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Alcohol's Effects on Perceptions of a Potential Date Rape*

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Abstract

Objective—The effects of alcohol consumption, alcohol expectancy set and self-reported alcohol expectancies on college students' perceptions of a potential date rape situation were examined. It was hypothesized that the effects of alcohol consumption on perceptions of the likelihood of forced sex would be mediated by cognitive factors and perceived sexual arousal.

Method—90 female and 90 male college students were randomly assigned to drink alcohol, a placebo beverage, or a nonalcoholic beverage. Participants read a story about a couple that had been drinking together at a party. The story ended with the woman saying “no” to sexual intercourse and the man exerting verbal pressure.

Results—Participants' alcohol consumption during the study, self-reported alcohol expectancies, attitudes about casual sex and usual drinking on dates had significant effects on their perceptions of the story. Participants' alcohol expectancy set and gender did not have significant effects on perceptions of the likelihood that the male character would force the female character to have sex.

Conclusions—Intoxicated participants perceived the woman in the vignette as being more sexually aroused and the man in the vignette as behaving more appropriately, and both of these variables were negatively related to ratings of how likely it was that forced sex would occur. These findings highlight the importance of mediating cues in intoxicated decision making.

Alcohol's effects on sexual and aggressive behavior have been well established. Compared to sober participants, those who have consumed alcohol in laboratory studies have been found to behave more aggressively and sexually (for reviews see Chermack and Giancola, 1997; George and Stoner, 2000). In the study described in this article, female and male college students reacted to a potential date rape situation. The ending was intentionally left ambiguous for two reasons. First, this situation has ecological validity. Most of the sexual assaults experienced by college students occur in dating or party situations, often after some consensual sexual activities, such as kissing or sexual touching, have occurred (Abbey et al., 2001a; Harrington and Leitenberg, 1994). The point at which the situation changes from consensual sex to forced sex may be ambiguous and perceived differently by men and women. Second, the ambiguous ending creates a situation in which intoxicated participants

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will be likely to miss cues and therefore will have a different interpretation of the vignette from that of sober participants as to the likelihood that forced sex will occur.

A brief literature review is provided below, followed by a presentation of the study's hypotheses and findings.

Pharmacological explanations of alcohol's effects

Alcohol disrupts higher-order cognitive processing, making it difficult to focus on competing, contradictory information (Chermack and Giancola, 1997; Pihl and Peterson, 1995; Steele and Josephs, 1990). Intoxicated individuals are therefore likely to focus on the most salient cues in the situation. Taylor and Leonard (1983) argued that intoxicated individuals are likely to be stimulus bound and therefore tend to focus on immediate, superficial cues rather than covert cues such as anticipated negative self-evaluation and internalized norms of behavior.

Researchers have suggested a number of different cognitive pathways through which intoxication can encourage poor decision making: by reducing the ability to recall potential negative consequences, by reducing the perceived likelihood of potential negative consequences, by increasing the perceived likelihood of potential positive consequences, by enhancing the focus on justifications for engaging in negative behaviors and by decreasing concern about negative consequences (Fromme et al., 1999; MacDonald et al., 1996, 2000; Murphy et al., 1998). Empirical studies have partially supported these hypotheses, although findings have been mixed. Fromme and colleagues (1999) found, for example, that intoxicated participants perceived fewer negative consequences associated with sex with a hypothetical new partner than did sober participants, although they did not differ in their recall of positive consequences. MacDonald and colleagues (2000) found that intoxicated participants listed more positive consequences associated with having sex than did sober or placebo participants. Murphy and colleagues (1998) found that intoxicated women were not less likely than sober women to notice risk cues, but were less concerned about them.

Some researchers have suggested that alcohol may influence affective as well as cognitive processes. Sayette (1999) argued that because alcohol impairs recall, anxiety about potentially dangerous actions is reduced. In the domain of sexual assault, sexual arousal is an important potential affective cue. Abbey and colleagues (2001b) hypothesized that alcohol's effects on sexual assault perpetrators' sexual arousal and sense of entitlement are likely to be more salient than victims' negative affect or perpetrator's internalized sense of morality. As a complementary factor, the woman's desire to have fun and enjoy the date, until the man becomes physically forceful, is likely to be more salient to her than the man's persistent verbal pressure.

