



Published in final edited form as:

Subst Use Misuse. 2009 ; 44(0): 1329–1348. doi:10.1080/10826080902961419.

Alcohol's Role in Men's Use of Coercion to Obtain Unprotected Sex

ANTONIA ABBEY¹, MICHELE R. PARKHILL², ANGELA J. JACQUES-TIURA¹, and CHRISTOPHER SAENZ¹

¹Wayne State University, Detroit, Michigan, USA

²University of Washington, Seattle, Washington, USA

Abstract

Past sexual victimization has been identified as a predictor of women's sexual risk-taking. In order to develop effective prevention and treatment programs, research is needed that examines perpetrators' characteristics. Thus, the goal of this study was to examine predictors of men's willingness to use coercive strategies to obtain sex without a condom. Male college students (n = 72) completed a survey that assessed past sexual assault perpetration, hostility, past misperception of women's sexual cues, usual alcohol consumption, and usual condom use. One month later, they participated in an alcohol administration study and watched a video about a couple in a consensual sexual situation. Participants were asked to evaluate how justified they would be in using a variety of coercive strategies to make the woman have unprotected sex. In hierarchical multiple regression analyses, there was a significant main effect of past perpetration such that men who had previously committed sexual assault felt more justified using coercive strategies to obtain unprotected sex than did nonperpetrators. Acute alcohol consumption did not have a main effect; however, it interacted with hostility and misperception. Among participants who consumed alcohol prior to watching the video, the greater their preexisting hostility, the more justified they felt in using coercion. Similarly, the more frequently drinkers had misperceived women's sexual intentions in the past, the more justified they felt in using coercion. Based on these findings, several specific suggestions are made for prevention and treatment programs, including targeted communication skills and normative feedback interventions.

Keywords

Sexual assault; alcohol; condom use; hostility; misperception

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf> This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

Address correspondence to Antonia Abbey, Department of Psychology, Wayne State University, 5057 Woodward, Detroit, MI 48202. aabbey@wayne.edu.

Publisher's Disclaimer: The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Introduction

Approximately 20% of American women report that they have been victims of rape and an additional 30% report that they have been victims of some other form of sexual violence (Bureau of Justice Statistics, 2005; Koss, Gidycz, and Wisniewski, 1987; Tjaden and Thoennes, 1998). Risky sexual behavior occurs with disturbing frequency among women with a history of sexual violence (Arriola, Loudon, Doldren, and Fortenberry, 2005; Maman, Campbell, Sweat, and Gielen, 2000). For example, Molitor, Ruiz, Klausner, and McFarland (2000) found that low-income women who had been sexually assaulted had more sexual partners and were less likely to use condoms than were low-income women who had not been sexually assaulted. Similarly, female college students who had been sexually assaulted were more likely than nonassaulted women to engage in a variety of risky sexual behaviors, such as having sex without a condom and meeting new partners at bars (Davis, Combs-Lane, and Jackson, 2002). Most sexual assaults are committed by a date, spouse, or romantic partner, thus survivors may be unwilling to suggest using a condom out of fear of angering their partner and provoking a violent response (Maman et al., 2000). Even if this partner has not acted violently, sexually assaulted women's past experiences may make them uncomfortable asserting themselves and anxious about acting in ways that they believe may anger their partner (Quina, Morokoff, Harlow, and Zurbriggen, 2004).

Although there is a burgeoning literature focused on the impact of sexual violence on women's sexual risk-taking, there has not been a commensurate focus on perpetrators' behavior. Prior to developing prevention and treatment programs, research is needed to determine if sexual assault perpetrators are more likely than other men to force female partners to have sex without a condom. Research is also needed that examines the circumstances under which men are more or less willing to use coercive strategies to make a female partner have unprotected sex. This study begins to fill the void by examining the role of acute alcohol consumption, hostility, and misperception on sexual assault perpetrators' and nonperpetrators' hypothetical willingness to use coercive strategies to obtain unprotected sex. This study's hypotheses were developed based on several disparate literatures. The relevant research is briefly summarized below and then the study's hypotheses and findings are presented.

The Relationship Between Alcohol Consumption and Aggression

Approximately half of all crimes are committed when the perpetrator is intoxicated, including sexual assault (Abbey, Zawacki, Buck, Clinton, and McAuslan, 2004; Martin and Bryant, 2001; Pernanen, 1991; Testa, 2002). Longitudinal surveys of adolescent males have found strong relationships between alcohol use, delinquency, and violent behavior (Moffitt, Caspi, Harrington, and Milne, 2002; Welte, Barnes, Hoffman, Wieczorek, and Zhang, 2005). Alcohol administration studies, which have focused on aggression toward someone of the same sex, have consistently demonstrated that moderate doses of alcohol increase men's aggressive behavior (for reviews see Chermack and Giancola, 1997; Ito, Miller, and Pollock, 1996). Intoxicated male participants provide higher levels of shock to a fictitious male opponent than do placebo or control participants (Bailey and Taylor, 1991; Chermack and Taylor, 1995; Giancola, Godlaski, and Parrott, 2005; Parrott and Zeichner, 2002).

Only a handful of studies have examined the acute effects of alcohol on proxy measures of sexual aggression (Abbey, Buck, Zawacki, and Saenz, 2003; Gross, Bennett, Sloan, Marx, and Juergens, 2001; Johnson, Noel, and Sutter-Hernandez, 2000; Marx, Gross, and Adams, 1999; Norris, Davis, George, Martell, and Heiman, 2002). For example, Norris et al. (2002) asked male college students to read a story about a man using verbal and physical force to obtain sex from a date. As compared to sober and placebo participants, men who consumed alcohol prior to reading the story were less likely to perceive the sexual encounter as violent and more likely to believe the woman enjoyed it. Johnson et al. (2000) asked male college students to watch a videotape of a blind date in which a man and woman were shown meeting, talking, and leaving for a movie. When the woman acted interested in the man, moderately intoxicated participants were more accepting of the man in the story using force to obtain sex and expressed greater willingness to personally use force to obtain sex if they were in that situation as compared to sober and placebo participants.

Hostility as a Moderator of the Relationship Between Alcohol and Aggression

The effects of individual differences in hostility and anger have frequently been examined in alcohol administration studies that measure general aggression (Bailey and Taylor, 1991; Giancola et al., 2005; Giancola, Saucier, and Gussler-Burkhardt, 2003). Individuals with high scores on measures of trait hostility and anger tend to respond more aggressively when intoxicated than do individuals with low scores. For example, Giancola et al. (2003) found that intoxicated men with high behavioral and cognitive anger scores delivered significantly stronger levels of shock to a same-sex fictitious opponent than did placebo participants and drinkers with low-pre-existing anger scores. Given alcohol's effects on higher order cognitive skills including response inhibition, it is not surprising that individuals who are prone to anger are particularly likely to become aggressive when intoxicated (Abroms, Fillmore, and Marcuzinski, 2003; Curtin and Fairchild, 2003).

