Published in final edited form as:

J Sex Res. 2017 ; 54(6): 764–775. doi:10.1080/00224499.2016.1217500.

Depressive Symptoms, Acute Alcohol Intoxication, and Risk Rationale Effects on Men's Condom Use Resistance

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Abstract

This study examined the role of depressive symptoms, acute intoxication, and risk rationale in men's use of condom use resistance (CUR) tactics in an experimental study. Participants included 313 heterosexual male, non-problem drinkers, ages 21 to 30. Participants were randomized to one of four beverage conditions: no alcohol, placebo, low (0.04%) or high (.08%) alcohol dose. They read an eroticized scenario depicting a consensual sexual encounter with a female partner who requested a condom to prevent either pregnancy or sexually transmitted infections (risk rationale) and then indicated their intentions to use 10 different CUR tactics. Hypotheses related to the pharmacological, dosage, and expectancy effects of alcohol were tested in a generalized linear model. In intoxicated (.04% and .08%) men who were given a pregnancy risk rationale, depressive symptoms were associated with higher intentions to use CUR tactics than in sober (control and placebo) men. Men who received a high dose (.08%) and who were given a pregnancy risk rationale reported higher intentions to use CUR tactics than those who received a lower dose (.04%). Findings suggest that the pharmacological effects of alcohol on men's likelihood to resist condoms vary by the saliency of the risk rationale and mood-related variables.

Keywords

condom use resistance; alcohol; depressive symptoms

Both sexually transmitted infections (STIs) and unintended pregnancies are associated with increased societal and individual deleterious outcomes (Centers for Disease Control [CDC], 2013; Senn, Carey, & Venable, 2010). Young adults account for 50% of new STI cases, and women 20 to 24 years old have the highest unintended pregnancy rate of any age (CDC, 2013; 2015). Interventions promote condoms as the only method that prevents both STIs and pregnancy (Warner, Stone, Macaluso, Buehler, & Austin, 2014), yet in one study only 21% of men and 41% of women used a condom at first intercourse with a new partner (Sanders et

al., 2010). Further, in another study, 80% of men reported resisting condom use with a partner desiring one through a variety of condom use resistance (CUR) tactics (Davis et al., 2014b), including delayed condom application and removal of condoms during intercourse (Hensel, Stupiansky, Herbenick, Dodge, & Reece, 2011).

Although some situational risk factors for condom non-use have received extensive research attention (e.g., alcohol intoxication), other contextual factors, such as risk rationale (e.g., to prevent pregnancy), have not. Similarly, depressive symptomatology has received scant research attention as a contextual factor, despite its substantial prevalence (National Institute of Health, 2012). The present study evaluated the roles of acute intoxication, risk rationale, and depressive symptoms in men's intentions to resist condom use with a partner desiring it.

Alcohol and Sexual Risk-taking

Alcohol is consistently associated with increased intent to engage in sexual risk-taking and decreased condom use with a casual sex partner (for a review, see George & Stoner, 2000; Olmstead, Pasley, & Fincham, 2013). Alcohol administration paradigms demonstrate that intoxicated participants display greater risky sex intentions than sober ones. Alcohol myopia theory (AMT) posits that in the context of acute alcohol intoxication, an individual's attention narrows and attends to impelling or "go" cues that are more salient and immediate than distant inhibitory "no go" cues (Steele & Josephs, 1990). Studies utilizing an experimental design have consistently identified the attentional focus on impelling cues rather than inhibitory cues as a primary mechanism driving sexual risk-taking when intoxicated (Davis, Hendershot, George, Norris, & Heiman, 2007; George et al., 2014). This theory has also been used to explain dose-response effects of alcohol on sexual-risking; increasing doses of alcohol predict sexual risk-taking behaviors (for a review, see Rehm, Shield, Joharchi, & Shuper, 2011).

Alcohol expectancies are also a proposed mechanism for the association between alcohol and sexual risk-taking. Alcohol expectancy theory (AET) posits that behavior and feelings while intoxicated are influenced by how an individual expects he or she will behave and feel while intoxicated (Brown, Goldman, Inn, & Anderson, 1980). Alcohol administration studies that utilize placebo designs inform participants that they are consuming alcohol when they are consuming non-alcoholic beverages. Some such studies have found expectancy effects; participants in the placebo group endorse greater sexual risk-taking intentions than participants in the control group, neither of whom experience the pharmacological effects of alcohol (Cho & Span, 2010). However, others have failed to find such effects (Davis et al., 2012).

Depressive Symptoms and Sexual Risk-Taking

Depressive symptoms have been linked to condom and birth control non-use (Brown et al., 2006; Lehrer, Shrier, Gortmaker, & Buka, 2006; Smith, Buzi, & Weinman, 2010). Men may be less likely to use contraception when experiencing depressive symptoms (Lehrer et al., 2006; Sánchez, Alvarez, Sánchez, & Casal, 2013) and may be more likely to engage in risky sex when experiencing psychological distress (Miller, Solomon, Bunn, Varni, & Hodge,

2015). A longitudinal study found that individuals reporting depressive symptoms at baseline were four times more likely to report inconsistent condom use at follow up (Brown et al., 2006). Possible explanations include the effects of depressive symptoms on negative attributions, decreased risk perception, and external locus of control, as well as sex as a means of coping with negative affect (Shrier, Harris, Sternberg, & Beardslee, 2001; Shrier et al., 2012). While compelling, some literature has not observed a relationship between depressive symptoms and sexual risk-taking (Schroder, Johnson, & Wiebe, 2009; for a review, see Paterno & Jordan, 2012). A meta-analysis by Crepaz and Marks (2001) failed to find an association between negative affect and risky sexual behaviors; however, it did not consider moderating influences or individual variability in mood.

Individuals with depressive symptoms may be more likely to engage in sexual risk-taking when intoxicated than when sober. For individuals who began drinking in high school, low levels of positive affect were associated with repeated alcohol-related sexual consequences in high school and college (Orchowski & Barnett, 2012). Depressive symptoms and the use of alcohol were associated with adolescent males not using a condom at their last sexual intercourse (Shrier et al., 2001). Although the mechanisms underlying this association are unclear, AMT suggests that depressed individuals may attend to stimuli associated with sexual risk-taking when intoxicated. For example, intoxicated men may attend to cognitions associated with depression (e.g., external locus of control, negative attitudes) that are associated with sexual risk-taking (Shrier et al., 2001). Per AET, dyads containing a depressed male partner report more substance use before sex than those without a depressed male partner (Shrier et al., 2009). Depressed men may thus expect alcohol to be associated with greater sexual risk-taking. Notably, AMT and AET may be alternative or simultaneous mechanisms of alcohol-involved sexual risk-taking. Within a simultaneous model, depressed individuals may expect greater sexual risk-taking when intoxicated, then focus on impelling stimuli associated with sexual risk-taking (e.g., arousal), creating a self-fulfilling prophecy of sexual risk-taking (for a review, see George & Stoner, 2000; Moss & Albery, 2009).

Rationale and Resistance to Condom Use

Condom negotiation is a dyadic process, and women typically bear the responsibility of initiating this negotiation (Fantasia, Sutherland, Fontenot, & Ierardi, 2014). Women may suggest a variety of reasons for using a condom and a range of condom influence strategies (Davis et al., 2014a; Holland & French, 2012). The type of rationale and the form of sexual communication to use a condom do not universally influence men (Otto-Salaj et al., 2010); some men report avoiding STIs while others report avoiding pregnancy as compelling reasons to use condoms (Davis et al., 2014a). Some research suggests that rationalizing condom use to prevent pregnancy rather than to prevent STIs is associated with greater partner acquiescence to use condoms because pregnancy is perceived as a greater threat (Bird, Harvey, Beckman, Johnson, & the PARTNERS Project, 2001). Using STI prevention as a rationale may also be perceived as an indication of infidelity (Bird et al., 2001). Again, this research is sparse; it is unclear to what extent these situational factors influence condom use directly or interact with other situational factors (e.g., alcohol use) to influence condom use.