A few studies have examined the effects of alcohol consumption on participants' perceptions of date rape situations. Norris and colleagues (2001) found that intoxicated men perceived a man who committed acquaintance rape as less deviant and more typical than did nondrinking men. Intoxicated men also reported themselves more likely to behave like the perpetrator in the story. In another study, Norris and colleagues (2002) found that college men who drank alcohol and had strong alcohol expectancies regarding sex were more likely

than other men to indicate that they would act like a male character in a story who forced sex on a date. This effect was partially mediated by their perceptions of how sexually aroused the woman was. Testa and colleagues (2000) asked women to read a story about a situation in which a man, whom the female character in the story had dated once and found attractive, showed up at her door drunk. Although both intoxicated and sober women were equally likely to indicate that the man would make unwanted sexual advances, intoxicated women were more likely than sober women to report that they anticipated engaging in risky behaviors, including inviting him in, drinking with him and kissing him.

Psychological explanations of alcohol's effects

American culture often links alcohol with sex and aggression. Pre-existing expectancies can be a powerful influence on behavior, thus many researchers have suggested that beliefs about alcohol encourage sexually aggressive behavior. There are three different ways this hypothesis has been examined: by making participants believe they have consumed alcohol when they have not, by assessing participants' pre-existing beliefs about alcohol's effects on behavior and by having participants evaluate situations in which other people are drinking. Aggression studies rarely find placebo effects (Ito et al., 1996), although studies of sexually deviant and risky behavior have been more likely to find them (George et al., 2000; Monahan et al., 1999; Murphy et al., 1998). George and colleagues (2000) found the belief that one had consumed alcohol increased sexual arousal and time spent viewing erotica. In a study particularly relevant to the research described in this article. Gross and colleagues (2001) asked college men to listen to an audiotape of an acquaintance rape. The situation began with consensual sexual activity, but then the woman resisted, and over time her resistance and the man's force escalated. Participants were asked to indicate at what point the man should stop. Using the balanced placebo design, both men who drank alcohol and men who thought they drank alcohol took longer to stop the man. Men were also asked to rate the woman's sexual arousal, and drinkers, compared with nondrinkers, perceived the woman as being more sexually aroused early in the situation before her resistance was strong. Although the authors did not test for mediating effects, these findings suggest that participants' alcohol consumption increased perceptions of the woman's sexual arousal, which in turn led them to believe that the man did not need to stop his sexual advances.

To explain why placebo effects are not consistently found, some authors have suggested that individuals' self-reported pre-existing alcohol expectancies need to be considered. Although it seems logical that the belief one is drinking alcohol is most likely to affect the sexual or aggressive behavior of individuals who strongly believe alcohol enhances these behaviors, findings here are also mixed (Chermack and Taylor, 1995; Fromme et al., 1999; George et al., 1989). George and colleagues (1989) found that men with high, as compared to low, self-reported sexual alcohol expectancies watched violent erotic slides longer when they thought they drank alcohol, but not when they did not think they drank alcohol. In contrast, Fromme and colleagues (1999) found a main effect of self-reported alcohol expectancies but no interaction with drink condition. Participants with strong sexual alcohol expectancies saw more benefits associated with sex with a new partner than did participants with weak sexual alcohol expectancies.

Some of the strongest findings supporting the hypothesis that pre-existing beliefs about alcohol's effects influence people's interpretations of behavior come from studies in which people evaluate the actions of others who are depicted as being intoxicated or sober. For example, when sober college students read a story in which a man used physical force to obtain sex from an unwilling date, they were more likely to view the sex as consensual when both members of the couple had been drinking alcohol (Norris and Cubbins, 1992). When a man and woman are shown drinking alcohol together, college students are more likely to assume that they will later engage in consensual sex than when neither is drinking or only one of them is drinking (George et al., 1995). College students also tend to view shared drinking as normative and to evaluate a man or woman who drinks when the dating companion does not less favorably than when both drink alcohol together (Abbey and Harnish, 1995). Surveys of sexual assault victims and perpetrators also indicate that when alcohol consumption was involved, both individuals usually drank alcohol (Abbey et al., 2001b; Harrington and Leitenberg, 1994). In the vignette used in this study, therefore, both the man and the woman were portrayed as drinking alcohol. This enhances ecological validity because most college students report drinking alcohol on dates and at parties (Wechsler et al., 2002).