Individual differences in hostility and anger have not been systematically examined in alcohol administration studies of sexual assault. Norris, George, Davis, Martell, and Leonesio (1999) included a measure of hypermasculinity, which assesses individual differences in callous attitudes toward women and perceptions of aggression as manly. In an alcohol administration study in which men reacted to a story about a female sexual assault victim, they found that men who drank alcohol and were high in hypermasculinity were significantly less likely than other participants to respond empathically to the victim's signs of distress.

The Interrelationships Between Misperception of Women's Cues, Alcohol, and Sexual Aggression

There is a sizable literature which demonstrates that men perceive women as behaving more sexually and being more interested in a sexual relationship than do women (Abbey, 1982; Edmondson and Conger, 1995; Fisher and Walters, 2003). Misperception of sexual intent has frequently been linked to sexual assault perpetration (Abbey, McAuslan, and Ross, 1998; Muehlenhard and Linton, 1987). For example, Abbey et al. (1998) found with structural equation analyses that the more frequently men reported misperceiving women's sexual intent, the more sexual assaults they had perpetrated. Shea (1993) asked unacquainted

women and men to engage in a brief conversation. As found in past research, there was a main effect of gender with men perceiving their partners as behaving more sexually than did women. Additionally, among male participants there was a main effect of past sexual assault perpetration. Men who previously used verbal coercion to obtain sex from a woman perceived their partners as behaving more sexually than did noncoercers.

There is some evidence that alcohol may act synergistically with misperception during sexual assault incidents. Abbey, McAuslan, Zawacki, Clinton, and Buck (2001) collected detailed information from male college students about either a time they forced sex on a woman or their worst date. Sexual assaults involved greater alcohol consumption and a longer period of misperception than did worst dates. Furthermore, many perpetrators report that they use women's alcohol consumption as a sign of their sexual interest and justification for sexual aggression (Kanin, 1985).

The Relationship Between Acute Alcohol Consumption and Condom Use Behavior

Several alcohol administration studies have examined the effects of acute alcohol consumption on hypothetical condom use. Although these studies portray completely consensual sexual situations, they demonstrate that intoxicated men are frequently motivated to have sex without a condom. For example, MacDonald, Zanna, and Fong (1996) asked male college students to watch a video in which an attractive woman was interested in having sex with a man without a condom. They found that intoxicated and sober participants reported being equally sexually aroused and equally certain that having sex in this circumstance would be irresponsible. However, intoxicated men were more likely than sober men to report that they would have sex if they were in this situation. Maisto, Carey, Carey, and Gordon (2002) also examined young men's responses to a hypothetical consensual sexual situation. They found that intoxicated participants expressed more willingness to engage in sex without a condom and were less skilled in negotiating condom use with a hypothetical partner than were placebo or sober participants.

Overview of Study and Hypotheses

The goal of this study was to examine the mutual effects of past sexual assault perpetration, acute alcohol consumption, hostility, and misperception on men's responses to a hypothetical situation. Participants watched a video in which a young man and woman engaged in consensual kissing and touching. Participants were asked to imagine how they would respond if they wanted to have sex, but the woman was unwilling because a condom was not available. Main effects of past sexual assault perpetration were hypothesized. As compared to nonperpetrators, men who had previously committed sexual assault were expected to express greater willingness to use coercive strategies to make a woman have sex without a condom in this hypothetical situation. This hypothesis is partially an assessment of construct validity. Men who are willing to use coercive tactics to obtain sex should also be willing to use coercive tactics to obtain sex without a condom.

Acute alcohol consumption was expected to increase the use of coercion only among participants near their violence threshold (Fals-Stewart, Leonard, and Birchler, 2005). Most men are expected to have a high threshold for using violence to obtain sex; thus being

intoxicated is unlikely to increase their likelihood of being sexually violent. As described above, aggression researchers have demonstrated that anger and hostility exacerbate the effects of alcohol consumption, particularly when people feel provoked (Giancola et al., 2005; Parrott and Zeichner, 2002). Hostility is the cognitive component of aggression and is operationalized with items that focus on resentment, ill will, and suspicion (Buss and Perry, 1992). Thus, we hypothesized that men who had high levels of hostility and consumed alcohol would be more willing to use coercive strategies than would other men because they would resent the woman for insisting on using a condom and suspect that she was purposely trying to upset them. Their hostility would make these men feel justified in using whatever strategies were required to get what they wanted from the woman.

Acute alcohol consumption and past misperception were also hypothesized to have interactive effects. Men's misperception of women's sexual intent has frequently been attributed to self-fulfilling hypotheses (Abbey, Zawacki, and Buck, 2005). If a man thinks that a woman is sexually attracted to him, he will focus on cues that fit this hypothesis and ignore cues that a less biased observer would have noticed. Similarly, intoxicated individuals tend to focus on the most salient cues in a situation and find it difficult to process contradictory information (Steele and Josephs, 1990; Taylor and Leonard, 1983). Thus, we hypothesized that men who frequently misperceived women and consumed alcohol would be more willing to use coercive strategies than would other men because they would focus on her initial willingness to have sex and ignore her insistence on using a condom. These men are likely to feel justified using coercion to obtain unprotected sex because their biased appraisal of the woman's behavior will make them feel that she has "led them on."

Most aggression and sexual decision-making studies have not found placebo effects; alcohol's effects were associated with actual alcohol consumption rather than the belief that one had consumed alcohol (Chermack and Giancola, 1997; Ito et al., 1996; MacDonald et al., 1996; Maisto et al., 2002). In the few relevant sexual aggression studies, the findings regarding placebos have been mixed (Gross et al., 2001; Johnson et al., 2000; Marx et al., 1999; Norris et al., 2002). Although a placebo condition was included in this study, based on the predominant findings in the aggression literature we hypothesized that placebo participants' responses would be similar to those of sober control participants who knew they were not drinking alcohol.

Method

Participants

Participants were 72 male college students at a large urban university. They were recruited from enrollment lists and advertisements posted on campus. Participants were required to be of the legal drinking age ($M = 25.21$, $SD = 4.62$). Sixty percent of participants (60%) were white, 27% were African-American, 8% were Asian, 4% were Hispanic, and 1% was Arabic. On average, participants consumed 49.12 ($SD = 38.74$) drinks per month.

Procedures

The study's procedures were approved by the University's Institutional Review Board. Potential participants were contacted by telephone and asked if they were interested in participating in a two-part study of health and relationships. They were told that if they were eligible, Part 1 would involve completing a survey and Part 2 would involve participating in a laboratory study in which they might drink alcohol. Potential participants were screened to verify that they were 21 years of age or older, had consumed at least one alcoholic beverage within the past 30 days, had consumed at least four drinks on one occasion in the past 12 months, had no history of alcohol or drug misuse, and no health problems or current medication use that contraindicated alcohol consumption (National Advisory Council on Alcohol Abuse and Alcoholism, 2005). Furthermore, due to the study's focus on men's potential willingness to coerce a new female partner to have sex without a condom, they were also required to be single and to date women.