An emerging area of sexual risk-taking research concerns the strategies and tactics an individual may use to have unprotected sexual intercourse with a partner who wants to use a condom. Men typically have more control over whether a condom is used and used correctly than their female partners (Kennedy, Nolen, Applewhite, Waiter, & Vanderhoff, 2007). Men's condom use resistance (CUR) is a pervasive behavior in the United States; when surveying men who report at least one instance of condomless sex in the past year, 80% reported having resisted condom use at least once with a casual sex partner. These men reported using an average of three to four different tactics to avoid condom use (Davis et al., 2014b). Tactics included reassuring a partner that they did not have an STI or complaints that condoms reduce sensitivity (Davis et al., 2014b). Tactics may also include coercion and aggression, such as overwhelming a partner with pressure or making false promises of a future relationship (Davis & Logan-Greene, 2012). A national survey of men ages 18 to 35 found that 31.1% of the sample reported using coercive or aggressive tactics to avoid condom use multiple times since the age of 14 (Davis & Logan-Greene, 2012). While many men may not view physical violence as an acceptable tactic, in general young men perceive CUR as a normative component of casual sexual relationships (Davis et al., 2014a). Similar to the effects of alcohol on sexual risk-taking, acute intoxication is associated with greater intentions to utilize a CUR tactic (Davis et al., 2015).

Purpose of the Current Study

The purpose of this study was to evaluate the role of depressive symptoms, alcohol intoxication, risk rationale, and the interaction of these variables on men's CUR tactics. Given the two prevailing theories positing alcohol's effects on sexual risk-taking, this study utilized an alcohol administration laboratory paradigm with four beverage conditions [control, placebo, low dose (.04%), and high dose (.08%)]. We then assessed whether alcohol interacts with symptoms of depression and the type of risk rationale to influence tactics to obtain sex without a condom from a casual partner in a hypothetical sexual scenario. Finally, we draw conclusions regarding whether these interactions are consistent with alcohol's pharmacological effects (AMT) and psychological effects (AET) on sexual risk-taking.

Consistent with earlier work showing positive associations between depression and sexual risk-taking, we generally anticipated that depression would be associated with increased rather than decreased CUR intentions. Given the extensive literature supporting alcohol's role in sexual risk-taking and the recommendation to examine the role of depressive symptoms in the context of moderators (Crepaz & Marks, 2001), such an association was expected to be moderated by alcohol. Consistent with both AMT and AET, it was hypothesized that depressive symptoms would predict increased use of CUR tactics for men who received alcohol relative to men who did not. H1: Consistent with AET, for men in the placebo condition, as depressive symptoms increase, the likelihood of utilizing a CUR tactic would increase. H2: Consistent with AMT, for men in the alcohol condition, as depressive symptoms increase, the likelihood of utilizing a CUR tactic would increase. H3: There was an expected dosage effect such that as depressive symptoms increase, men in the high alcohol condition would demonstrate higher intentions to use CUR tactics relative to men in

the low alcohol condition. Given the limited research on how the type of risk rationale may influence CUR, type of risk rationale was included as an exploratory factor.

Method

Participants

Recruitment and Exclusion—Male participants were recruited from a large city for a laboratory experiment examining male-female social interactions. In an effort to recruit a sample with elevated sexual risk-taking, advertisements for a study on male-female relationships were placed in online venues (e.g., Craigslist), as well as STI clinics, bars, and nightclubs as approved by the university's Institutional Review Board, and interested individuals were screened over the telephone. To be eligible for participation, men must have reported penetrative sex with a woman in the past 12 months with at least one incident of unprotected sex. Men were excluded if they were involved in a monogamous relationship longer than 6 months or reported always using a condom with a partner in the past 12 months. Consistent with the Recommended Council Guidelines on Alcohol Administration in Human Studies (National Institute on Alcohol Abuse and Alcoholism, 2005) individuals must have been over the age of 21, have had no history of problematic drinking, were not currently abstaining from alcohol, and had no history of medical conditions or current medication regimens contraindicating alcohol use.

Sample Characteristics—The final sample comprised 313 male participants (Mean age = 24.5, $SD = 2.8$). The sample was representative of the study location [White/Caucasian (67.4%), Black/African-American (7.8%), Asian-American (8.1%), Native American/Alaska (.6%), Hawaiian/Asian-Pacific Islander (.3%), and Multiracial or "Other" (15.6%)]. Additionally, 6.5% identified as Hispanic/Latino. Approximately 80% reported at least some college education, and 35% reported being full- or part-time students. Approximately half of the sample earned under \$21,000 per year. The average number of drinks consumed in a week was 14.63 ($SD = 8.5$).

Measures

Depressive Symptoms—To assess the presence of depressive symptoms, participants completed the Patient Health Questionnaire (PHQ-8), which has been validated in clinical and general populations (Kroenke et al., 2009). The questionnaire has 8 items and evaluates the presence of depressive symptoms within the past two weeks (0 = *Not at all* to 3 = *Nearly every day*), including depressed mood and loss of interest in pleasurable activities ($\alpha = .88$). Item sums range from 0 to 24, with a sum of 10 or more indicating clinically significant depressive symptoms.

Condom Use Resistance Tactics—The Condom Use Resistance Tactics survey (Davis et al., 2014b) assessed participants' likelihood to engage in tactics to avoid using a condom with a hypothetical female sexual partner who has requested to use one. Participants were asked to report their likelihood (1 = *very unlikely* to 7 = *very likely*) to engage in 32 behaviors to avoid condom use. A total of 10 subscales were created by averaging these items: Risk Reassurance (four items; e.g., "Reassuring her that you were "clean" so that she

would have sex without a condom”; $\alpha = .88$), Seduction (three items; e.g. “Getting her so sexually excited that she agrees to have sex without a condom”; $\alpha = .94$), Sensitivity (three items; e.g., “Telling her you don’t want to use a condom because they are uncomfortable”; $\alpha = .96$), Direct Request (three items; e.g., “Asking her to not use a condom”; $\alpha = .91$), Relationship and Trust (three items; e.g., “Telling her that you trust each other so that she will have sex with you without a condom”; $\alpha = .87$), Emotional Manipulation (three items, e.g., “Telling her how angry you would be if she insists on using a condom”; $\alpha = .79$), Condom Deception (four items; e.g., “Pretending that you have a latex allergy and cannot use condoms”; $\alpha = .78$), Condom Sabotage (three items; e.g., “Agreeing to use a condom but intentionally break the condom when putting it on”; $\alpha = .89$), Withholding Sex (three items; e.g., “Refusing to have sex with her if you had to use a condom”; $\alpha = .93$), and Physical Threat/Force (three items; e.g., “Preventing her from getting a condom by staying on top of her”; $\alpha = .79$).

Procedure

After completing the screening protocol, eligible participants were scheduled for a laboratory session and informed of previsit requirements. These requirements consisted of (a) not driving to the laboratory; (b) not consuming a caloric beverage or food within 3 hours of their appointment; (c) not consuming alcohol or using recreational or over-the-counter drugs within 24 hours of their appointment; and (d) bringing a photographic form of identification. Upon arrival at the laboratory, a male research assistant (RA) checked compliance with pre-visit requirements and administered an alcohol breath test to ensure that participants’ pre-study breath alcohol content (BrAC) was 0.0%. Participants then provided informed consent and completed survey measures, including depressive symptom assessment. These questionnaires were completed in a private room through data collection software (Datstat Illume, Version 4.7). Participants were compensated \$15 per hour for their time.

Next, participants were randomly assigned through a computer algorithm to one of four alcohol conditions: (1) a control condition ($N = 80$) in which participants were given no alcohol and were informed as such; (2) a placebo condition ($N = 77$) in which participants were told they would be receiving a .04% dose, but received no alcohol; (3) a low alcohol dose condition ($N = 80$) in which participants were given a dose of alcohol intended to yield a peak BrAC of 0.04%; (4) a high alcohol dose condition ($N = 76$) in which participants were given a dose of alcohol intended to yield a peak BrAC of .08%. Participants were weighed to determine the amount of alcohol to attain the target BrAC, with participants in the low alcohol dose condition receiving .510 ml ethanol per pound of body weight and participants in the high alcohol dose receiving twice that amount per pound. Control participants received a volume of orange juice that was equivalent to the total volume of beverage that they would have received in the alcohol condition to which they were yoked (see below). Consistent with recommendations by Rohsenow and Marlatt (1981), beverages for the placebo condition consisted of flattened tonic water in place of vodka, the cups were misted with vodka near the rim, and a squirt of vodka and lime were added to the beverage. Placebo participants who asked about their BrAC were given false feedback and told their BrAC was rising.

