.07	2.98**	0.29
6. Negative affect ^d	1.58	0.80	1.95	1.05	-3.98***	-0.40

Note: *N*s ranged from 810 to 824 due to missing data

**
p<.01,

p<.001

^a Absolute range, 0–74

^b Absolute range, 0–20

^c Absolute range, 1–7

^d Absolute range, 1–5

Table 2

Zero-order correlations by sex

Variable	1	2	3	4	5	6
1. Typical drinks per week	–	0.35***	0.21***	0.22***	0.06	–0.11*
2. Drinks during hookup	0.47***	–	–0.07	0.08	–0.21***	0.14**
3. Hooking up attitudes	0.24***	0.09	–	0.24**	0.21**	–0.06
4. Approval of hooking up	0.17**	0.10	0.41***	–	0.22***	–0.15**
5. Positive affect	0.05	–0.18**	0.24***	0.20***	–	–0.42***
6. Negative affect	–0.11*	0.11*	–0.16***	–0.14**	–0.31***	–

Note: *N*s ranged from 810 to 824 due to missing data. Correlations for women are displayed on the top half and correlations for men are shown on the bottom half of the diagonal

*
 $p < .05$,

**
 $p < .01$,

 $p < .001$

Table 3

Summary of logistic regression analysis predicting oral sex

Predictor	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	95% <i>CI</i>
Sex	0.24	0.17	1.99	1.27	[0.91, 1.76]
Stranger	−0.72	0.50	2.13	0.49	[0.18, 1.28]
Casual acquaintance	−0.80	0.44	3.29	0.45	[0.19, 1.07]
Friend	−0.69	0.42	2.76	0.50	[0.22, 1.13]
Ex-boyfriend/girlfriend	0.29	0.45	0.42	1.34	[0.56, 3.23]
Typical drinks per week	0.03	0.01	10.47***	1.03	[1.01, 1.05]
Drinks during hookup	−0.02	0.03	0.44	0.98	[0.94, 1.03]
Hooking up attitudes	−0.03	0.06	0.30	0.97	[0.87, 1.09]
Approval of hooking up	0.32	0.05	39.75***	1.37	[1.24, 1.51]

Note: $n = 806$. Participants with missing data on certain variables were excluded due to listwise deletion. *OR* odds ratio, *CI* confidence interval. Sex was coded as 0 = women and 1 = men. Stranger was coded as 0 = no and 1 = yes. Casual acquaintance was coded as 0 = no and 1 = yes. Friend was coded as 0 = no and 1 = yes. Ex-boyfriend/girlfriend was coded as 0 = no and 1 = yes

 $p < .001$

Table 4

Summary of logistic regression analysis predicting vaginal sex

Predictor	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	95% <i>CI</i>
Sex	−0.40	0.18	5.30*	0.69	[0.47, 0.94]
Stranger	−1.46	0.53	7.61**	0.24	[0.08, 0.66]
Casual acquaintance	−1.32	0.46	8.06**	0.27	[0.11, 0.67]
Friend	−1.15	0.44	6.86**	0.32	[0.13, 0.75]
Ex-boyfriend/girlfriend	−0.15	0.47	0.11	0.86	[0.34, 2.17]
Typical drinks per week	0.03	0.01	8.82**	1.03	[1.01, 1.04]
Drinks during hookup	−0.02	0.03	0.72	0.98	[0.93, 1.03]
Hooking up attitudes	−0.02	0.06	0.10	1.50	[0.88, 1.11]
Approval of hooking up	0.41	0.05	59.26***	1.96	[1.35, 1.66]

Note: $n = 798$. Participants with missing data on certain variables were excluded due to listwise deletion. *OR* odds ratio, *CI* confidence interval. Sex was coded as 0 = women and 1 = men. Stranger was coded as 0 = no and 1 = yes. Casual acquaintance was coded as 0 = no and 1 = yes. Friend was coded as 0 = no and 1 = yes. Ex-boyfriend/girlfriend was coded as 0 = no and 1 = yes

* $p < .05$,

** $p < .01$,

*** $p < .001$

Table 5

Summary of logistic regression analysis predicting condom use

Predictor	<i>B</i>	<i>SE</i>	Wald statistic	<i>OR</i>	95% <i>CI</i>
Sex	−0.08	0.23	0.14	0.92	[0.59, 1.44]
Stranger	1.05	0.62	2.90	2.87	[0.85, 9.65]
Casual acquaintance	1.07	0.53	4.20*	2.93	[1.05, 8.17]
Friend	0.86	0.49	3.06	2.35	[0.90, 6.13]
Ex-boyfriend/girlfriend	1.11	0.52	4.52*	3.04	[1.09, 8.47]
Typical drinks per week	−0.02	0.01	0.03	0.99	[0.98, 1.02]
Drinks during hookup	−0.02	0.03	0.01	0.99	[0.94, 1.06]
Hooking up attitudes	0.15	0.08	3.47	1.16	[0.99, 1.35]
Approval of hooking up	0.24	0.07	11.10***	1.27	[1.10, 1.46]

Note: $n = 427$. *OR* odds ratio, *CI* confidence interval. Sex was coded as 0 = women and 1 = men. Stranger was coded as 0 = no and 1 = yes. Casual acquaintance was coded as 0 = no and 1 = yes. Friend was coded as 0 = no and 1 = yes. Ex-boyfriend/girlfriend was coded as 0 = no and 1 = yes

*
 $p < .05$,

 $p < .001$

Table 6

Summary of hierarchical regression analyses predicting positive and negative affect

Predictor	Positive affect			Negative affect		
	<i>B</i> s	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Sex	0.07	0.08	0.04	-0.14	0.07	-0.08*
Stranger	-0.63	0.22	-0.16**	0.46	0.20	0.14*
Casual acquaintance	-0.58	0.20	-0.24**	0.59	0.18	0.28***
Friend	-0.39	0.19	-0.18*	0.40	0.17	0.23*
Ex-boyfriend/girlfriend	-0.32	0.20	-0.10	0.56	0.18	0.22**
Typical drinks per week	0.01	0.01	0.08 [†]	-0.01	0.00	-0.17***
Drinks during hookup	-0.06	0.01	-0.22***	0.05	0.01	0.18***
Hooking up attitudes	0.13	0.03	0.18***	-0.02	0.02	-0.04
Approval of hooking up	0.10	0.02	0.18***	-0.09	0.02	-0.17***
Oral sex	0.16	0.08	0.07 [†]	0.07	0.07	0.04
Vaginal sex	-0.15	0.08	-0.07 [†]	0.23	0.07	0.13***

Note: $n = 792$. Participants with missing data on certain variables were excluded due to listwise deletion. Sex was coded as 0 = women and 1 = men. Stranger was coded as 0 = no and 1 = yes. Casual acquaintance was coded as 0 = no and 1 = yes. Friend was coded as 0 = no and 1 = yes. Ex-boyfriend/girlfriend was coded as 0 = no and 1 = yes

[†]
 $p < .06$,

*
 $p < .05$,

**
 $p < .01$,

 $p < .001$