Survey Administration—Individuals who met the study criteria and expressed interest in participating were mailed an information sheet describing the study which contained all elements of informed consent, a questionnaire, a payment sheet, and two stamped envelopes. Questionnaires and payment sheets were mailed back in separate envelopes. Only arbitrary identification numbers were used on questionnaires, thus, no personally identifying information was included in that envelope. After participants returned their questionnaire and payment sheet, they were mailed a \$25 money order or were given research participation credit in an eligible class. Seventy-nine percent of eligible participants completed the survey.

A modified version of the Sexual Experiences Survey (SES) was used to assess sexual assault perpetration since the age of 14 (Koss et al., 1987). This measure is described in more detail below. The first author reviewed participants' responses and classified them as either perpetrators or nonperpetrators. Random assignment to drink conditions was conducted within each group to insure equal numbers of perpetrators and nonperpetrators in each condition. Only the first author knew participants' perpetration status and she did not serve as an experimenter.

Alcohol Administration Session—Approximately one month after returning the survey, eligible individuals were telephoned and asked to participate in a study examining alcohol's effects on social reactions. They were asked to abstain from alcohol for 24 hr and from food for 4 hr prior to their session. When they arrived at the laboratory, participants were seated in private rooms and given a breath analysis test (Alco-Sensor IV, Intoximeters Inc., St. Louis, MO) to confirm that they had a blood alcohol concentration (BAC) of zero. Participants then verified their health screening information and completed the informed consent.

Participants were randomly assigned to one of three drink conditions: sober, placebo, or alcohol. One experimenter poured participants' drinks and administered breath tests and a second experimenter, who was unaware of participants' drink condition, administered all other aspects of the study (Rosenhow and Marlatt, 1981). Participants in the alcohol

condition were given a dose of 80-proof Absolut vodka (2.00 g/kg body weight ratio) calculated to induce a peak BAC of 0.080% (approximately four drinks). Past research suggests that 0.080% BAC is sufficient to impair cognitive functions (Peterson, Rothfleisch, Zelazo, and Pihl, 1990). An antiplacebo condition (told not drinking alcohol but actually given alcohol) was not included because it typically fails at BAC levels higher than 0.050% (Hull and Bond, 1986; Martin and Sayette, 1993).

Vodka was mixed in a 3:1 ratio with lime-flavored Canada Dry tonic water and then poured evenly into three cups. Participants in the sober and placebo conditions were given an amount of tonic that was equivalent to the total fluid content in the alcohol formula. Sober participants' beverages were poured only from a tonic bottle. Placebo participants' beverages were poured from tonic and vodka bottles; however, the vodka bottle contained flattened tonic. All participants saw the experimenter pour their drinks and put a squirt of lime into each of them. For sober and intoxicated participants, this container held lime juice. For placebo participants, this container held vodka. A squirt of vodka provides the smell and taste of vodka to enhance the deception for placebo participants, but it does not provide enough alcohol to affect their BAC (Sayette, Smith, Breiner, and Wilson, 1992).

Participants were given 5 min to consume each drink, followed by a 5-min absorption period. Participants entertained themselves during this 20-min interval by playing a computer game that required them to stack blocks compactly. Next, they were given a breath analysis test. Participants in the sober condition were told that their BAC was zero. Participants in the placebo and alcohol conditions were told their BAC was 0.079%. Participants then watched a video (described below). When the video ended, the computer presented a series of questions (described below). Participants were then given another breath analysis test. Participants in the sober condition were again told that their BAC was zero. Participants in the placebo and alcohol conditions were told that their BAC was 0.081%, suggesting that their level of intoxication was stable. Participants completed several unrelated tasks and then answered feedback questions to determine if they had concerns or suspicions about the study. All participants were then fully debriefed. Participants who consumed alcohol remained at the laboratory until they reached a BAC of 0.005% or 0.030% if a responsible party was available to drive them home. During detoxification, participants were given snacks and could watch movies and play video games. All participants were paid \$15 an hour for their time or were given research participation credit.

Stimulus Materials—Participants watched an 8-min video about two college students, Lisa and Mark. They were asked to put themselves in Mark's place as they watched the video and to imagine that this experience was happening to them. This was a condensed version of a video previously developed by the research team (Abbey, Saenz, Buck, Parkhill, and Hayman, 2006). The script was based on focus groups and pilot testing with members of the target population and the video was professionally produced. In the first scene, Mark and Lisa talk to each other outside a classroom after taking final exams. Mark encourages Lisa to attend a party he's going to that evening. In the second scene, Mark greets Lisa when she arrives at the party. They are shown laughing, playing cards with others, and talking alone on a couch. As the party is ending, Mark invites Lisa to his apartment. In the third scene,

Mark and Lisa are on a couch at Mark's apartment looking through a photo album. They begin to kiss and touch each other and then the film fades out.

During the course of the evening, each character consumes four alcoholic beverages. To enhance participants' ability to identify with the characters in the video, two parallel versions were developed, one with Caucasian main characters and one with African American main characters. The two versions were filmed simultaneously so that each scene was identical except for the ethnicity of the actors. These two ethnic groups were selected because they comprise the majority of the students where the study was conducted. Students from other ethnic groups were asked to select the video they preferred to watch.

Measures

The self-administered survey that participants completed a month prior to the alcohol administration session contained a variety of measures including sexual assault perpetration, hostility, misperception, alcohol consumption, and condom use. The questionnaire that participants completed immediately after viewing the video assessed how justified they would be in using various types of coercive strategies to obtain sex without a condom if they were in this situation.

Sexual Assault Perpetration—A modified version of the SES was used (Abbey, Parkhill, BeShears, Clinton-Sherrod, and Zawacki, 2006; Koss et al., 1987). Participants were asked about times since the age of 14 that they had used some type of coercive strategy to make a woman have sex with them when they knew she did not want to have sex. Five types of forced sexual outcomes were assessed: sexual contact (kissing, hugging, sexually touching); attempted sexual intercourse; and completed oral, vaginal, and anal sex. Type of sex was crossed with three types of tactics: verbal pressure (continual arguments, lies, anger), alcohol or drugs (got woman intoxicated or took advantage of intoxicated woman), and physical force (threats of or use). Not all of the acts assessed with this instrument constitute criminal behavior; however, an affirmative response indicated that participants had knowingly used some type of coercive strategy to obtain sex from an unwilling woman. This measure has demonstrated good reliability and validity (Koss and Gidycz, 1985; Koss et al., 1987). Cronbach's coefficient alpha in this study was .87. For the purposes of this study, participants were divided into two mutually exclusive groups: those who responded yes to one or more of the questions were coded as sexual assault perpetrators (1) and those who responded no to all of the questions were coded as nonperpetrators (0).

Hostility—Participants completed Buss and Perry's (1992) 8-item Hostility scale. A sample item is, "I wonder why sometimes I feel so bitter about things." Responses were made on 5-point scales with options that ranged from *disagree* to *agree*. This measure has demonstrated good reliability and validity (Buss and Perry, 1992). Cronbach's coefficient alpha was .71.