Using standard double-blind procedures, a second RA served the appropriate beverage, containing 100 proof alcohol and juice or juice alone. Participants were told to pace their beverage consumption evenly over nine minutes. Upon completion of beverage consumption, participants received Breathalyzer tests every four minutes until the desired threshold BrAC was reached (BrAC of .02% for 0.04% alcohol condition and .05% for the 0.08% alcohol condition), ensuring the sexual risk analogue and related assessments were completed on the ascending limb. The alcohol biphasic curve influences cognitive and behavioral performance based upon whether a participant is on the ascending or descending limb (Bidwell et al., 2013; Pihl, Paylan, Gentes-Hawn, & Hoaken, 2003). When BrACs are still rising (e.g., ascending), individuals report greater perceived intoxication, greater sexual arousal, and greater sexual risk-taking intentions than when BrACs are falling (e.g., descending) (Davis et al., 2009); thus, measures were completed while BrACs were rising. Participants in the low dose condition had a mean BrAC of .037% just prior to reading the sexual risk analog, and their mean following completion of the dependent measures was .039%. Participants in the high dose condition had a mean BrAC of .061% prior to reading the sexual risk analog, and their respective mean following completion of the dependent measures was .073%. To reduce error variance in the time between beverage consumption and beginning the sexual risk analogue, a modified yoked control procedure was utilized (Giancola & Zeichner, 1997; Schacht, Stoner, George, & Norris, 2010). Each control and placebo participant was paired to a previous alcohol participant with each receiving the same number of breath tests as the alcohol participant. Half of the control participants were yoked to low-dose alcohol participants while half were yoked to high-dose participants. Placebo participants were yoked to alcohol participants in the low-dose condition.

After reaching the target BrAC, participants read a sexually explicit scenario of approximately 1,600 words at a 5th-grade reading level as determined by Flesch-Kincaid Grade Level (Kincaid, Fishburne, Roger, & Chissom, 1975; Walters & Hamrell, 2008). The scenario was pilot tested and modified for clarity and realism to participants' lives. The scenario was also written in the second person ("you") present tense to encourage identification with the protagonist, and each participant was directed to imagine that the events were occurring at his current level of intoxication. The eroticized scenario depicted a situation in which the protagonist and Erica, an attractive woman with whom the protagonist had previously had sex twice with inconsistent condom use, engage in consensual sexual activity. The protagonist and Erica realize neither had a condom. Erica then expresses a desire to have sex with the protagonist but voices concern about pregnancy risks (e.g., "let's not take a chance of getting pregnant") or STI risks (e.g., "let's not take a chance of catching an STD"). Participants were randomly assigned to risk rationale condition. The scenario terminates with Erica again indicating her preference to use a condom. Participants then answered questions regarding the likelihood of using CUR tactics to have unprotected sex. Participants also answered two questions assessing the degree (1 = *Strongly disagree* to 7 = *Strongly agree*) to which participants felt the scenario could realistically happen to them and other men, and one question regarding the degree they were able to project themselves into the scenario with ease (1 = *Strong disagree* to 7 = *Strongly agree*). Participants were then debriefed, and those who consumed alcohol remained in the laboratory until their BrAC was below .03%. All procedures were approved by the Institutional Review Board.

Data Analysis Plan

The alcohol condition variable had four levels; thus, three orthogonal contrast codes were used to represent the effect for this variable. Vector values were scaled to facilitate easy interpretation of estimates derived from the statistical analyses. The first code (pharmacological effect) contrasted control and placebo participants with low and high dose participants. To test the dosage effect of alcohol, the second code contrasted low and high dose participants. Finally, we tested for expectancy effects by contrasting the control participants with placebo participants. To address our exploratory hypotheses, we included the risk rationale variable as a dichotomous variable (-1 = Pregnancy rationale, 1 = STI rationale).

Depression scores were equally distributed across conditions (all p s $> .10$, all F s < 1.5). Variables were centered to reduce multicollinearity (Aiken, West, & Reno, 1991). Two-way and three-way interaction terms were created based on the hypotheses. Distributions of the outcome variables indicated extreme nonnormality (see Table 1) for all CUR tactics with the exception of Risk Reassurance and Seduction tactics. This violation of normality prevented the typical utilization of OLS regression because heterogeneous variances and nonnormally distributed data may result in test statistics that are not t or F distributed, which could result in biased p values.

An emerging estimation of nonnormally distributed data for ordinal data is the generalized linear model (GzLM). The GzLM allows for dependent variables with non-normal distributions and for the function of the dependent variable to vary linearly with the predicted values (Hardin & Hilbe, 2001). The gamma distribution with a log link was utilized because it has a lower limit of zero and is positively skewed. After centering the depressive symptoms predictor, we conducted a total of eight GzLM regression analyses for the skewed outcomes and two hierarchical linear regressions for the non-skewed outcomes.

Ten regression models were tested. Each CUR tactic was regressed on depressive symptoms, the three alcohol contrasts (expectancy, pharmacological, and dosage), the risk rationale variable, and all combinations of two- and three-way interactions, for a total of 21 predictors in each regression equation. Non-significant interactions were removed from the models, and final models were computed (see Table 2). To correct for alpha inflation, we used a Benjamini-Hochberg false discovery correction (FDR). This approach allows greater power to detect true effects than other family wise error (FWE) methods. The FDR is defined as the expected proportion of the number of erroneous rejections to the total number of rejections (Benjamini & Hochberg, 2000). The FDR allows for more power than FWE controlling procedures with many comparisons, yet provides more control over Type I errors than pre-test controlling procedures (for a review, see Keselman, Cribbie, & Holland, 2002).

Significant interactions were probed by plotting the simple regression line for depression at each level of an experimental condition. Simple slope analysis was conducted to determine whether the slope for each experimental group differed from zero (DeCoster & Leistico, 2009). Tests of differences of slopes were conducted to determine if the relationship between depression and CUR tactic differed across experimental conditions. Only those results

whose slopes were significantly different from zero ($p < .05$) are presented in the results section.

Results

Descriptive Statistics

Table 1 contains means, standard deviations, ranges, and skewness statistics for all variables by alcohol condition in the analyses. A one-way ANOVA analysis indicated there were no significant difference in mean depressive symptoms across experimental conditions ($F(303) = 1.53, p = .21$). Eleven percent of the sample (control = 10.3%, placebo = 14.5%, low alcohol dose = 12.8%, high alcohol dose = 8.0%) had scores indicating clinically significant levels of depressive symptoms. Participants indicated the scenario could realistically happen to them and other men ($M = 6.03, SD = 1.37$), and agreed that they were able to project themselves into the scenario with ease ($M = 5.97, SD = 1.43$). On average, participants reported low intentions to use the different CUR tactics. However, the full range of scores were endorsed for the Risk Reassurance, Seduction, Sensitivity, Direct Request, Relationship and Trust Manipulation, Emotional Manipulation, and Withholding Sex CUR for men in both the low and high alcohol dose conditions. For men who did not receive alcohol, the full range of scores was observed for the Risk Reassurance, Seduction, Sensitivity, Direct Request, and Relationship and Trust Manipulation CUR tactics. Of the most frequently endorsed CUR tactics in the total sample, 28.8% of participants indicated they would be *somewhat likely* to *very likely* to use a Seduction CUR tactic, 25.6% indicated they would be *somewhat likely* to *very likely* to use the Risk Reassurance CUR tactic, and 10.9% indicated they would be *somewhat likely* to *very likely* to use the Sensitivity CUR tactic. For simplicity, only statistically significant main effects and interactions are discussed. All final model unstandardized regression coefficients are presented in Table 2.

Expectancy Effects—Hypothesis 1 was not supported; there were no main effects of the alcohol expectancy contrast for CUR. There was one significant two-way interaction for expectancy effects for making a direct request to avoid a condom (Direct CUR; $t(309) = -2.30, p < .05$). Men in the placebo condition who received the pregnancy risk rationale were significantly more likely to use this CUR tactic than men in the control group who received the pregnancy risk rationale. There were no significant three-way interactions.

Pharmacological Effects—The second hypothesis examining the interaction of alcohol and depressive symptoms on sexual risk-taking from an AMT framework was supported. Unstandardized coefficients are provided in Table 2. There were three significant main effects of the pharmacological effects of alcohol on CUR. Men who received alcohol reported higher intentions to use Risk Reassurance, Seduction, and Physical Force CUR tactics than men who did not receive alcohol. All other significant main effects and two-way interactions were subsumed within three-way interactions.