Overview of study and hypotheses

This study was designed to fill several gaps in what is known about alcohol's effects on perceptions of a potential date rape. In the vignette, the woman consents to kissing and touching, but when the man tries to take her clothes off, she protests. The story ends as the woman continues to say "no" and the man continues to exert verbal pressure. Most acquaintance rape vignettes end the story with the man physically forcing sex on the woman. By leaving the ending ambiguous, we allowed participants to make their own decisions as to whether consensual or forced sex was a more likely outcome under these circumstances. Moreover, most of the studies that examine the effects of alcohol consumption on perceptions of forced sex include only women or men as participants (Gross et al., 2001; Norris et al., 2001; Testa et al., 2000). Both women and men participated in this study, so that gender differences in perceptions of the situation could be examined. Although most researchers assume that deficits in cognitive reasoning underlie many of alcohol's effects, these deficits are not always measured, and when they are, the findings have been mixed (Fromme et al., 1999; MacDonald et al., 1996; 2000). This study included both cognitive and affective variables that were likely to be affected by alcohol consumption.

A 2 (Gender of Participant) $\times$ 3 (Alcohol Condition: Intoxicated, Placebo, Sober) design was used. We hypothesized that participants who drank alcohol would be less likely than participants who did not drink to expect forced sex to occur because they would focus on positive, sexually arousing aspects of the situation and ignore the potential for negative outcomes. As noted above, past research provides mixed evidence as to whether placebo participants will act similarly to participants who actually drink alcohol. Thus, no specific hypothesis was made regarding the main effects of alcohol expectancy set. Participants' self-reported alcohol expectancies were also measured. Because the individuals in the story were drinking alcohol, it was hypothesized that alcohol expectancies would have main effects. Individuals who strongly believed that alcohol enhanced sexual behavior were hypothesized

to be less likely to expect forced sex to occur, and individuals who strongly believed that alcohol enhanced aggressive behavior were hypothesized to be more likely to expect forced sex to occur.

In order to examine potential pathways for alcohol's effects, several mediating variables were included. The effects of alcohol consumption on judgments about the likelihood that the man would force sex were hypothesized to be mediated by the number of self-generated positive and negative consequences associated with having sex, the perceived importance of potential positive and negative consequences and judgments of the characters' sexual arousal. As described above, intoxication has been found to inhibit higher-order cognitive processes and to encourage individuals to focus on impelling cues such as sexual arousal. The effects of alcohol expectancies on judgments about the likelihood of forced sex were hypothesized to be mediated by sexual arousal and by perceptions of the appropriateness of the man's behavior. As summarized earlier, college students have strong beliefs about the co-occurrence of drinking and consensual sex, thus alcohol expectancies were expected to be positively related to perceptions of sexual arousal and appropriateness, which in turn were hypothesized to be related to decreased belief in the likelihood that forced sex would occur.

We anticipated that women would be more likely than men to think the situation could end in forced sex because women often worry about being raped and are trained to be wary in situations like the one depicted in our study (Norris et al., 1996). Participants' attitudes about casual sexual relationships and their own alcohol consumption in dating situations were also assessed because the situation presented to participants involved a dyad that was drinking alcohol and did not know each other well. We hypothesized that the more approving participants were of casual sexual relations and the more often they drank alcohol on dates, the more they would approve of the male character's behavior, and the less likely they would be to expect forced sex to occur (Abbey et al., 1996, 2001b; Tyler et al., 1998).

Method

Participants

Participants were 90 women and 90 men who attended a large urban commuter university. They were recruited from a list of current students provided by enrollment services and through flyers posted on campus. The majority of the sample was white (55.0%), with 25.6% black, 7.2% Asian/Pacific Islander, 3.9% Arabic/Middle Eastern, 3.3% Hispanic and 5.0% indicating another ethnic background. All participants were required to be at least 21 years of age; their mean (SD) age was 26.4 (7.8) years. Participants averaged 31.9 (31.5) drinks in a typical month.