Past Misperception of Women's Sexual Cues—Participants were asked how frequently they had "misperceived a woman's friendliness as a sexual come-on? That is, she was just trying to be nice but you assumed she was sexually attracted to you?" This single item measure has demonstrated good discriminant and convergent validity in several studies

(Abbey et al., 1998; Abbey et al., 2001; Jacques-Tiura, Abbey, Parkhill, and Zawacki, 2007).

Alcohol Consumption—Participants were asked to think back over the past 12 months and indicate how many days they consumed beer, wine, wine coolers, or liquor in a typical month. They were then asked how many drinks they usually consumed per day on the days they drank alcohol with a drink defined as 12 oz. (354.88 ml) of beer, 5 oz. (147.87 ml) of wine, a 10 oz. (295.74 ml) wine cooler, or 1.5 oz. (44.36 ml) of liquor. These two questions were multiplied to create a quantity by frequency measure of total monthly alcohol consumption (Hilton and Clark, 1987; National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2003). Scores were skewed; thus, they were winsorized.

Condom Use—Participants were asked how often they used a condom when having intercourse during the past year (Schroder, Carey, and Venable, 2003). Responses were made on a 7-point scale with options that ranged from *never* to *always*.

Justified in Using Coercive Strategies to Obtain Sex Without a Condom—After the video ended, text appeared on the computer screen which is paraphrased here. Participants were asked to imagine that you (second person used throughout) and Lisa started to undress each other. Lisa asked if you had any protection and you said no. Lisa said that she was on the pill but she thought you should use condoms. Imagine that Lisa has gotten you really excited and you don't want to wait. Participants were asked how justified they would be in making various statements. Sample statements are, “Tell her that you just had an AIDS test that came back clean (even though you haven't been tested.)”; “Tell her that you'll never talk to her again if she leaves now.”; “Tell her you'll spread rumors about her if she leaves now.” and “Give her the rough sex she deserves after teasing you.” Responses to the eight questions were made on 7-point scales with options ranging from *not at all justified* to *extremely justified*.

Results

Manipulation Checks

On a 7-point scale, with options ranging from *not at all* to *very*, participants indicated that they provided very accurate responses to the questions asked after the video ($M = 6.51$, $SD = 0.60$). On 5-point scales, with options ranging from *not at all* to *very*, participants reported that they thought the study tasks were interesting ($M = 4.62$, $SD = 0.68$) and important ($M = 4.33$, $SD = 0.82$). Responses did not significantly differ due to drink condition or perpetration status.

Participants who consumed an alcoholic beverage had a mean BAC of 0.081% ($SD = 0.021$) immediately before they began watching the video and a mean of 0.071% ($SD = 0.010$) after they completed the questionnaire. Prior to the debriefing, participants were asked several questions to verify that placebo participants thought they consumed alcohol. There was a main effect of drink condition on participants' estimates of their highest BAC, $F(2, 69) = 810.51$, $p < .001$. Follow-up Tukey's Honestly Significant Differences planned comparisons (p 's $< .05$) indicated that BAC estimates were comparable for participants who consumed

alcohol ($M = 0.081$, $SD = 0.004$) and those who consumed the placebo beverage ($M = 0.078$, $SD = 0.013$), and that both of these groups' estimates were significantly different from those made by sober participants ($M = 0.000$, $SD = 0.000$). There was also a main effect of drink condition on participants' estimates of how intoxicated they were as they completed the questionnaire, $F(2, 69) = 95.07$, $p < .001$. On a 5-point response scale, with options ranging from *not at all intoxicated* to *extremely intoxicated*, participants who consumed alcohol reported feeling significantly more intoxicated ($M = 3.56$, $SD = 0.77$) than did placebo ($M = 2.63$, $SD = 0.82$) or sober participants ($M = 1.00$, $SD = 0.00$). The scores of placebo and sober participants were also significantly different from each other (all p 's $< .05$). These differences in self-reported intoxication are commonly found in alcohol administration studies (Fromme, D'Amico, and Katz, 1999; Maisto et al., 2002).

Preliminary Analyses

Table 1 includes the means and standard deviations on the survey measures used in the regression analyses. A univariate analysis of variance (ANOVA) was conducted and there were no significant differences associated with drink condition, verifying that random assignment created equivalent groups. ANOVA was also used to compare perpetrators to nonperpetrators and there were no significant differences on any of the predictors. There was one marginal effect with perpetrators ($M = 4.59$, $SD = 5.27$) reporting somewhat more past misperceptions of women's sexual cues than nonperpetrators ($M = 2.44$, $SD = 4.55$), $F(1, 70) = 3.40$, $p < .07$.

Hierarchical Multiple Regression Analyses

Participants' justifications for using coercive strategies to have sex without a condom were examined with hierarchical multiple regression analyses (Tabachnick and Fidell, 2007). The predictor variables were centered so they could be included in interaction terms (Pedhazur, 1997). The first step included usual alcohol consumption and condom use as covariates, as well as the main effects of the predictor variables from the survey session. The second step included participants' alcohol condition. Thus the effects of acute alcohol consumption on justifications for not using a condom were evaluated after controlling for usual alcohol consumption and usual condom use. The third step included two-way interactions. Initially, two contrast terms were formed to examine alcohol's effects. The first contrast compared drinkers to placebo and sober participants and the second contrast compared placebo to sober participants (Pedhazur, 1997). Placebo and sober participants never differed, thus their responses were combined to reduce the number of contrast codes required. The three-way interactions were not significant, thus they are not included in the final model.

As can be seen in Table 2, the only significant predictor on the first step was perpetration status. As compared to nonperpetrators, men who had previously committed some type of sexual assault felt more justified in using coercive strategies to obtain sex without a condom. The first step explained 13% of the variance in justification ratings.

The main effect of alcohol consumption, which was entered on the second step, was not significant. The two-way interactions were entered on the third step and both the interaction between alcohol consumption and hostility and the interaction between alcohol consumption

and misperception were significant. The two-way interactions explained an additional 26% of the variance in justification ratings. Aiken and West's (1991) procedures were followed to graph the significant interactions, with scores plus or minus one standard deviation of the distribution of the independent variable used in the calculations.

Figure 1 displays the interaction between drink condition and hostility. For nondrinkers, there was no relationship between hostility and justification for using coercive strategies, $t(59) = -0.71, p = \text{n.s.}$ However for drinkers, the greater their preexisting hostility, the more justified they felt in using coercive strategies, $t(59) = 2.12, p < .05$.

As can be seen in Figure 2, the interaction between drink and condition and misperception exhibited a similar pattern. For nondrinkers, there was no relationship between misperception and justification for using coercive strategies, $t(59) = -0.12, p = \text{n.s.}$ However for drinkers, the more frequently they had misperceived women's degree of sexual interest in the past, the more justified they felt in using coercive strategies, $t(59) = 2.03, p < .05$.