In seven of the ten CUR tactics, there was a significant three-way interaction for which four had slopes statistically significant from zero. For intoxicated men in the pregnancy risk rationale condition, higher depressive symptoms were associated with higher intentions to

use the following CUR tactics: Sensitivity ($\beta = .035 (.01)$, $t(302) = 2.75$, $p < .01$); Emotional Manipulation ($\beta = .037 (.01)$, $t(302) = 3.27$, $p < .01$; see Figure 1); Relationship and Trust ($\beta = .03 (.01)$, $t(302) = 2.19$, $p < .05$); and Direct Request ($\beta = .03 (.01)$, $t(302) = 2.05$, $p < .05$). The simple slopes for the Deception CUR trended toward significance in the same pattern as those described above ($\beta = .02 (.01)$, $t(302) = 1.81$, $p = .07$). In six of the ten CUR tactics, for intoxicated men in the STI risk rationale, higher depressive symptoms were associated with lower intentions to use the following CUR tactics: Sensitivity ($\beta = -.039 (.01)$, $t(302) = -2.8$, $p < .01$); Emotional Manipulation ($\beta = -.033 (.01)$, $t(302) = -2.57$, $p < .01$; see Figure 1); Relationship and Trust CUR ($\beta = -.05 (.01)$, $t(302) = -3.22$, $p < .01$); Direct Request ($\beta = -.04 (.02)$, $t(302) = -2.41$, $p < .05$); Withholding Sex ($\beta = -.038 (.01)$, $t(302) = -3.35$, $p < .001$); and Deception ($\beta = -.03 (.01)$, $t(302) = -3.47$, $p < .001$). The interaction between risk rationale and depressive symptoms in the alcohol group on intentions to use Emotional Manipulation CUR is presented as an example of this pattern (see Figure 1).

Dosage Effects—Our third hypothesis was partially supported. All statistically significant main effects and interactions were subsumed within three-way interactions. For five CUR tactics, there was a significant three-way interaction, three of which had simple slopes statistically different than zero. Unstandardized coefficients are presented in Table 2. For men in the high dose condition (.08%) who received the pregnancy risk rationale, higher depressive symptoms were associated with higher intentions to use the following CUR tactics: Emotional Manipulation ($\beta = -.034 (.01)$, $t(302) = 4.55$, $p < .001$); Withholding Sex ($\beta = .059 (.02)$, $t(302) = 3.93$, $p < .001$); and Physical Force ($\beta = .034 (.01)$, $t(302) = 4.55$, $p < .001$; see Figure 2). There was a simple slope trending toward significance for Condom Sabotage in the same direction ($\beta = .18 (.10)$, $t(302) = -1.76$, $p = .07$). For men in the high dosage group receiving the STI risk rationale, increasing depressive symptoms were associated with lower intentions to use the Withholding Sex tactic ($\beta = -.031 (.02)$, $t(302) = -2.12$, $p < .05$). The interaction between risk rationale and depressive symptoms in the high dose group on intentions to use Physical Force CUR is presented as an example of this pattern (see Figure 2).

Discussion

This study expands upon previous investigations to demonstrate that depressive symptoms contribute to sexual risk-taking such as CUR in the context of situational features, namely alcohol intoxication and risk rationale. Consistent with previous research (Davis & Logan-Greene, 2012), more forceful CUR tactics were endorsed less frequently than less forceful and coercive CUR tactics. Overall, there was a positive relationship between depressive symptoms and CUR tactics in the context of alcohol and pregnancy risk rationale. Interestingly, the opposite was found for men in the STI rationale condition; overall, they reported decreasing intentions to use CUR tactics as their depressive symptoms increased. For some CUR tactics, there were also dosage effects, such that higher levels of intoxication (e.g., .08%) predicted increasing intentions to use CUR tactics for men in the pregnancy rationale condition. The similarity of the results across CUR tactics suggests that situational factors such as alcohol intoxication and condom risk rationale are important predictors in men's decision to resist condom use. It is also possible that these similarities are due to the

same men endorsing the intention to use more than one CUR tactic, which is consistent with prior research (Davis et al., 2014b). The literature base exploring the role of negative affect on sexual behavior would benefit from replication of these results and continuing expansion to include a greater focus on depressive symptoms.

This investigation sought to replicate and contribute to previous research findings that acute intoxication is associated with men's sexual risk-taking in the form of CUR tactics (Abbey, Parkhill, Jacques-Tiura, & Saenz, 2009; Davis et al., 2012). The support for the expectancy effects was minimal, and the results overwhelmingly support a pharmacological pathway to utilization of CUR tactics. This is consistent with prior research suggesting that the pharmacological effects of alcohol trump expectancy set effects in regard to sexual risk-taking (Cho & Span, 2010; Davis et al., 2012; Norris et al., 2009). Similarly, we found some support for our hypothesis that higher dosage of alcohol would be associated with higher use of CUR tactics. Notably, higher doses of alcohol in the context of a pregnancy risk rationale were associated with more overtly coercive CUR tactics (e.g., Physical Force), suggesting that these coercive strategies may be more likely to occur at high levels of alcohol consumption. A dose-response effect has been associated with sexual risk-taking, such that increases in BrAC are associated with increases in sexual risk-taking intentions (for a review, see Rehm et al., 2011). This is consistent with the AMT in that as BrAC increases, the pharmacological effects of alcohol may exert a myopic effect on the impelling cues to engage in sexual risk-taking.

Depressive symptoms, acute intoxication, and risk rationale interact to influence men's CUR. Men's sexual risk-taking is influenced by what stimuli are salient in the context of their intoxication (MacDonald et al., 2000). For example, one study found that a bracelet reminder of an STI intervention was associated with increased condom use in the context of acute intoxication (Dal Cin, MacDonald, Fong, Zanna, & Elton-Marshall, 2006). It was posited that the bracelet functioned as a salient inhibiting cue (Dal Cin et al., 2006). Similarly, both men and women report that it is easier to convince a partner to use condoms for pregnancy prevention than for disease prevention if risk of contracting a disease is perceived as low (Bird et al., 2001). In the current study, in the context of the vignettes presented and alcohol intoxication, it appears that pregnancy concerns functioned as a salient cue that then increased sexual risk-taking intentions (Dal Cin et al., 2006). Prior research has found that depressive symptoms increased sexual risk-taking through decreased perceptions of risk (Bancroft et al., 2003; Joppa et al., 2014). This suggests that depressive symptoms may influence the perception of severity of the consequences of risky sex or an individual's susceptibility to these consequences (Joppa et al., 2014). Intoxicated men with depressive symptoms who are given a pregnancy risk rationale may perceive their susceptibility to this consequence and/or the severity of this consequence as low (Bancroft et al., 2003). While pregnancy has the potential to significantly influence an individual's life, it is possible that some men perceive this consequence as more removed and requiring less responsibility on their part (Davis et al., 2014a).

In contrast, it appears that the female partner bringing up STI concerns functioned as a salient cue that then decreased sexual risk-taking intentions in intoxicated men with depressive symptoms. It is not clear from the current analyses why an STI cue was perceived

as a salient inhibiting cue while risk of pregnancy was not. However, there can be considerable variability between men in whether they find pregnancy or STI a more compelling risk (Davis et al., 2014a). Individuals with depression are marked by self-focused attention with deficits in perspective taking (Schreier, Pijnenborg, & Aan Het Rot, 2013). As noted above, this may prompt them to prioritize consequences that more directly affect them, rather than consequences that may more directly affect their partner. In contrast, STIs may be perceived as a real threat directly affecting a participant's well-being to which they are more directly susceptible. While this study did not directly examine specific AMT mechanisms, it is possible that in the context of acute intoxication, decreased perspective taking is amplified as an impelling cue, prompting men to engage in greater sexual risk-taking than when sober.

Strengths, Limitations, and Future Directions

The present study had both strengths and limitations. First, this study examined depressive symptoms with a self-report measure over a short time period. Future research should utilize both self-report and structured diagnostic interviews over a lengthier timeframe. Future research should also investigate in-the-moment cognitive and affective processes that were not included in this investigation to test potential myopic mechanisms of AMT (Davis et al., 2007). For example, men with depressive symptoms may be more likely to hold hostile attributions about a female partner after she voices a desire to use a condom (Otto-Salaj et al., 2010).

This study was also limited to male, heterosexual, non-problem drinkers who reported at least one instance of unprotected, penetrative sex in the past year. Men with other drinking behaviors, including abstainers and men with problematic drinking histories, should be included in future investigations. Future studies should also consider using a higher alcohol dose (e.g., target peak of BrAC of .10%). Far less research has investigated polysubstance use and sexual risk-taking; thus, future investigations should also examine whether the relationship between drug use and multiple substance use (e.g., alcohol and drugs) and sexual risk-taking is moderated by depressive symptoms.