Procedure

Initial screening—Potential participants were recruited for a study of the effects of alcohol on people's social judgments. They were screened by telephone to insure that they met the recommended requirements for alcohol administration studies (National Institute on Alcohol Abuse and Alcoholism, 1989). Participants were required to have drunk at least one

alcoholic beverage in the past 30 days, to have drunk at least four alcoholic beverages on one occasion in the past year, to have no history of alcohol abuse and to have no health problems or medication use that contraindicated alcohol consumption. The alcohol expectancy measures (described below) were also administered over the telephone. Eligible individuals were asked to refrain from eating for 4 hours and to abstain from drinking alcoholic beverages for 24 hours prior to their laboratory session.

Laboratory session—At the start of the laboratory session, participants were given a breath analyzer test (Alco-Sensor IV; Intoximeters, Inc., St. Louis, MO) to verify that their blood alcohol concentration (BAC) was zero. After completing the informed consent form and reverifying the health criteria (including a urine pregnancy test for women), participants completed a background survey. They were then randomly assigned to a drink condition (alcohol, placebo or no alcohol). Using standard double-blind placebo procedures (Rohsenow and Marlatt, 1981), the bartender poured beverages from apparently unopened bottles in front of participants to facilitate the alcohol deception. Participants in the alcohol condition were administered a dose of 80-proof Absolut vodka (2.00 g/kg bodyweight for men and 1.85 g/kg for women) calculated to induce a peak BAC of 0.080%. This BAC level was chosen because past research suggests that it is sufficient to impair a number of cognitive functions (Peterson et al., 1990). The antiplacebo cell, in which participants are told they did not drink alcohol when they actually did drink alcohol, was not included because it typically fails at BACs higher than about 0.040% or 0.050% (Hull and Bond, 1986; Martin and Sayette, 1993). The alcohol was mixed in a 3:1 ratio with Canada Dry tonic and divided into three cups. Participants in the placebo and no alcohol conditions were given an amount of tonic calculated according to the above formula (flattened tonic replaced the vodka in the placebo condition). All participants' beverages then received a squirt of the contents from a lime juice container. For placebo participants, the lime juice container was filled with vodka in order to give the beverages the smell and taste of alcohol (Sayette et al., 1992). Participants were given 5 minutes to consume each beverage, followed by a 5-minute absorption period.

Participants were then given the stimulus story. They were asked to imagine that the situation was happening to them as they read it. After participants finished reading the story, which took approximately 5 minutes, a breath analyzer test was administered. In the alcohol and placebo conditions, the experimenter always stated that participants' BAC was 0.079%; participants were told it was zero in the no alcohol condition. Participants then spent approximately 30 minutes completing the questionnaire that assessed their perceptions of the scenario described in the vignette. When they were finished with this questionnaire, participants received another breath analyzer test. In the alcohol and placebo conditions, the experimenter always stated that participants' BAC was 0.081%; participants were told it was zero in the no alcohol condition. These two positive BACs were intended to sound comparable, with the slightly higher BAC mentioned the second time to enhance the perception that intoxication levels were not dropping. Finally, participants answered feedback questions that were designed to assess whether or not they were suspicious about any aspect of the study. Participants were thoroughly debriefed and paid \$10 per hour.

Students who received alcohol were required to remain in the laboratory until their BAC returned to 0.005%.

Stimulus story—A vignette of approximately 1,000 words described a potential date rape situation. Two college students run into each other at a party. They know each other casually from classes. They spend several hours together at the party dancing and drinking alcohol; the man has four drinks and the woman has three. He walks her back to her apartment and she invites him inside. After talking awhile, they begin kissing. The woman consents to kissing, but says “no” when the man tries to go further sexually. He tries several times to push her to go further and she uses several strategies to divert the man’s attentions including saying “no,” physically removing his hands from under her clothes and moving out of his reach. The story ends with the woman saying “no” again and the man exerting further verbal pressure “not to stop now.” The story line of the vignette was developed through pilot testing with students to ensure that the situation was credible and involving. The description of sexual activities was fairly explicit to maximize the likelihood that participants would find it sexually arousing. Male and female students reported that this was a very realistic situation that commonly occurred and that the level of sexual detail was arousing but not offensive. In pilot testing, both intoxicated and sober participants scored higher than 85% on a multiple choice test of the facts presented in the vignette.