Discussion

As hypothesized, men who reported that they had previously forced a woman to engage in some type of sex with them felt justified in using coercive strategies to obtain sex without a condom from a reluctant woman. These findings confirm the fears that some women have expressed about potentially provoking verbal and/or physical violence if they ask their partner to use a condom (Maman et al., 2000; Quina et al., 2004). Furthermore, the combination of alcohol consumption with individual difference characteristics made some men feel more justified in using coercion to obtain unprotected sex. Although alcohol administration research has high internal validity, the use of proxy measures reduces external validity. Participants provided hypothetical judgments and the questions focused on verbally coercive strategies because it seemed unlikely that participants would express willingness to use physical violence under these supervised conditions. It would be valuable to replicate these findings using survey research methods in which participants were asked what they said and did if they wanted to have sex without a condom but their partner did not. This type of triangulation of results using different methodologies would increase confidence in these findings.

With the above caveats, the results from this study have important prevention and treatment implications. Women who have been sexually assaulted are at heightened risk of engaging in unprotected sex because they may be afraid to disagree with a reluctant partner out of concern that he will use some type of coercion to obtain what he desires from her. Counselors who work with sexual assault survivors need to explore this issue with clients and help them develop nonconfrontational strategies to discuss condom use with partners. Developers of HIV/AIDS risk reduction programs for women also need to be aware of this issue so that it can be sensitively addressed in their interventions. Women's safety concerns need to be taken seriously by all professionals; clients should never be made to feel inept because they put their immediate physical safety first.

Prevention efforts need to focus on men because they are the perpetrators of these acts. This study's findings suggest that alcohol programs should focus on men who have high hostility levels and who frequently misperceive women's cues. Some of these men may benefit from targeted interventions that help them identify the effects that alcohol has on their treatment of women. Programs that provide men with opportunities to practice making sexual requests with trained female facilitators in a supervised setting would help them learn how to identify their use of verbally coercive strategies. Furthermore, if participants engaged in these practice sessions when sober and when intoxicated and later viewed videotapes of the sessions, they could examine the circumstances under which they became more forceful when intoxicated. Individualized follow-up sessions could focus on triggers for violence and anger management strategies to help these men avoid using coercion with sexual partners.

Men who frequently misperceive women's friendly cues as conveying sexual intent may benefit from communication skills programs. Past attempts to teach social skills to sexual assault perpetrators suggest that different perpetrators may have different types of deficits and that "one size fits all" programs are ineffective (Treat, McFall, Viken, and Kruschke, 2001). Some men may view any positive behavior as a sexual signal and need to develop more sensitive criteria. Other men may have trouble identifying negative affect and miss cues intended to warn them off when they have gone further than a woman wants. A subgroup of perpetrators may actually be very skilled at decoding women's cues and use this expertise to tailor their coercive strategies to maximize their effectiveness with individual women (Abbey et al., 2005). Serious efforts to reduce misperception need to first focus on identifying the types of skill deficits that individuals have. Men could watch and evaluate videotapes which depict a heterosexual dyad with the woman responding to the man's sexual advances in a variety of ways, both positive and negative. As suggested earlier, men could also watch some videotapes when sober and some when intoxicated to determine if they made more errors or different types of errors when intoxicated. Individualized interventions could be developed after determining the types of cues that individuals were most likely to misjudge. Some men may learn that they rely too much on their own sexual desire when deciding if a woman is sexually attracted to them, especially when they are intoxicated. A simple strategy is to always ask first, rather than assuming that a sexual advance is acceptable.

Brief interventions have been effectively used with diverse populations to reduce negative health behaviors, including heavy drinking and risky sexual behavior (Kiene and Barta, 2006; Lewis, Neighbors, Oster-Aaland, Kirkeby, and Larimer, 2007; Moyer and Finney, 2005). These brief interventions typically use elements of motivational interviewing and emphasize the importance of nonconfrontational techniques that elicit self-motivation for change (Miller and Rollnick, 1991). A basic tenet of these interventions is that many people believe that their peers engage in and approve of negative health habits much more than they actually do. Thus, normative feedback is frequently used to challenge participants' perceptions of how other members of their social group behave. For example, Chernoff and Davison (2005) randomly assigned sexually active college students to either a control condition in which they read pamphlets about AIDS risk reduction or to a 20-min self-administered normative feedback intervention. Students in the normative feedback condition were asked to estimate what percent of students at their school used condoms, had multiple

sexual partners, and had sex when intoxicated. Then they were presented with actual prevalence data collected earlier from a large sample of students at that university. As found in other research, most students thought that risky sexual behaviors were much more common than they actually were, thus this normative information served a corrective function. Participants were then provided with a list of sexual risk reduction behavior change goals and asked to select those that they could commit to trying during the next month. In the one month follow-up assessment, men who participated in the normative intervention reported significantly more condom use than did men in the control condition. The authors argued that the normative information provided participants with a rationale for increasing their condom use and the goal setting exercise encouraged them to reflect on their own behavior and make a commitment to initiate change.

Although we are not aware of any brief interventions focused on men who try to force their sexual partners to have sex without a condom, the past success of these interventions suggest that this is a promising approach that should be evaluated in future research. Normative information about the low prevalence of this behavior could be used to elicit self motivation to change. For some men, brief interventions may not be enough and cognitive behavioral therapy might be needed, particularly for men with high levels of hostility who are likely to be resistant to change. These men may also benefit from sessions led by trained counselors in which they interact with high-status peers who have positive images of women and do not use coercive strategies to fulfill their sexual needs. Nonconfrontational strategies would be particularly important for men who are already high in hostility and inclined to blame others for their problems.

Concluding Comments

In this study, alcohol's effects occurred in interaction with other variables. Men who were high in hostility and men who had a history of misperceiving women's sexual cues felt more justified than other men in using coercive strategies when intoxicated. Although universal substance misuse and violence prevention programs are important, selective interventions that target high-risk men need to be developed based on existing theory and empirical research. Other individual difference variables such as narcissism, psychopathy, and impersonal sex have also been linked to sexual assault perpetration and should be included in future research (Malamuth, 2003). The prevention and treatment suggestions made in this paper are based on this study's findings; however, their effectiveness must be demonstrated before being widely implemented.

Acknowledgments

This research was supported by the National Institute on Alcohol Abuse and Alcoholism (AA-13000).

Biographies



Antonia Abbey is a professor of psychology at Wayne State University. She received her PhD in social psychology from Northwestern University. She has a longstanding interest in women's health and reducing violence against women. Her research interests in the domain of sexual assault include understanding the causes of sexual assault; alcohol's role in sexual assault; and sexual assault measurement issues. She is also interested in alcohol misuse prevention in adolescents and young adults. This research has been funded by the National Institute on Alcohol Abuse and Alcoholism, the National Institute of Mental Health, and the Department of Education. She has published more than 75 journal articles and book chapters and has served on a variety of national advisory committees.



Michele R. Parkhill is a postdoctoral fellow at the University of Washington. She received her PhD in social psychology from Wayne State University. Her research interests include the role of alcohol in sexual assault perpetration and women's risky sexual decision making.



Angela J. Jacques-Tiura is a social psychology doctoral student at Wayne State University. Her research interests include predictors of sexual assault perpetration and factors affecting sexual assault survivors' well-being. She has published several articles and presented research at numerous national conferences.