The findings may not apply to men who consistently engage in protected intercourse or are in monogamous relationships. Limited research has examined women's use of CUR, and future research should examine its prevalence. Finally, the study utilized an experimental analog of men's sexual risk-taking that may not translate to or predict real-world condom use behaviors. However, participants indicated the analog was realistic and credible. Prior investigations also found that men's estimations correspond to their real-world sexual risk-taking (Kajumulo, Davis, & George, 2009; Norris, Kiekel, Purdie, & Abdallah, 2010).

Implications and Conclusions

These findings suggest clinical implications. Interventions that seek to reduce sexual risk-taking may be improved by inquiring about psychological well-being, sexual negotiation skills, and substance use (Seth et al., 2011). Both men and women would benefit from interventions including psychoeducation regarding CUR, sexual communication skill-building, and the role of alcohol. Men may benefit from interventions challenging the

normative use of CUR tactics. Women typically initiate communication regarding condom use (Fantasia et al., 2014), and a variety of risk rationale and condom influence strategies may be used to successfully negotiate condom use (French & Holland, 2013). A pregnancy risk rationale may appear less threatening to a relationship; however, the current findings suggest that men do not universally respond to specific risk rationales. Women may benefit from interventions incorporating condom negotiation self-efficacy and condom influence strategies in response to CUR (Holland & French, 2012). Substance use reduction programs aimed at young adults would also benefit from incorporating sexual negotiation into existing curriculum.

While CUR tactics are considered normative (Davis et al., 2014a; 2014b), some of them are quite coercive, specifically those tactics manipulating emotions, condom deception and sabotage, and physical force. It is important to consider whether depressive symptoms may be a risk factor for coercive attempts to avoid condoms, particularly in the context of acute intoxication. For example, intoxicated men with negative affect are more likely to use coercive tactics to avoid condom use (Abbey et al., 2009). Consistent with broader intervention goals to intervene in men's alcohol consumption before or during sexual activity, the current study suggests additional outreach and education to men with depressive symptoms regarding the risks associated with alcohol use before or during sexual activity is warranted.

While condoms are the only effective contraception for both STI and pregnancy prevention, they are used inconsistently within young adult populations. The consequences of inconsistent condom use (e.g., unintended pregnancy, STI) have costs to the individual and larger society. Many individuals actively attempt to avoid using condoms despite the potential risks. There is extensive research to suggest that acute intoxication is associated with increased sexual risk-taking and resistance to condom use, and the present results suggest that intrapersonal and situation-level variables such as depressive symptoms and risk rationale have contributing roles as well. It is vital to continue research that investigates the intrapersonal and situational factors predictive of CUR that may be addressed through intervention.

Acknowledgments

This research was supported by grant R01AA017608 from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) to Kelly Cue Davis.

References

- Abbey A, Parkhill MR, Jacques-Tiura AJ, Saenz C. Alcohol's role in men's use of coercion to obtain unprotected sex. *Substance Use & Misuse*. 2009; 44:1329–48. DOI: 10.1080/10826080902961419 [PubMed: 19938921]
- Aiken, LS., West, SG., Reno, RR. Multiple regression: Testing and interpreting interactions. Sage Thousand Oaks, CA: Publications, Inc; 1991.
- Bancroft J, Janssen E, Strong D, Carnes L, Vukadinovic Z, Long JS. The relation between mood and sexuality in heterosexual men. *Archives of Sexual Behavior*. 2003; 32:217–230. DOI: 10.1023/a:1026041628364 [PubMed: 12807294]

- Benjamini Y, Hochberg Y. On the adaptive control of the false discovery rate in multiple testing with independent statistics. *Journal of Educational and Behavioral Statistics*. 2000; 25:60–83. DOI: 10.3102/10769986025001060
- Bidwell CL, MacKillop J, Murphy JG, Grenga A, Swift RM, McGeary JE. Biphasic effects of alcohol on delay and probability discounting. *Experimental and Clinical Psychopharmacology*. 2013; 21:214–221. DOI: 10.1037/a0032284 [PubMed: 23750692]
- Bird ST, Harvey SM, Beckman LJ, Johnson CH. The PARTNERS Project. Getting your partner to use condoms: Interviews with men and women at risk of HIV/STDs. *The Journal of Sex Research*. 2001; 38:233–240. DOI: 10.1080/00224490109552092
- Brown LK, Tolou-Shams M, Lescano C, Houck C, Zeidman J, Pugatch D. ... Project SHIELD Study Group. Depressive symptoms as a predictor of sexual risk among African American adolescents and young adults. *Journal of Adolescent Health*. 2006; 39:444.e1–444.e8. DOI: 10.1016/j.jadohealth.2006.01.015 [PubMed: 16919811]
- Brown SA, Goldman MS, Inn A, Anderson LR. Expectations of reinforcement from alcohol: Their domain and relation to drinking patterns. *Journal of Consulting and Clinical Psychology*. 1980; 48:419–426. DOI: 10.1037/0022-006X.48.4.419 [PubMed: 7400427]
- Centers for Disease Control. Incidence, prevalence, and cost of sexually transmitted infections in the United States. 2013. Retrieved December 1, 2015 from <http://www.cdc.gov/std/stats/sti-estimates-fact-sheet-feb-2013.pdf>
- Centers for Disease Control. Sexually transmitted disease surveillance 2014. 2015. Retrieved June 18, 2016 from <https://www.cdc.gov/std/stats14/surv-2014-print.pdf>
- Cho YH, Span SA. The effect of alcohol on sexual risk-taking among young men and women. *Addictive Behaviors*. 2010; 35:779–785. DOI: 10.1016/j.addbeh.2010.03.007 [PubMed: 20399023]
- Crepaz N, Marks G. Are negative affective states associated with HIV sexual risk behaviors? A meta-analytic review. *Health Psychology*. 2001; 20:291–299. DOI: 10.1037/0278-6133.20.4.291 [PubMed: 11515741]
- Dal Cin S, MacDonald TK, Fong GT, Zanna MP, Elton-Marshall TE. Remembering the message: the use of a reminder cue to increase condom use following a safer sex intervention. *Health Psychology*. 2006; 25:438–443. DOI: 10.1037/0278-6133.25.3.438 [PubMed: 16719617]
- Davis KC, Danube CL, Stappenbeck CA, Norris J, George WH. Background predictors and event-specific characteristics of sexual aggression incidents: The roles of alcohol and other factors. *Violence Against Women*. 2015; 21:997–1017. DOI: 10.1177/1077801215589379 [PubMed: 26048213]
- Davis KC, George WH, Norris J, Schacht RL, Stoner SA, Hendershot CS, Kajumulo KF. Effects of alcohol and blood alcohol concentration limb on sexual risk-taking intentions. *Journal of Studies on Alcohol and Drugs*. 2009; 70:499–507. DOI: 10.15288/jsad.2009.70.499 [PubMed: 19515289]
- Davis KC, Hendershot CS, George WH, Norris J, Heiman JR. Alcohol's effects on sexual decision making: an integration of alcohol myopia and individual differences. *Journal of Studies on Alcohol and Drugs*. 2007; 68:843–851. DOI: 10.15288/jsad.2007.68.843 [PubMed: 17960302]
- Davis KC, Logan-Greene P. Young men's aggressive tactics to avoid condom use: A test of a theoretical model. *Social Work Research*. 2012; 36:223–231. DOI: 10.1093/swr/svs027 [PubMed: 23139623]
- Davis KC, Schraufnagel TJ, Jacques-Tiura AJ, Norris J, George WH, Kiekel PA. Childhood sexual abuse and acute alcohol effects on men's sexual aggression intentions. *Psychology of Violence*. 2012; 2:179–193. DOI: 10.1037/a0027185 [PubMed: 22754720]
- Davis KC, Schraufnagel TJ, Kajumulo KF, Gilmore AK, Norris J, George WH. A qualitative examination of men's condom use attitudes and resistance: "it's just part of the game. *Archives of Sexual Behavior*. 2014a; 43:631–643. DOI: 10.1007/s10508-013-0150-9 [PubMed: 23912776]
- Davis KC, Stappenbeck CA, Norris J, George WH, Jacques-Tiura AJ, Schraufnagel TJ, Kajumulo KF. Young men's condom use resistance tactics: a latent profile analysis. *Journal of Sex Research*. 2014b; 51:454–65. DOI: 10.1080/00224499.2013.776660 [PubMed: 23548069]
- DeCoster, J., Leistico, A. Simple slopes for a 3-way interaction. 2009. Retrieved from <http://www.stat-help.com/spreadsheets.html>