Measures

Alcohol expectancies—Self-reported alcohol expectancies were measured during the telephone screening in order to reduce any reactivity that may have occurred if they were assessed immediately prior to administering alcohol. Alcohol expectancies in the domains of *aggression* and *sexual drive* were assessed using 5-point Likert-type scales with response options that ranged from “not at all” (1) to “very much” (5). These measures exhibited good discriminant validity in past research that included measures of social desirability, gender role beliefs, aggression, sexual self-esteem, and sociability (Abbey et al., 1999). They also had high internal consistency and test-retest reliability. Participants’ responses were summed and divided by the number of items in the subscale. Cronbach’s coefficient alpha was 0.86 for the 7-item aggression measure and 0.96 for the 6-item sexual drive measure. A sample aggression item is, “When drinking alcohol, it is easy for me to have a fight or argument.” A sample sexual drive item is, “When drinking alcohol, I am likely to initiate sex.”

Background measures—Prior to alcohol administration, participants completed several background measures. Only those relevant to the study are described here. *Casual attitudes about sex* were assessed with five questions adapted from Hendrick and Hendrick (1987) and Simpson and Gangestad (1991). Items included, “Sex without love is OK” and “One night stands are sometimes very enjoyable.” Responses were made using 7-point Likert scales with options that ranged from “strongly disagree” (1) to “strongly agree” (7). Cronbach’s coefficient alpha was 0.91.

A single item assessed participants’ *frequency of drinking alcohol when on a date*. Responses were made using 6-point Likert-type scales with options that ranged from

“never” (1) to “nearly every time or every time” (6). This item was selected because it involved alcohol consumption in the type of situation depicted in the vignette.

Questions about the vignette—After reading the vignette, participants answered several questions about their perceptions of the story. Participants were asked to what extent the man and the woman *acted appropriately* during the evening to evaluate their perceptions of the normality of their behavior. The primary dependent measure was a question that asked if sex occurred later that evening: *Was it more likely that they both wanted to have sex or that the man forced the woman?* This question was answered using a 7-point Likert-type scale with options that ranged from “definitely both wanted to have sex” (1) to “definitely the man forced the woman to have sex” (7).

To assess cognitive responses, participants were asked to *list the positive and negative consequences* of having sex under these circumstances from both the man’s and the woman’s perspective. They were then given a list based on pilot testing of common reasons for not having sex under these circumstances. For each reason, they were asked how *important that consequence* would be in the decision to have sex for the man and for the woman. Responses were made using 7-point Likert-type scales with options ranging from “not at all important” (1) to “extremely important” (7). The 4-item composite for the male character had an alpha of 0.84 and for the female character the alpha was 0.81. Participants were also asked how *sexually aroused* the man and woman felt at the end of the story. These questions were answered using 7-point Likert-type scales with options that ranged from “not at all” (1) to “very” (7).

Results

Blood alcohol concentrations

Participants in the alcohol condition were administered a dose of alcohol calculated to induce a peak BAC of 0.080% midway through answering the questionnaire. Consistent with this, participants who drank alcohol had a mean (SD) BAC of 0.073% (0.025) just before they started the questionnaire and 0.072% (0.013) when they completed it. Mean BACs prior to and following the questionnaire did not differ significantly between men and women (F ’s = 0.28, 0.00, 1/57 df, p ’s > .60, .94, respectively).