Christopher Saenz is a social psychology doctoral student at Wayne State University. His dissertation research focuses on identifying early risk factors in sexual assault perpetrators,

including personality characteristics. He is also interested in measurement issues associated with the assessment of attitudes toward sexually explicit materials.

Glossary

Blood alcohol concentration (BAC)	The proportion of alcohol to blood in the body, expressed as a percentage of grams of alcohol per deciliter of blood. A BAC of .080% is the legal limit for operating a vehicle in the United States.
Breath analysis test	Provides a measure of individuals' BAC. Participants breathe deeply into a handheld device which calculates the proportion of alcohol in the body within 45 s.
Institutional Review Board (IRB)	A committee that oversees and approves human and animal research conducted at a University.
Rape	The legal definition of rape varies across jurisdictions within the United States; however, it is typically defined as vaginal, anal, or oral sexual intercourse obtained through force or threat of force; lack of consent; or inability to give consent due to age, intoxication, or mental status.
Sexual Assault	In the United States, other types of forced sex (in addition to rape) are described in the criminal code, although these laws vary considerably across jurisdictions. Most researchers define sexual assault as the full range of forced sexual activities including physically forced sexual contact (e.g., sexual touching), verbally coerced sexual intercourse, and rape.

References

- Abbey A. Sex differences in attributions for friendly behavior: do males misperceive females' friendliness? *Journal of Personality and Social Psychology*. 1982; 42:830–838.
- Abbey A, Buck PO, Zawacki T, Saenz C. Alcohol's effects on perceptions of a potential date rape. *Journal of Studies on Alcohol*. 2003; 64:669–677. [PubMed: 14572189]
- Abbey A, McAuslan P, Ross LT. Sexual assault perpetration by college men: the role of alcohol, misperception of sexual intent, and sexual beliefs and experiences. *Journal of Social and Clinical Psychology*. 1998; 17:167–195.
- Abbey A, McAuslan P, Zawacki T, Clinton AM, Buck PO. Attitudinal, experiential, and situational predictors of sexual assault perpetration. *Journal of Interpersonal Violence*. 2001; 16:784–807.
- Abbey A, Parkhill MR, BeShears R, Clinton-Sherrod AM, Zawacki T. Cross-sectional predictors of sexual assault perpetration in a community sample of single African American and Caucasian men. *Aggressive Behavior*. 2006; 32:54–67.
- Abbey A, Saenz C, Buck PO, Parkhill MR, Hayman LW. The effects of acute alcohol consumption, cognitive reserve, partner risk, and gender on sexual decision-making. *Journal of Studies on Alcohol*. 2006; 67:113–121. [PubMed: 16536135]
- Abbey A, Zawacki T, Buck PO. The effects of past sexual assault perpetration and alcohol consumption on men's reactions to women's mixed signals. *Journal of Social and Clinical Psychology*. 2005; 24:129–155.

- Abbey A, Zawacki T, Buck PO, Clinton AM, McAuslan P. Sexual assault and alcohol consumption: what do we know about their relationship and what types of research are still needed? *Aggression and Violent Behavior*. 2004; 9:271–303.
- Abroms BD, Fillmore MT, Marczinski CA. Alcohol-induced impairment of behavioral control: effects on the alteration and suppression of prepotent responses. *Journal of Studies on Alcohol*. 2003; 64:687–695. [PubMed: 14572191]
- Aiken, LS.; West, SG. *Multiple regression: testing and interpreting interactions*. Sage Publications; Thousand Oaks, CA: 1991.
- Arriola KRJ, Louden T, Doldren MA, Fortenberry RM. A meta-analysis of the relationship of child sexual abuse to HIV risk behavior among women. *Child Abuse and Neglect*. 2005; 29:725–746. [PubMed: 15979712]
- Bailey DS, Taylor SP. Effects of alcohol and aggressive disposition on human physical aggression. *Journal of Research on Personality*. 1991; 25:334–342.
- Bureau of Justice Statistics. *Violent victimization of college students, 1995–2002*. U.S. Department of Justice. NCJ; Washington DC: 2005. p. 206836
- Buss AH, Perry M. The aggression questionnaire. *Journal of Personality and Social Psychology*. 1992; 63:452–459. [PubMed: 1403624]
- Chermack ST, Giancola P. The relationship between alcohol and aggression: an integrative research review. *Clinical Psychology Review*. 1997; 6:621–629. [PubMed: 9336688]
- Chermack ST, Taylor SP. Alcohol and human physical aggression: pharmacological versus expectancy effects. *Journal of Studies on Alcohol*. 1995; 56:449–456. [PubMed: 7674681]
- Chernoff RA, Davison GC. An evaluation of a brief HIV/AIDS prevention intervention for college students using normative feedback and goal setting. *AIDS Education and Prevention*. 2005; 17:91–104. [PubMed: 15899748]
- Curtin JJ, Fairchild BA. Alcohol and cognitive control: implications for regulation of behavior during response conflict. *Journal of Abnormal Psychology*. 2003; 112:424–436. [PubMed: 12943021]
- Davis JL, Combs-Lane AM, Jackson TL. Risky behaviors associated with interpersonal victimization. *Journal of Interpersonal Violence*. 2002; 17:611–629.
- Edmondson CB, Conger JC. The impact of mode of presentation on gender differences in social perception. *Sex Roles*. 1995; 32:169–183.
- Fals-Stewart W, Leonard KE, Birchler GR. The occurrence of male-to-female intimate partner violence on days of men's drinking: the moderating effects of antisocial personality disorder. *Journal of Consulting and Clinical Psychology*. 2005; 73:239–248. [PubMed: 15796631]
- Fisher TD, Walters AS. Variables in addition to gender that help explain differences in perceived sexual interest. *Psychology of Men and Masculinity*. 2003; 4:154–162.
- Fromme K, D'Amico EJ, Katz EC. Intoxicated sexual risk taking: an expectancy or cognitive impairment explanation? *Journal of Studies on Alcohol*. 1999; 60:54–63. [PubMed: 10096309]
- Giancola PR, Godlaski AJ, Parrott DJ. “So I can't blame the booze?”: dispositional aggressivity negates the moderating effects of expectancies on alcohol-related aggression. *Journal of Studies on Alcohol*. 2005; 66:815–824. [PubMed: 16459943]
- Giancola PR, Saucier DA, Gussler-Burkhardt NL. The effects of affective, behavioral, and cognitive components of trait anger on the alcohol-aggression relation. *Alcoholism: Clinical and Experimental Research*. 2003; 27:1944–1954.
- Gross AM, Bennett T, Sloan L, Marx BP, Juergens J. The impact of alcohol and alcohol expectancies on male perception of female sexual arousal in a date rape analog. *Experimental and Clinical Psychopharmacology*. 2001; 9:380–388. [PubMed: 11764014]
- Hilton ME, Clark WB. Changes in American drinking patterns and problems, 1967–1984. *Journal of Studies on Alcohol*. 1987; 48:515–522. [PubMed: 3500367]
- Hull JG, Bond CF. Social and behavioral consequences of alcohol consumption and expectancy: a meta-analysis. *Psychological Bulletin*. 1986; 99:347–360. [PubMed: 3714923]
- Ito TA, Miller N, Pollock VE. Alcohol and aggression: a meta-analysis on the moderating effects of inhibitory cues, triggering events, and self-focused attention. *Psychological Bulletin*. 1996; 120:60–82. [PubMed: 8711017]