- Fantasia HC, Sutherland MA, Fontenot HB, Ierardi JA. Knowledge, attitudes, and beliefs about contraceptive and sexual consent negotiation among college women. *Journal of Forensic Nursing*. 2014; 10:199–207. DOI: 10.1097/JFN.0000000000000046 [PubMed: 25411811]
- French SE, Holland KJ. Condom negotiation strategies as a mediator of the relationship between self-efficacy and condom use. *Journal of Sex Research*. 2013; 50:48–59. DOI: 10.1080/00224499.2011.626907 [PubMed: 22126308]
- George WH, Davis KC, Masters NT, Jacques-Tiura AJ, Heiman JR, Norris J, Gilmore AK, Nguyen HV, Kajumulo KF, Otto JM, Andrasik MP. Sexual victimization, alcohol intoxication, sexual-emotional responding, and sexual risk in heavy episodic drinking women. *Archives of Sexual Behavior*. 2014; 43:645–658. DOI: 10.1007/s10508-013-0143-8 [PubMed: 23857517]
- George WH, Stoner SA. Understanding acute alcohol effects on sexual behavior. *Annual Review of Sex Research*. 2000; 11:92–124. DOI: 10.1080/10532528.2000.10559785
- Giancola PR, Zeichner A. The biphasic effects of alcohol on human physical aggression. *Journal of Abnormal Psychology*. 1997; 106:598–607. [PubMed: 9358690]
- Hardin, J., Hilbe, J. Generalized linear models and extensions. College Station, TX: Stata Press; 2001.
- Hensel DJ, Stupiansky NW, Herbenick D, Dodge B, Reece M. When condom use is not condom use: An event-level analysis of condom use behaviors during vaginal intercourse. *The Journal of Sexual Medicine*. 2011; 8:28–34. DOI: 10.111/j.1743-6109.2010.02031.x [PubMed: 20840531]
- Holland KJ, French SE. Condom negotiation strategies and effectiveness among college students. *Journal of Sex Research*. 2012; 49:443–453. DOI: 10.1080/00224499.2011.568128 [PubMed: 21732866]
- Joppa MC, Rizzo CJ, Brown LK, Hadley W, Dattadeen JA, Donenberg G, DiClemente R. Project STYLE Study Group. Internalizing symptoms and safe sex intentions among adolescents in mental health treatment: Personal factors as mediators. *Children and Youth Services Review*. 2014; 46:177–185. DOI: 10.1016/j.childyouth.2014.07.023 [PubMed: 25284921]
- Kajumulo, KF., Davis, K., George, W. Experimental vignettes in assessing alcohol-involved risky sexual decision making: Evidence for external validity. Paper presented at the meeting of the Society for the Scientific Study of Sexuality; Puerto Vallarta, Mexico. 2009 Nov.
- Kennedy SB, Nolen S, Applewhite J, Waiters E, Vanderhoff J. Condom use behaviours among 18–24 year-old urban African American males: a qualitative study. *AIDS Care*. 2007; 19:1032–1038. DOI: 10.1080/09540120701235610 [PubMed: 17852001]
- Keselman HJ, Cribbie R, Holland B. Controlling the rate of Type I error over a large set of statistical tests. *British Journal of Mathematical and Statistical Psychology*. 2002; 55:27–39. DOI: 10.1348/000711002159680 [PubMed: 12034010]
- Kincaid, JP., Fishburne, RP., Rogers, RL., Chissom, BS. Research Branch Report 8–75. Millington, TN: Naval Technical Training, U. S. Naval Air Station, Memphis, TN; 1975. Derivation of new readability formulas (Automated Readability Index, Fog Count and Flesch Reading Ease Formula) for Navy enlisted personnel.
- Kroenke K, Strine TW, Spitzer RL, Williams JB, Berry JT, Mokdad AH. The PHQ-8 as a measure of current depression in the general population. *Journal of Affective Disorders*. 2009; 114:163–173. DOI: 10.1016/j.jad.2008.06.026 [PubMed: 18752852]
- Lehrer JA, Shrier LA, Gortmaker S, Buka S. Depressive symptoms as a longitudinal predictor of sexual risk behaviors among US middle and high school students. *Pediatrics*. 2006; 118:189–200. DOI: 10.1542/peds.2005-1320 [PubMed: 16818565]
- MacDonald TK, Fong GT, Zanna MP, Martineau AM. Alcohol myopia and condom use: can alcohol intoxication be associated with more prudent behavior? *Journal of Personality and Social Psychology*. 2000; 78:605–619. DOI: 10.1037//0022-3514.78.4.605 [PubMed: 10794369]
- Miller CT, Solomon SE, Bunn JY, Varni SE, Hodge JJ. Psychological symptoms are associated with both abstinence and risky sex among men with HIV. *Archives of Sexual Behavior*. 2015; 44:453–465. DOI: 10.1007/s10508-014-0464-2 [PubMed: 25614050]
- Moss AC, Albery IP. A dual-process model of the alcohol-behavior link for social drinking. *Psychological Bulletin*. 2009; 135:516–530. DOI: 10.1037/a0015991 [PubMed: 19586160]
- National Institute of Health. Major depression among adults. 2012. Retrieved from <http://www.nimh.nih.gov/health/statistics/prevalence/major-depression-among-adults.shtml>

- National Institute on Alcohol Abuse and Alcoholism. Council guidelines on administering alcohol in human subjects. 2005. Retrieved on December 1, 2015 from <http://www.niaaa.nih.gov/Resources/ResearchResources/job22.htm>
- Norris, J., Kiekel, PA., Purdie, MP., Abdallah, DA. Using experimental simulations to assess self-reported sexual behavior: Further evidence of external validity. Poster presentation at a symposium on Alternative Conceptualizations of Assessing Sexual Behavior, Society for the Scientific Study of Sexuality meeting; Las Vegas, NV. 2010 Nov.
- Norris J, Stoner SA, Hessler DM, Zawacki T, Davis KC, George WH, Morrison DM, Parkhill MR, Abdallah DA. Influences of sexual sensation seeking, alcohol consumption, and sexual arousal on women's behavioral intentions related to having unprotected sex. *Psychology of Addictive Behaviors*. 2009; 23:14–22. DOI: 10.1037/a0013998 [PubMed: 19290686]
- Olmstead SB, Pasley K, Fincham FD. Hooking up and penetrative hookups: Correlates that differentiate college men. *Archives of Sexual Behavior*. 2013; 42:573–583. DOI: 10.1007/s10508-012-9907-9 [PubMed: 22350126]
- Orchowski LM, Barnett NP. Alcohol-related sexual consequences during the transition from high school to college. *Addictive Behaviors*. 2012; 37:256–263. DOI: 10.1016/j.addbeh.2011.10.010 [PubMed: 22115596]
- Otto-Salaj LL, Traxel N, Brondino MJ, Reed B, Gore-Felton C, Kelly JA, Stevenson LY. Reactions of heterosexual African-American men to women's condom negotiation strategies. *Journal of Sex Research*. 2010; 47:539–551. <http://doi.org/10.1080/00224490903216763>. [PubMed: 19760529]
- Paterno MT, Jordan ET. A review of factors associated with unprotected sex among adult women in the United States. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*. 2012; 41:258–274. DOI: 10.1111/j.1552-6909.2011.01334.x
- Pihl RO, Paylan SS, Gentes-Hawn A, Hoaken PN. Alcohol affects executive cognitive functioning differentially on the ascending versus descending limb of the blood alcohol concentration curve. *Alcoholism: Clinical and Experimental Research*. 2003; 27:773–779. DOI: 10.1097/01.alc.0000065434.92204.a1
- Rehm J, Shield KD, Joharchi N, Shuper PA. Alcohol consumption and the intention to engage in unprotected sex: Systematic review and meta-analysis of experimental studies. *Addiction*. 2012; 107:51–59. DOI: 10.1111/j.1360-043.2011.03521.x [PubMed: 22151318]
- Rohsenow DJ, Marlatt GA. The balanced placebo design: Methodological considerations. *Addictive Behaviors*. 1981; 6:107–122. DOI: 10.1016/0306-4603(81)90003-4 [PubMed: 7023202]
- Sánchez MTR, Alvarez IT, Sánchez MPB, Casal GB. Social support, self-esteem and depression: Relationship with risk for sexually transmitted infections/HIV transmission. *International Journal of Clinical and Health Psychology*. 2013; 13:181–188. DOI: 10.1016/s1697-2600(13)70022-x
- Sanders SA, Reece M, Herbenick D, Schick V, Dodge B, Fortenberry JD. Condom use during most recent vaginal intercourse event among a probability sample of adults in the United States. *The Journal of Sexual Medicine*. 2010; 7:362–373. [PubMed: 21029391]
- Schacht RL, Stoner SA, George WH, Norris J. Idiographically determined versus standard absorption periods in alcohol administration studies. *Alcoholism: Clinical and Experimental Research*. 2010; 34:925–927. DOI: 10.1111/j.1530-0277.2010.01165.x
- Schroder KE, Johnson CJ, Wiebe JS. An event-level analysis of condom use as a function of mood, alcohol use, and safer sex negotiations. *Archives of Sexual Behavior*. 2009; 38:283–289. DOI: 10.1007/s10508-007-9278-9 [PubMed: 18027083]
- Schreiter S, Pijnenborg GHM, Aan Het Rot M. Empathy in adults with clinical or subclinical depressive symptoms. *Journal of Affective Disorders*. 2013; 150:1–16. DOI: 10.1016/j.jad.2013.03.009 [PubMed: 23668900]
- Senn TE, Carey MP, Venable PA. The intersection of violence, substance use, depression, and STDs: Testing of a syndemic pattern among patients attending an urban STD clinic. *Journal of the National Medical Association*. 2010; 102:614–620. DOI: 10.1016/s0027-9684(15)30639-8 [PubMed: 20690325]
- Seth P, Patel SN, Sales JM, DiClemente RJ, Wingood GM, Rose ES. The impact of depressive symptomatology on risky sexual behavior and sexual communication among African American

female adolescents. *Psychology, Health & Medicine*. 2011; 16:346–56. DOI: 10.1080/13548506.2011.554562

Shrier LA, Harris SK, Sternberg M, Beardslee WR. Associations of depression, self-esteem, and substance use with sexual risk among adolescents. *Preventive Medicine*. 2001; 33:179–89. DOI: 10.1006/pmed.2001.0869 [PubMed: 11522159]

Shrier LA, Feldman HA, Black SK, Walls C, Kendall AD, Lops C, Beardslee WR. Momentary affective states surrounding sexual intercourse in depressed adolescents and young adults. *Archives of Sexual Behavior*. 2012; 41:1161–1171. DOI: 10.1007/s10508-011-9787-4 [PubMed: 21755382]

Shrier LA, Schillinger JA, Aneja P, Rice PA, Batteiger BE, Braslins PG, Orr DP, Fortenberry JD. Depressive symptoms and sexual risk behavior in young, chlamydia-infected, heterosexual dyads. *Journal of Adolescent Health*. 2009; 45:63–69. DOI: 10.1016/j.jadohealth.2008.11.016 [PubMed: 19541251]

Smith PB, Buzi RS, Weinman ML. Mental health screening in family-planning clinics: A sexual risk-reduction opportunity. *Journal of Sex & Marital Therapy*. 2010; 36:181–192. DOI: 10.1080/00926231003719475 [PubMed: 20432121]

Steele CM, Josephs RA. Alcohol myopia: Its prized and dangerous effects. *American Psychologist*. 1990; 45:921–933. DOI: 10.1037//0003-066x.45.8.921 [PubMed: 2221564]

Walters KA, Hamrell MR. Consent forms, lower reading levels, and using Flesch-Kincaid readability software. *Drug Information Journal*. 2008; 42:385–394. DOI: 10.1177/009286150804200411

Warner L, Stone KM, Macaluso M, Buehler JW, Austin HD. Condom use and risk of gonorrhea and chlamydia: a systematic review of design and measurement factors assessed in epidemiologic studies. *Sexually Transmitted Diseases*. 2006; 33:36–51. DOI: 10.1097/01.olq.0000187908.42622.fd [PubMed: 16385221]

Figure 1.
Interaction of Depressive Symptoms and Risk Rationale (Pregnancy vs. STI) in the Alcohol Group (BrAC = .04% and .08%; N = 156).

Figure 2. Interaction of Depressive Symptoms and Risk Rationale (Pregnancy vs. STI) in the High Dose Group (BrAC = .08%; N = 76).

Table 1
Means, Standard Deviations, Ranges, and Skewness of Study Variables by Alcohol Condition (N = 313)

	Mean (SD)				Skewness (Range)			
	Control	Placebo	Low	High	Control	Placebo	Low	High
Depressive Symptoms	4.08 (4.06)	4.63 (5.25)	5.21 (4.69)	3.76 (3.95)	1.03 (0–16)	1.60 (0–24)	1.13 (0–21)	1.46 (0–16)
CUR								
Risk Reassurance	2.66 (1.54)	2.68 (1.56)	3.07 (1.80)	3.28 (2.03)	.57 (1–6.40)	.93 (1–7)	.58 (1–7)	.43 (1–7)
Seduction	2.80 (1.77)	2.92 (1.85)	3.38 (2.07)	3.58 (2.15)	.56 (1–7)	.90 (1–7)	.51 (1–7)	.24 (1–7)
Sensitivity	1.81 (1.36)	1.66 (1.34)	1.95 (1.68)	2.44 (.192)	1.36 (1–6)	2.57 (1–7)	1.94 (1–7)	1.30 (1–7)
Direct Request	1.71 (1.25)	1.62 (1.21)	1.73 (1.40)	2.11 (1.69)	2.06 (1–7)	2.79 (1–7)	2.37 (1–7)	1.49 (1–7)
Relationship and Trust Manipulation	1.56 (.99)	1.58 (1.07)	1.91 (1.41)	2.20 (1.79)	2.82 (1–7)	2.56 (1–6)	2.06 (1–7)	1.61 (1–7)
Emotional Manipulation	1.45 (.83)	1.32 (.52)	1.63 (1.12)	1.99 (1.53)	2.24 (1–5)	1.66 (1–3)	2.55 (1–7)	1.89 (1–7)
Condom Deception	1.16 (.44)	1.08 (.23)	1.26 (.61)	1.47 (1.00)	4.16 (1–4)	3.00 (1–2)	3.10 (1–4.5)	2.53 (1–5.75)
Condom Sabotage	1.11 (.51)	1.01 (.11)	1.05 (.22)	1.19 (.67)	5.31 (1–4.33)	8.72 (1–2)	4.48 (1–2.33)	3.88 (1–4.67)
Withholding Sex	1.20 (.58)	1.12 (.44)	1.34 (.91)	1.63 (1.48)	3.38 (1–4.33)	4.81 (1–4)	3.90 (1–7)	2.61 (1–7)
Physical Force	1.08 (.40)	1.04 (.22)	1.04 (.24)	1.15 (.60)	6.20 (1–4)	6.14 (1–2.70)	6.12 (1–2.67)	4.44 (1–4)

Table 2

Final Models of Alcohol Contrasts, Risk Rationale, and Depressive Symptoms on CUR Tactics

Models	B	SE B	95% CI	p
Risk Reassurance CUR				
Expectancy Contrast	-.14	.20	[-.52, .25]	ns
Pharmacological Contrast	.23	.1	[-.05, .50]	<.01
Dosage Contrast	.02	.20	[-.37, .42]	ns
Depressive Symptoms	.04	.03	[-.02, .10]	ns
Risk Rationale	-.12	.10	[-.32, .08]	ns
Depress x Rationale	-.03	.05	[-.12, .05]	ns
Expectancy x Depress	-.01	.03	[-.07, .06]	ns
Expectancy x Rationale	.30	.28	[-.29, .83]	ns
Pharm x Depress	-.02	.03	[-.06, .03]	ns
Pharm x Rationale	.13	.20	[-.26, .52]	ns
Dose x Depress	.06	.03	[.00, .13]	ns
Dose x Rationale	.13	.29	[-.43, .69]	ns
Seduction CUR				
Expect Contrast	-.06	.16	[-.73, .13]	ns
Pharmacological Contrast	.33	.16	[.11, .55]	<.01
Dosage Contrast	.21	.23	[-.23, .66]	ns
Depressive Symptoms	.05	.03	[.00, .10]	ns
Risk Rationale	-.03	.11	[-.25, .19]	ns
Depress x Rationale	-.06	.05	[-.16, .04]	ns
Expect x Depress	.00	.04	[-.07, .06]	ns
Expect x Rationale	.52	.32	[-.10, 1.14]	ns
Pharm x Depress	-.03	.03	[-.08, .02]	ns
Pharm x Rationale	-.11	.23	[-.56, .33]	ns
Dose x Depress	.11	.05	[.01, .205]	ns
Dose x Rationale	-.30	.32	[-.93, .34]	ns
Pharm x Depress x Rationale	-.10	.08	[-.20, .00]	ns
Dose x Depress x Rationale	-.16	.08	[-.31, -.02]	ns
Sensitivity CUR				
Expect Contrast	-.06	.07	[-.20, .07]	ns
Pharmacological Contrast	.15	.05	[.05, .25]	<.01
Dosage Contrast	.09	.05	[-.01, .19]	ns
Depressive Symptoms	.02	.01	[-.01, .05]	ns
Risk Rationale	-.10	.07	[-.24, .04]	ns
Depress x Rationale	-.02	.02	[-.05, .02]	ns
Expect x Depress	.00	.01	[-.02, .24]	ns
Expect x Rationale	.21	.10	[.02, .41]	ns
Pharm x Depress	.02	.01	[.00, .04]	<.05
Pharm x Rationale	-.08	.07	[-.22, .07]	ns