Manipulation checks

Participants were asked to estimate their highest BAC during the study. Those in the alcohol condition (mean [SD] = 0.081% [0.006]) and placebo condition (mean = 0.080% [0.005]) reported BACs that did not differ from each other, but were significantly higher than those of participants in the no alcohol condition (mean = 0.000% [0.003]; F = 6,424.68, 2/176 df, p < .001; follow-up Tukey comparison, p > .69, p ’s < .001, respectively). There was no significant difference between the BACs reported by men and women (F = 0.00, 1/177 df, p > .94). Participants were also asked to estimate how intoxicated they felt when they completed the questionnaire, using a 5-point scale with response options ranging from “not at all intoxicated” (1) to “extremely intoxicated” (5). Participants in the alcohol condition (mean [SD] = 3.75 [0.78]), placebo condition (mean = 2.25 [0.90]), and no alcohol condition

(mean = 1.03 [0.18]) all reported significantly different mean levels of intoxication ($F = 227.17$, 2/175 df, $p < .001$; follow-up Tukey comparison p 's $< .001$). There was no significant difference between men's and women's mean reported feelings of intoxication ($F = 1.14$, 1/176 df, $p > .28$).

To verify pilot findings that students could relate to the situation presented in the vignette, participants were asked how realistic and how interesting the story was. Using 7-point Likert-type scales with options ranging from "not at all" (1) to "very" (7), participants found the vignette to be highly realistic (mean = 6.34 [0.95]) and interesting (mean = 5.30 [1.44]). There were no significant differences in mean ratings of the vignette due to either drink condition (F 's = 0.81, 1.39, 2/177 df, p 's $> .44$, .25, respectively) or gender (F 's = 0.88, 0.14, 1/178 df, p 's $> .34$, .70, respectively).

Preliminary data analyses

Several preliminary data analyses were completed. The distributions of all variables were examined. As can be seen in Table 1, perceptions of the male character's sexual arousal were extremely high, which indicates the story was successful in presenting the man as wanting to have sex with the woman; however, this measure was too skewed to use in data analyses.

For a variable to mediate the relationship between alcohol consumption and perceptions of this potential date rape situation, it must be significantly related to drink condition. Based on past research, we considered as mediators participants' perceptions of: free recall of positive and negative consequences of having sex under these circumstances, the importance of negative consequences, the female character's sexual arousal and the appropriateness of the character's actions. Only the female character's sexual arousal and the appropriateness of the male character's actions were significantly related to participants' drink condition (F 's = 4.27, 5.23, 2/177 df, p 's $< .05$, respectively).

Path analyses

Path analysis is a method for examining direct and indirect effects among the variables in a theoretical model (Pedhazur, 1982). This technique involves a series of multiple regression analyses, with the dependent variable at one step becoming an independent variable at a later step. Because we were interested in mediation effects, this technique was a more appropriate data analysis approach than analysis of variance. We hypothesized that participants' alcohol consumption during the study, alcohol expectancy set, gender, self-reported alcohol expectancies, attitudes about casual sex and frequency of drinking alcohol on dates would affect participants' perceptions of the likelihood that the male character would force the female character to have sex. Based on the preliminary analyses presented above, two mediator variables were included between the set of independent variables and the final outcome measure of likelihood of forced sex occurring at the end of the vignette: perceptions of how sexually aroused the female character felt at the end of the story and perceptions of how appropriately the male character acted.

Figure 1 depicts the results of the path analyses. Initially, all the two-way interactions between gender, alcohol consumption, alcohol expectancy set and self-reported alcohol expectancies were examined; they were not significant and were removed from the model. There were several univariate gender differences in men's and women's responses (see Table 1). In multiple regression analyses, however, participants' gender was not significantly related to the mediators or dependent measures, thus it was removed from the model. Alcohol expectancy set (dummy coded as 0 = "did not expect to drink alcohol"; 1 = "did expect to drink alcohol") was also not significantly related to any outcome measures; thus it is not included in the figure.

Three variables had direct effects on perceptions of how sexually aroused the female character was at the end of the story ($R^2 = 0.15$, $F = 5.04$, 6/173 df, $p < .001$). Participants who consumed alcohol during the study thought the female character was more sexually aroused than did participants who did not consume alcohol (dummy coded as 0 = "did not drink alcohol"; 1 = "did drink alcohol"). Furthermore, the stronger the participants' alcohol expectancies regarding sex drive and the more frequently the participants drank alcohol on dates, the higher they rated the female character's sexual arousal (see Figure 1).

Three variables were significant predictors of participants' perceptions of how appropriately the male character acted toward the woman in the story ($R^2 = 0.27$, $F = 9.27$, 7/172 df, $p < .001$). Participants who consumed alcohol during the study felt that the male character acted more appropriately than did those who did not consume alcohol. Also, the more positive participants' attitudes about casual sex, and the more sexually aroused they thought the female character was, the more appropriately they thought the male character behaved (see Figure 1).

Finally, three variables were significant predictors of judgments of the likelihood that the male character would force sex on the female character ($R^2 = 0.27$, $F = 7.80$, 8/171 df, $p < .001$). The stronger participants' alcohol expectancies regarding aggression, the more appropriately they thought the male character acted, and the more sexually aroused they believed the female character was, the less likely they were to think forced sex would occur (see Figure 1). Alcohol consumption did not have a direct effect; however, its indirect effects on participants' judgments about the likelihood of forced sex totaled 0.15.

Discussion

This study replicates and extends past research that examines alcohol's effects on perceptions of potential forced sex situations. The man in the story, who was exerting consistent verbal pressure for the woman to have sex even though she repeatedly said "no." was viewed as acting most appropriately by participants who drank alcohol, by participants who had positive attitudes about casual sex and by participants who thought the woman character was very sexually aroused. Participants were more likely to perceive the woman in the story as being very sexually aroused when they drank alcohol, when they had strong alcohol expectancies regarding sex and when they frequently drank alcohol on dates. Alcohol consumption did not have a direct effect on perceptions of the likelihood of forced sex. It had an indirect effect, however, through its relationship to perceptions of sexual

arousal and appropriateness. These findings support the hypothesis that sexual arousal may be a particularly salient cue on which intoxicated individuals are likely to focus their attention (Gross et al., 2001; Norris et al, 2002). It is disturbing to find that the female character's perceived sexual arousal was interpreted as a sign that the male character's persistent verbal pressure was appropriate. Even when sexually attracted to someone, there may be many reasons to resist sexual intercourse that should be respected by partners (e.g., moral or religious values, concerns about pregnancy or sexually transmitted diseases).

Both the man and the woman in the story were depicted as drinking alcohol, thus participants' pre-existing alcohol expectancies were likely to be activated whether or not they drank alcohol. Alcohol expectancies regarding sex and aggression had significant main effects, although at different points in the model. Alcohol expectancies regarding sex drive were positively related to perceptions of the female character's sexual arousal. This positive relationship suggests that individuals who believe that alcohol increases people's sex drive are more likely to perceive a woman in an ambiguous situation as being sexually aroused. Alcohol expectancies regarding aggression, on the other hand, were negatively related to perceptions of the likelihood that the male character would force sex. This effect seems counterintuitive; we had initially hypothesized that individuals who strongly believe that alcohol increases aggressiveness would be more likely to believe that the male character would force sex. However, in the story, the man was portrayed as using only verbal strategies: he was not physically forceful. Perhaps among individuals who expect alcohol and aggression to co-occur, his actions seemed particularly nonaggressive because they had been anticipating a more forceful response to her refusals. We are not aware of any other study that considers the effects of self-reported alcohol expectancies in the domains of sex and aggression simultaneously. Although our findings need to be replicated, they suggest that prior beliefs about alcohol's effects may bias perceptions of the sexual behavior of intoxicated individuals.

It was surprising that there were no gender differences in perceptions of the likelihood that the male character would force sex. Women are the recipients of sexual assault prevention programming more frequently than men are, and we had expected women to be more aware of the potential dangers in this situation. This lack of gender differences may be a sign that participants were visualizing themselves in the situation. Past research suggests that women realize some behaviors, such as getting drunk at parties, put other women at risk of being sexually assaulted: they feel, however, that they personally are savvy enough to avoid men who cannot be trusted (Norris et al, 1996). It might also be the case that some women could recall similar circumstances in which they were with a man who was pressuring them to have sex, and that they were able to dissuade him.