- Jacques-Tiura AJ, Abbey A, Parkhill MR, Zawacki T. Why do some men misperceive women's sexual intentions more frequently than others do? An application of the Confluence model. *Personality and Social Psychology Bulletin*. 2007; 33:1467–1480. [PubMed: 17933743]
- Johnson JD, Noel NE, Sutter-Hernandez J. Alcohol and male acceptance of sexual aggression: the role of perceptual ambiguity. *Journal of Applied Social Psychology*. 2000; 30:1186–1200.
- Kanin EJ. Date rapists: differential sexual socialization and relative deprivation. *Archives of Sexual Behavior*. 1985; 14:219–231. [PubMed: 4004546]
- Kiene SM, Barta WD. A brief individualized computer-delivered sexual risk reduction intervention increases HIV/AIDS preventive behavior. *Journal of Adolescent Health*. 2006; 39:404–410. [PubMed: 16919803]
- Koss MP, Gidycz CA. Sexual Experiences Survey: Reliability and validity. *Journal of Consulting and Clinical Psychology*. 1985; 53:422–423. [PubMed: 3874219]
- Koss MP, Gidycz CA, Wisniewski N. The scope of rape: Incidence and prevalence of sexual victimization in a national sample of higher education students. *Journal of Consulting and Clinical Psychology*. 1987; 55:162–170. [PubMed: 3494755]
- Lewis MA, Neighbors C, Oster-Aaland L, Kirkeby BS, Larimer ME. Indicated prevention for incoming freshmen: Personalized normative feedback and high-risk drinking. *Addictive Behaviors*. 2007; 32:2495–2508. [PubMed: 17658695]
- MacDonald TK, Zanna MP, Fong GT. Why common sense goes out the window: effects of alcohol on intentions to use condoms. *Personality and Social Psychology Bulletin*. 1996; 22:763–775.
- Maisto SA, Carey MP, Carey KB, Gordon CM. The effects of alcohol and expectancies on risk perception and behavioral skills relevant to safer sex among heterosexual young adult women. *Journal of Studies on Alcohol*. 2002; 63:476–485. [PubMed: 12160107]
- Malamuth NM. Criminal and noncriminal sexual aggressors. *Annals of the New York Academy of Sciences*. 2003; 989:33–58. [PubMed: 12839885]
- Maman S, Campbell J, Sweat MD, Gielen AC. The intersections of HIV and violence: direction for future research and interventions. *Social Science and Medicine*. 2000; 50:459–478. [PubMed: 10641800]
- Martin SE, Bryant K. Gender differences in the association of alcohol intoxication and illicit drug abuse among persons arrested for violent and property offenses. *Journal of Substance Abuse*. 2001; 13:563–581. [PubMed: 11775083]
- Martin CS, Sayette MA. Experimental design in alcohol administration research: limitations and alternatives in the manipulation of dosage-set. *Journal of Studies on Alcohol*. 1993; 54:750–761. [PubMed: 8271813]
- Marx BP, Gross AM, Adams HE. The effect of alcohol on the responses of sexual coercive and noncoercive men to an experimental rape analogue. *Sexual Abuse: A Journal of Research and Treatment*. 1999; 11:131–145. [PubMed: 10335565]
- Miller, WR.; Rollnick, S. *Motivational interviewing: preparing people to change addictive behavior*. Guilford Press; New York: 1991.
- Moffitt TE, Caspi A, Harrington H, Milne BJ. Males on the life-course-persistent and adolescence-limited antisocial pathways: follow-up at age 26 years. *Developmental Psychopathology*. 2002; 14:179–207.
- Molitor F, Ruiz JD, Klausner JD, McFarland W. History of forced sex in association with drug use and sexual HIV risk behaviors, infection with STDs, and diagnostic medical care: results from the Young Women Survey. *Journal of Interpersonal Violence*. 2000; 15:262–278.
- Moyer A, Finney JW. Brief interventions for alcohol problems: factors that facilitate implementation. *Alcohol Research and Health*. 2005; 28:44–50. [PubMed: 19006991]
- Muehlenhard CL, Linton MA. Date rape and sexual aggression in dating situations: incidence and risk factors. *Journal of Counseling Psychology*. 1987; 34:186–196.
- National Advisory Council on Alcohol Abuse and Alcoholism. *Recommended council guidelines on ethyl alcohol administration in human experimentation*, Revised May 2005. 2005. Retrieved August 2, 2006, from <http://www.niaaa.nih.gov/Resources/ResearchResources/job22.htm>

- National Institute on Alcohol Abuse and Alcoholism. Task Force on Recommended Alcohol Questions. Oct 15–16. 2003 2003. Retrieved July 25, 2005, from <http://www.niaaa.nih.gov/Resources/ResearchResources/TaskForce.htm>
- Norris J, Davis KC, George WH, Martell J, Heiman JR. Alcohol's direct and indirect effects on men's self-reported sexual aggression likelihood. *Journal of Studies on Alcohol*. 2002; 63:688–695. [PubMed: 12529069]
- Norris J, George WH, Davis KC, Martell J, Leonesio RJ. Alcohol and hypermasculinity as determinants of men's empathic responses to violent pornography. *Journal of Interpersonal Violence*. 1999; 14:683–700.
- Parrott DJ, Zeichner A. Effects of alcohol and trait anger on physical aggression in men. *Journal of Studies on Alcohol*. 2002; 63:196–204. [PubMed: 12033696]
- Pedhazur, J. *Multiple regression in behavioral research: explanation and prediction*. 3rd ed. Wadsworth Publishing; New York: 1997.
- Pernanen, K. *Alcohol in human violence*. Guilford Press; New York: 1991.
- Peterson JB, Rothfleisch J, Zelazo PD, Pihl RO. Acute alcohol intoxication and cognitive functioning. *Journal of Studies on Alcohol*. 1990; 51:114–122. [PubMed: 2308348]
- Quina, K.; Morokoff, PJ.; Harlow, LL.; Zurbriggen, EL. Cognitive and attitudinal paths from childhood trauma to adult HIV risk. In: Koenig, LJ.; Doll, LS.; O'Leary, A.; Pequegnat, W., editors. *From child sexual abuse to adult sexual risk: trauma, revictimization, and intervention*. American Psychological Association; Washington, DC: 2004. p. 117-134.
- Rosenhow DJ, Marlatt GA. The balanced placebo design: methodological considerations. *Addictive Behavior*. 1981; 6:107–122.
- Sayette MA, Smith DW, Breiner MJ, Wilson GT. The effect of alcohol on emotional response to a social stressor. *Journal of Studies on Alcohol*. 1992; 53:541–545. [PubMed: 1434629]
- Schroder KEE, Carey MP, Vanable PA. Methodological challenges in research on sexual behavior. *Annals of Behavioral Medicine*. 2003; 26:76–103. [PubMed: 14534027]
- Shea MEC. The effects of selective evaluation on the perception of female cues in sexually coercive and noncoercive males. *Archives of Sexual Behavior*. 1993; 15:97–120.
- Steele CM, Josephs RA. Alcohol myopia: its prized and dangerous effects. *American Psychologist*. 1990; 45:921–933. [PubMed: 2221564]
- Tabachnick, BG.; Fidell, LS. *Using multivariate statistics*. 5th ed. Allyn and Bacon; Boston: 2007.
- Taylor, SP.; Leonard, KE. Alcohol and human physical aggression. In: Geen, RG.; Donnerstein, EI., editors. *Aggression: theoretical and empirical reviews*. Vol. Vol. 2. Academic Press; New York: 1983. p. 77-101.
- Testa M. The impact of men's alcohol consumption on perpetration of sexual aggression. *Clinical Psychology Review*. 2002; 22:1239–1263. [PubMed: 12436812]
- Tjaden, P.; Thoennes, N. *Prevalence, incidence, and consequences of violence against women: findings from the National Violence Against Women survey*. U.S. Department of Justice, NCJ; Washington, DC: 1998. p. 172837
- Treat TA, McFall RM, Viken RJ, Kruschke JD. Using cognitive science methods to assess the role of social information processing in sexually coercive behavior. *Psychological Assessment*. 2001; 13:549–565. [PubMed: 11793898]
- Welte JW, Barnes GM, Hoffman JH, Wieczorek WF, Zhang L. Substance involvement and the trajectory of criminal offending in young males. *American Journal of Drug and Alcohol Abuse*. 2005; 31:267–284. [PubMed: 15912716]