Models	B	SE B	95% CI	p
Dose x Depress	.01	.01	[-.01, .03]	ns
Dose x Rationale	-.04	.05	[-.14, .06]	ns
Pharm x Depress x Rationale	-.06	.02	[-.09, -.03]	<.001
Direct Request CUR				
Expect Contrast	-.10	.07	[-.23, .02]	ns
Pharmacological Contrast	.14	.05	[.04, .23]	<.01
Dosage Contrast	.09	.05	[.00, .19]	ns
Depressive Symptoms	.01	.01	[-.01, .03]	ns
Risk Rationale	-.02	.07	[-.15, .12]	ns
Depress x Rationale	-.03	.01	[-.06, .00]	ns
Expect x Depress	.01	.01	[-.01, .03]	ns
Expect x Rationale	.24	.10	[.05, .42]	<.05
Pharm x Depress	.02	.01	[.00, .04]	<.05
Pharm x Rationale	-.13	.07	[-.26, .00]	<.05
Dose x Depress	.01	.01	[-.01, .03]	ns
Dose x Rationale	-.08	.05	[-.17, .02]	ns
Pharm x Depress x Rationale	-.05	.01	[-.08, -.02]	<.01
Relationship and Trust CUR				
Expect Contrast	-.06	.06	[-.18, .06]	ns
Pharmacological Contrast	.15	.04	[.06, .24]	<.01
Dosage Contrast	.04	.04	[-.05, .12]	ns
Depressive Symptoms	.01	.01	[-.01, .03]	ns
Risk Rationale	-.02	.06	[-.14, .10]	ns
Depress x Rationale	-.02	.01	[-.05, .01]	ns
Expect x Depress	.01	.01	[-.01, .03]	ns
Expect x Rationale	.10	.09	[-.08, .27]	ns
Pharm x Depress	.02	.01	[.01, .04]	<.05
Pharm x Rationale	-.01	.06	[-.13, .11]	ns
Dose x Depress	.02	.01	[.00, .04]	ns
Dose x Rationale	-.06	.05	[-.15, .03]	ns
Pharm x Depress x Rationale	-.05	.01	[-.08, -.02]	<.01
Dose x Depress x Rationale	-.02	.01	[-.04, .00]	ns
Emotional Manipulation CUR				
Expect Contrast	-.03	.05	[-.13, .07]	ns
Pharmacological Contrast	.23	.04	[.16, .30]	<.001
Dosage Contrast	.13	.05	[.03, .23]	<.05
Depressive Symptoms	.02	.01	[.01, .04]	<.01
Risk Rationale	-.10	.05	[-.21, .00]	<.05
Depress x Rationale	-.04	.01	[-.06, -.01]	<.01
Express x Depress	.01	.01	[-.01, .03]	ns
Express x Rationale	.14	.08	[-.28, .02]	ns
Pharm x Depress	.01	.01	[.00, .03]	ns

Models	B	SE B	95% CI	p
Pharm x Rationale	-.20	.05	[-.30, -.10]	<.001
Dose x Depress	.04	.01	[.02, .06]	<.001
Dose x Rationale	-.13	.08	[-.28, .02]	ns
Pharm x Depress x Rationale	-.04	.01	[-.06, -.01]	<.01
Dose x Depress x Rationale	-.04	.02	[-.08, -.01]	<.01
Deception CUR				
Expect Contrast	-.20	.04	[-.05, .10]	ns
Pharmacological Contrast	.16	.03	[.11, .21]	<.001
Dosage Contrast	.11	.04	[.04, .19]	<.01
Depressive Symptoms	.01	.01	[.01, .02]	ns
Risk Rationale	-.09	.04	[-.17, -.02]	<.05
Depress x Rationale	-.02	.01	[-.04, .00]	<.05
Expect x Depress	.00	.01	[-.01, .02]	ns
Expect x Rationale	.02	.05	[-.09, .12]	ns
Pharm x Depress	.01	.01	[.00, .02]	ns
Pharm x Rationale	-.13	.04	[-.21, -.06]	<.01
Dose x Depress	.03	.01	[.02, .05]	<.001
Dose x Rationale	-.11	.05	[-.22, -.01]	<.05
Pharm x Depress x Rationale	-.03	.01	[-.04, -.01]	<.01
Dose x Depress x Rationale	-.04	.01	[-.06, -.01]	<.01
Condom Sabotage				
Expect Contrast	.03	.03	[-.02, .08]	ns
Pharmacological Contrast	.06	.02	[-.03, .10]	<.01
Dosage Contrast	.10	.03	[.05, .15]	<.001
Depressive Symptoms	.01	.01	[.01, .02]	<.01
Risk Rationale	-.03	.03	[-.09, .02]	ns
Depress x Rationale	-.02	.01	[-.03, -.01]	<.01
Expect x Depress	.00	.01	[-.01, .01]	ns
Expect x Rationale	-.01	.04	[-.08, .07]	ns
Pharm x Depress	.01	.01	[.00, .02]	<.05
Pharm x Rationale	-.06	.03	[-.11, -.01]	<.05
Dose x Depress	.02	.01	[.01, .03]	<.001
Dose x Rationale	-.09	.04	[-.16, -.01]	ns
Pharm x Depress x Rationale	-.02	.01	[-.03, -.01]	<.05
Dose x Depress x Rationale	-.03	.01	[-.04, -.01]	<.01
Withholding Sex				
Expect Contrast	-.04	.05	[-.13, .06]	ns
Pharmacological Contrast	.20	.03	[.14, .27]	<.001
Dosage Contrast	.11	.05	[.25, .39]	<.05
Depressive Symptoms	.02	.01	[.01, .03]	<.05
Risk Rationale	-.14	.05	[-.23, -.04]	<.01
Depress x Rationale	-.04	.01	[-.06, -.02]	<.01

Models	B	SE B	95% CI	p
Expect x Depress	.01	.01	[-.01, .02]	ns
Expect x Rationale	.13	.07	[-.01, .27]	ns
Pharm x Depress	.02	.01	[.00, .03]	<.05
Pharm x Rationale	-.18	.05	[-.28, -.09]	<.001
Dose x Depress	.04	.01	[.02, .07]	<.001
Dose x Rationale	-.10	.07	[-.23, .04]	ns
Pharm x Depress x Rationale	-.03	.01	[-.06, -.01]	<.01
Dose x Depress x Rationale	-.05	.02	[-.08, -.02]	<.01
Physical Force CUR				
Expect Contrast	.00	.03	[-.04, .06]	ns
Pharmacological Contrast	.05	.02	[.01, .09]	<.01
Dosage Contrast	.07	.02	[.03, .10]	<.05
Depressive Symptoms	.01	.01	[.00, .02]	<.01
Risk Rationale	.01	.03	[-.05, .05]	ns
Depress x Rationale	-.01	.01	[-.03, .00]	<.05
Expect x Depress	.00	.01	[-.1, .01]	ns
Expect x Rationale	-.01	.04	[-.08, .06]	ns
Pharm x Depress	.00	.00	[-.01, .01]	ns
Pharm x Rationale	-.06	.03	[-.11, -.01]	ns
Dose x Depress	.02	.01	[.01, .04]	<.001
Dose x Rationale	-.05	.04	[-.12, .03]	ns
Pharm x Depress x Rationale	-.03	.01	[-.01, .00]	ns
Dose x Depress x Rationale	-.03	.01	[-.05, -.01]	<.001

Note: Dose = Dosage contrast; Expect = Expectancy contrast; Pharm = Pharmacological contrast; ns = failure to meet statistical significance at level of Benjamini-Hochberg alpha correction