When considering the implications of these findings, it is important to recall some of its limitations. Although participants thought the story was extremely realistic and involving, they were, as in all vignette research, making judgments about other people's behavior, not their own. Also, the male character used verbal coercion rather than physical force, and the story ended before sex occurred. The story line was developed to fit the prototypic sexual assault situation described by college students, in which they drink alcohol together at a party or bar, end up in an isolated setting, and engage in consensual kissing (Abbey et al.,

2001a; Harrington and Leitenberg, 1994). Participants would have been likely to evaluate the situation differently if the man were described as using extreme violence to obtain sex. However, verbal coercion is a more common strategy than physical force in acquaintance sexual assault (Abbey et al., 2001b; Harrington and Leitenberg, 1994; Norris et al., 1996). We wanted to end the story at the point at which the situation was likely to escalate to determine both the extent to which participants saw the potential risk in this situation and how alcohol affected these perceptions.

Although overall many of the effects were as expected, most participants did not perceive this as a particularly risky situation and did not expect forced sex to occur. Future studies may want to evaluate how participants respond to different endings to potential rape vignettes, as well as assess a broader range of likely outcomes. Past research has documented that the effects of alcohol consumption and alcohol expectancy set on sexual outcome measures are not always consistent and may depend on the perceived deviance of the depicted sexual behavior (George and Stoner, 2000).

These findings highlight the continued need for education about the circumstances in which sexual assault is common. Despite the increased sophistication of prevention programs, it is still easier for students to worry about attacks from unknown strangers than from dates, and to miss common warning signs such as intoxication and being in an isolated setting (Norris et al., 1996). These findings also suggest that college students with strong alcohol expectancies, who frequently drink alcohol on dates and who approve of casual sexual relationships, may be at heightened risk of sexual assault and would benefit from targeted programming that helps them see the potential negative outcomes likely in these types of situations. Although this study focused on sexual assault as a potential negative outcome, other negative outcomes such as pregnancy and sexually transmitted diseases also need to be emphasized.

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Figure 1.

Path analysis examining the effects of alcohol and sexual arousal on perceptions of the likelihood of forced sex. (The path coefficients are standardized betas. Only significant pathways are shown. Alcohol consumption was dummy coded: 0 = did not drink alcohol, 1 = did drink alcohol. * $p < .05$; ** $p < .01$; *** $p < .001$.)

Table I

Means (standard deviations) and one-way analyses of variance (ANOVAs) for effects of participant gender on independent and dependent variables

Variable	Participant gender		<i>F</i> , 1/178 df
	Women (<i>n</i> = 90) Mean (SD)	Men (<i>n</i> = 90) Mean (SD)	
Alcohol expectancies regarding aggression ^a	1.47 (0.59)	1.68 (0.72)	4.61 *
Alcohol expectancies regarding sexual drive ^a	2.48 (1.00)	3.14 (1.05)	18.93 [‡]
Frequency of drinking alcohol when on a date ^b	3.52 (1.39)	3.58 (1.52)	0.08
Casual attitudes about sex ^c	2.61 (1.49)	4.09 (1.60)	41.32 [‡]
Free recall of male character's positive consequences ^d	3.67 (1.60)	3.88 (0.95)	0.82
Free recall of male character's negative consequences ^d	2.19 (1.34)	2.38 (1.31)	0.91
Free recall of female character's positive consequences ^d	2.64 (1.38)	2.76 (1.52)	0.27
Free recall of female character's negative consequences ^d	3.50 (1.68)	3.33 (1.34)	0.54
Importance of male character's consequences ^c	3.71 (1.55)	4.56 (1.60)	13.22 [‡]
Importance of female character's consequences ^c	4.18 (1.43)	4.14 (1.33)	0.04
Male character's sexual arousal ^c	6.75 (0.72)	6.67 (0.70)	0.65
Female character's sexual arousal ^c	4.53 (1.42)	4.48 (1.55)	0.04
Appropriateness of male character's actions ^c	4.26 (1.24)	4.82 (1.34)	8.51 [†]
Appropriateness of female character's actions ^c	5.51 (1.16)	5.59 (1.12)	0.21
Likelihood of male character forcing sex ^c	4.51 (1.80)	4.33 (1.79)	0.48

^aRange = 1–5;

^bRange = 1–6;

^cRange = 1–7;

^dRange = 0–10.

* $p < .05$;

[†] $p < .01$;

[‡] $p < .001$.