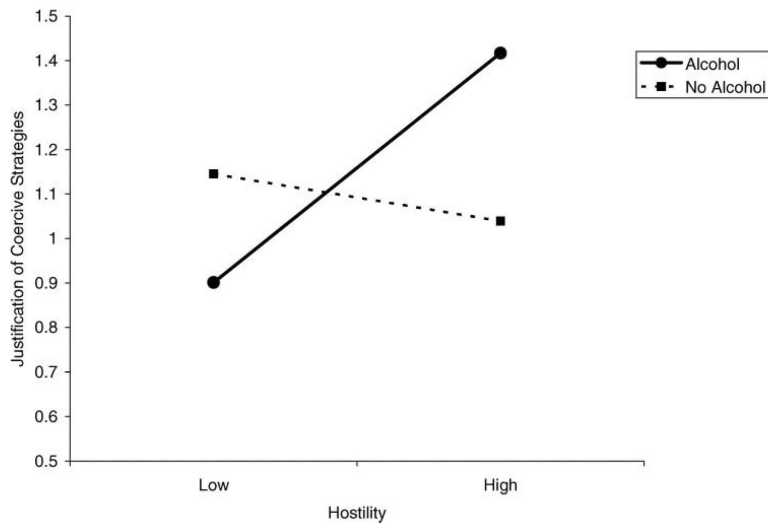


Figure 1. The effects of acute alcohol consumption and hostility on justification for using coercive strategies to have sex without a condom. Note: The no alcohol group includes sober and placebo participants because no differences were found between them.

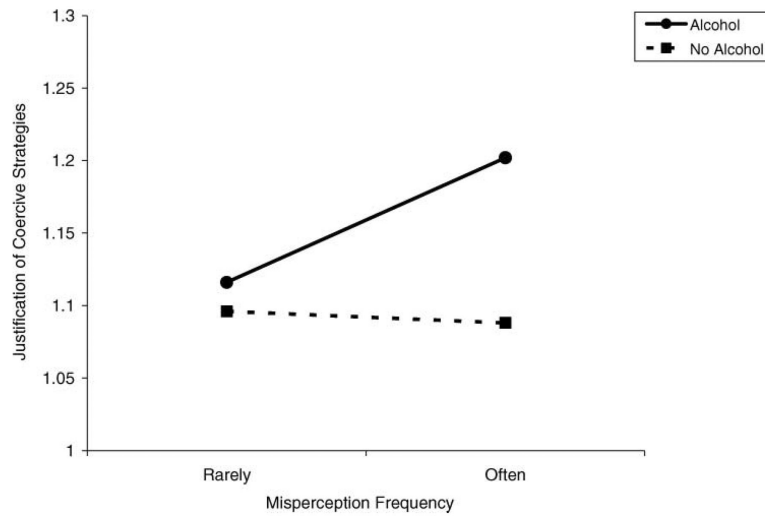


Figure 2. The effects of acute alcohol consumption and misperception on justification for using coercive strategies to have sex without a condom. Note: The no alcohol group includes sober and placebo participants because no differences were found between them.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 1

Means and standard deviations on survey measures

Variable	Intoxicated (N = 24)	Placebo (N = 24)	Sober (N = 24)
	Mean (SD)	Mean (SD)	Mean (SD)
Usual monthly alcohol consumption ^a	44.25 (38.38)	54.71 (29.56)	48.42 (47.20)
Usual condom use in past year ^b	4.21 (2.40)	4.99 (1.93)	4.91 (2.14)
Hostility ^c	2.09 (0.66)	2.40 (0.72)	2.49 (0.69)
Frequency of misperception ^d	3.33 (4.40)	3.80 (5.43)	3.42 (5.33)

Note. There were no significant differences between groups.

^aNumber of days alcohol consumed per month multiplied by number of standard drinks consumed per drinking day.

^bResponse scale: never (1) to always (7).

^cResponse scale: disagree (1) to agree (5).

^dNumber of times participants had misperceived a woman's friendliness as a sexual invitation.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 2

Hierarchical multiple regression analyses predicting justification for using coercive strategies to have sex without a condom ($N = 72$)

Variable	Justification for using coercive strategies			
	<i>B</i>	<i>SE B</i>	β	R^2
Step 1: Survey session				.126
Usual alcohol consumption	-.001	.001	-.069	
Usual condom use	-.010	.017	-.072	
Perpetration status	.192	.074	.313*	
Hostility	.021	.053	.047	
Frequency of misperception	.006	.007	.090	
Step 2: Laboratory session				.009
Drink condition	-.066	.079	-.102	
Step 3: Two-way interactions				.262*
Drink \times perpetration status	-.244	.147	-.296	
Drink \times hostility	.311	.115	.393**	
Drink \times misperception	.047	.018	.383**	
Perpetration \times hostility	-.132	.102	-.224	
Perpetration \times misperception	-.008	.014	-.094	
Hostility \times misperception	.013	.009	.168	

Note. Drink condition: 0 = no alcohol consumed (placebo and sober groups); 1 = alcohol consumed. Perpetration status: 0 = no past sexual assault perpetration; 1 = past sexual assault perpetration.

* $p < .05$.

** $p < .01$.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript