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Acute Alcohol Intoxication Inhibits Bystander Intervention Behavior for Sexual Aggression Among Men with High Intent to Help

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Abstract

Background: Bystander training programs aim to encourage third-party witnesses to intervene in high-risk sexual situations; however, these programs rarely focus on training bystanders to effectively intervene when intoxicated. This is not surprising due to the limited evidence on the proximal effects of alcohol on bystander intervention for sexual aggression. To this end, the aim of the present study was to test the effects of men's self-reported intent to help strangers and acute alcohol intoxication on the likelihood and speed of sexual aggression intervention.

Methods: Participants were 74 men who completed a measure of intent to help (Session 1) and were randomly assigned to consume alcohol or a no-alcohol control beverage (Session 2). Next, they engaged in a novel laboratory paradigm in which they and four confederates (two men, two women) watched a female confederate, who reported a strong dislike of sexual content in the media, view a sexually explicit film which they could stop at any time. Bystander intervention was operationalized as whether and how quickly participants stopped the film.

Results: Findings indicated that (1) intent to help strangers predicted faster sexual aggression intervention, and (2) intent to help strangers predicted a higher likelihood and faster rate of sexual aggression intervention among sober, but not intoxicated, men. This latter finding suggests that among men who endorsed a high willingness to intervene in sexual aggression, alcohol intoxication decreased intervention behavior.

Conclusions: Results demonstrate that alcohol functions as a barrier to intervention for men who would otherwise intervene. Findings are interpreted using an integrative framework for intoxicated sexual aggression intervention and highlight the need for bystander training programs to incorporate alcohol interventions to reduce heavy drinking and psychoeducation to train bystander how to intervene when intoxicated.

Keywords

Sexual assault prevention; bystander behavior; alcohol use; helping

Introduction

“Alcohol is apparently a milk of human kindness.” (Steele & Josephs, 1990)

Bystander training programs are a form of primary prevention that aim to reduce sexual aggression by targeting attitudes and behaviors that support a culture of violence while simultaneously providing skills to intervene in high-risk sexual situations (for reviews, see Jouriles et al., 2018; Ladhardt et al., 2017). Perhaps the most ignored piece of bystander training programs is the role of alcohol. At least half of all sexual assaults involve alcohol consumption by the perpetrator, victim, or both (Abbey, 2002). Further, alcohol-related sexual aggression most often occurs among acquaintances who spend time together at a bar or party (Abbey et al., 1996; Ullman, et al., 1999). In these drinking contexts, bystanders are often present (e.g., Graham et al., 2014) and consuming alcohol prior to 88% of sexual assaults (Haikalis, Leone, Parrott & DiLillo, 2018). Despite a link between alcohol and sexual aggression, there exists not a single published study that examines the acute effects of alcohol on event-based bystander intervention for sexual aggression (hereafter termed sexual aggression intervention). Nearly 30 years ago Steele & Josephs (1990) demonstrated that alcohol intoxication can increase helping behavior; however, we posit that there is reason to suspect that alcohol may also inhibit helping behavior and thus not always be the “milk of human kindness.” The aim of the present study was to test the effects of an established individual-level predictor of bystander behavior, intent to help strangers, and acute alcohol intoxication on the likelihood and speed of sexual aggression intervention.

From Intentions to Behavior

The aim of bystander training programs is to increase prosocial bystander behavior; however, a key focus is to increase proximal variables of bystander intervention, such as willingness or intent to intervene (for reviews, see Jouriles et al., 2018; Katz & Moore, 2013). Theories have postulated that an intention to perform a behavior is the closest cognitive antecedent of behavioral performance (e.g., Ajzen, 1991; Fishbein & Ajzen, 1975; Gollwitzer, 1993; Triandis, 1977). This construct is supported by the Theory of Planned Behavior (Ajzen, 1991), which posits an individual’s behavior is preceded by one’s intentions to perform the behavior. To this end, scholars suggest that intent to help is an important mechanism of bystander intervention for sexual aggression (Banyard & Moynihan, 2011). In a longitudinal study of college students, Banyard (2008) demonstrated greater intent to intervene at an earlier timepoint increased the likelihood of bystander behavior at a later timepoint. Similarly, a longitudinal study of college students demonstrated indirect effects of a bystander training program on bystander behavior through bystander intentions and efficacy at various time points (McMahon et al., 2015). More often, however, bystander intentions are used as a proxy for bystander behavior (e.g., Bannon et al., 2013; Bennet et al., 2015; Elias-Lambert & Black, 2016), thereby limiting our understanding of the intention-behavior link.

Alcohol Use and Bystander Intervention

To date, extant literature has only examined the distal effects of alcohol and bystander intervention. Recent research demonstrates that heavy drinking is associated with less

willingness (Orchowski et al., 2016) and a lower likelihood to intervene (Fleming & Wierma-Mosley, 2015). Further, a recent qualitative study of heavy drinking men found that men reported they would be likely to miss intervention cues when intoxicated (e.g., due to a myopic focus on more entertaining social cues) (Oesterle et al., 2018). Relatedly, an observational study examining sexual aggression intervention in a drinking context found that 79% of bystanders did not intervene (Graham et al., 2014); however, it remains unclear why bystanders were inhibited from intervening, or if they were intoxicated.

The Putative Proximal Effects of Alcohol on Bystander Decision-Making

To explain how alcohol intoxication may act as a barrier to sexual aggression intervention, the present study utilizes an integrative theoretical framework advanced by Leone, Haikalis, Parrott, & DiLillo (2018). This framework integrates the decision-making model of bystander behavior (Latané & Darley, 1970) and Alcohol Myopia Theory (Steele & Josephs, 1990). The decision-making model (Latané & Darley, 1970) posits that bystanders must go through five stages in order to intervene: they must (1) notice the event, (2) interpret it as high-risk, (3) develop a feeling of personal responsibility, (4) decide how to help, and (5) choose to act. At each stage of the decision-making model, bystanders may be ineffective at helping due to barriers that interfere with one's capability to help. Alcohol Myopia Theory (AMT; Steele & Josephs, 1990; Taylor & Leonard, 1983) purports that the pharmacological properties of alcohol narrow attentional focus, restrict internal and external cues individuals perceive, and reduce individuals' capacity to process meaning from information they do perceive. One model of AMT, the attention-allocation model, posits that alcohol impairs working memory, which then restricts the inebriate's ability to perceive and process instigatory and inhibitory cues. As such, intoxicated individuals allocate their attention such that they perceive and process only the most salient cues of a situation (e.g., presence of peers) to the exclusion of less salient inhibitory cues (e.g., sexual disinterest of a female). Drawing on these models, the integrative framework (Leone et al., 2018) suggests that the pharmacological effects of alcohol may pose additional barriers to intervention at multiple steps of the decision making model among certain individuals who are otherwise prepared to help (see Table 1). Indeed, in the only study to date that examined the punitive effects of acute alcohol intoxication on barriers to intervention (Ham et al., 2018), intoxicated, compared to sober, bystanders displayed more difficulty (1) noticing the event (*Step 1*) and (2) interpreting a high-risk situation as requiring intervention (*Step 2*).

Pertinent to the present study, a bystander may not help in high risk sexual situations (*Step 4*) because of uncertainty on how to intervene and/or a skills deficit (Burn, 2009). Even among individuals prepared to intervene when sober, intoxication may impair bystanders' ability to execute those behavioral skills commonly taught in bystander training programs (e.g., distraction, humor). It is well established that acute alcohol intoxication impairs higher order cognitive functioning, including working memory, problem solving, planning, set shifting, psychomotor speed, and response inhibition (Curtin & Fairchild, 2003; Giancola, 2000). To this end, intoxicated bystanders who would be willing to intervene when sober (and likely more attuned to sexual risk-cues) may be less capable of executing a plan to intervene when intoxicated due to the cognitive impairment induced by alcohol.

The Present Study

Research and theory support a bystander intentions-behavior link such that bystanders who report intentions to help are more likely to engage in helping behavior (Banyard, 2008; Banyard & Moynihan, 2011; McMahon et al., 2015). Conversely, alcohol intoxication may impair a bystander's decision-making process and thwart intervention (see Leone et al., 2018). Although alcohol may impair all bystanders to some degree, the pharmacological effects of alcohol may be especially detrimental among individuals who are most likely to help when sober. These individuals may easily overcome barriers to intervention when sober but be more susceptible to (1) the myopic effects of alcohol that focus attention onto salient cues in the environment that decrease intervention (e.g., presence of peers) or (2) the cognitive impairments of alcohol that interfere with intervention.

It was expected that self-reported intent to help strangers would predict increased levels of bystander behavior when a stranger was experiencing an unwanted sexual experience (*Hypothesis 1*). However, one major gap in this literature is the inattention to alcohol's pharmacological effect on sexual aggression intervention. Informed by an integrated theoretical framework (Leone et al., 2018) which posits that alcohol intoxication is a barrier to intervention at multiple stages of the decision-making process, it was hypothesized that alcohol intoxication would predict decreased levels of bystander behavior (*Hypothesis 2*). Finally, it was expected that alcohol would moderate the relation between self-reported intent to help strangers and bystander behavior (*Hypothesis 3*). Specifically, it was expected that intent to help strangers would predict increased levels of bystander behavior among sober, but not intoxicated, men.¹

Materials and Methods

Participants

Healthy, non-treatment seeking social drinking men were recruited from a large metropolitan city in the Southeast through online advertisements and flyers for a two-part study. Upon contacting the laboratory, respondents were provided with a short description of the study, required time commitment, and financial compensation. Interested individuals were screened by telephone for eligibility criteria, which was then verified in a more comprehensive in-person laboratory assessment at Session 1. Within one week of completing the telephone screening interview, ineligible participants were contacted by phone and informed that they would not be eligible to participate.

To be eligible, participants had to self-report that they identified as male and were between the ages of 21 and 30. To minimize the possibility that participants would experience

¹Prior research indicates that perceived peer norms are a significant predictor of one's willingness to intervene (e.g., Brown et al., 2014) and theory suggests the myopic effects of alcohol may narrow attentional focus on salient peer norms and influence intervention (Leone et al., 2018). The present study also aimed to examine the effects of audience social norms (prosocial audience, ambiguous audience) and beverage condition (alcohol, sober) on likelihood of sexual aggression intervention. Participants were randomly assigned to an audience manipulation wherein four confederates engaged in a scripted conversation designed express prosocial or ambiguous norm towards intervention behavior. A chi-square test did not detect a significant difference in intervention likelihood among men in the prosocial condition (19 of 36, or 52%) compared to the ambiguous condition (16 of 38, or 42%), $\chi^2(1, 73) = .85, p = .358$. Further, all main effects of audience and Audience $\times$ Beverage effects were non-significant. Thus, detailed audience manipulation procedures and results are not reported here. Audience condition is controlled for in all analyses.

adverse reactions to the alcohol dose administered, participants who weighed greater than 250 lbs. were not eligible to participate. All participants had to report that on at least three occasions in the past year, they had consumed an alcohol quantity that was equal to or greater than the dose that would be administered in the laboratory. Those who reported past or present attempts to seek treatment for an alcohol or substance use disorder, a psychiatric disorder, a serious head injury, or a condition in which alcohol is medically contraindicated were also excluded.

Of all respondents deemed eligible at telephone screening, 153 men presented to Session 1. Participants were told to abstain from drinking alcohol or using recreational drugs 24 hours prior to testing and to refrain from eating 4 hours prior to testing. Participants who arrived at the laboratory with a positive breath alcohol concentration (BrAC) were not tested and were given an opportunity to reschedule. Eligibility criteria were reassessed upon participants' presentation to Session 1. Of these men, 107 were eligible and presented to Session 2, where all eligibility criteria were re-verified. An additional 33 participants were excluded from analyses (see "Selection of Participants") resulting in a final sample of 74 men ($M_{age} = 23.93$, $SD = 2.65$). Half of participants self-identified as White, 24.3% identified as Black or African American, 12.2% as more than one race, 10.8% as Asian, and 2.7% as American Indian or Alaska Native. Most participants identified as heterosexual (87.8%), had never been married (87.8%), and were not currently enrolled in college (52.7%). The sample earned \$32,331 per year on average and had an average of 16.59 ($SD = 2.28$) years of education. The university's Institutional Review Board approved this study.

Measures

Demographic Form.—This form assessed participants' age, ethnic background, racial identity, highest level of education, education status, income level, and previous sexual aggression training attendance.

Drinking Patterns Questionnaire (NIAAA, 2003).—This 6-item self-report measure assesses an individual's pattern of alcohol consumption during the past 12 months. Of particular relevance were three questions that assessed respondents' *frequency of alcohol consumption during the past year* ("During the last 12 months, how often did you usually have any kind of drink containing alcohol?"), *quantity of alcohol consumption during the past year* ("During the last 12 months, how many alcoholic drinks did you have on a typical day when you drank alcohol?"), and *frequency of heavy episodic drinking the past year* ("During the last 12 months, how often did you have 5 or more drinks containing any kind of alcohol within a two hour period?"). As previously mentioned, an additional question was added to assess respondents' past-year frequency of consuming the weight-based dose of alcohol that they would receive in the laboratory ("During the last 12 months, how often did you drink [weight-based dose number] drinks on one occasion?").

Intent to Help Strangers-Short Form (Banyard et al., 2014).—This 8-item self-report measure assesses participants' intent to help strangers through active bystander behavior. Participants rate each item (e.g., "I talk with people I don't know about watching each other's drinks") on a 1 (*not at all likely*) to 5 scale (*extremely likely*). The per-item

mean was used, with higher scores indicating a greater likelihood of helping. This measure demonstrated good reliability ($\alpha = .94$), consistent with the present sample ($\alpha = .91$).

Laboratory Analogue for Sexual Aggression Bystander Intervention

The proposed study utilized a valid laboratory paradigm to assess sexual aggression intervention (Leone & Parrott, 2018; Leone et al., 2017) using Direct RT 2006 software (Jarvis, 2006). This paradigm builds upon (1) classic bystander paradigms that expose participants to an ostensible emergency and then assess whether and/or how quickly participants intervene (Latané & Darley, 1968), and (2) the well-validated sexual imposition paradigm (Hall & Hirschman, 1994). In the sexual imposition paradigm, a male participant and female confederate engage in a media-rating task that supposedly assesses their preferences for various genres of media. The participant then receives a media rating profile based on the female confederate's responses, which explicitly states her strong dislike of sexual content in the media. Next, the participant views two film clips that depict a nonsexually explicit or sexually explicit scene. The participant is asked to select one film to show the female confederate and is informed that he will be able to view the woman via closed circuit television as she watches the film he selected. Sexual aggression is operationalized as subjecting an unwilling woman to the sexually explicit film. Research has demonstrated a past history of sexual assault predicts men's selection of a sexually explicit film (e.g., Franz et al., 2017; Hall et al., 2006; Parrott et al., 2012), and men believe that female is uncomfortable and upset by the film (Hall et al., 2006).

In line with classic bystander paradigms, the subjection of the unwilling woman to the sexually explicit film represents the ostensible emergency to which a bystander is exposed and can intervene to prevent. Sexual aggression intervention is operationalized as whether the participant stops the video and the time in seconds it takes the participant to stop the video.

Procedure

Participation occurred on two separate days. During Session 1, informed consent was obtained, eligibility was confirmed, and participants completed a questionnaire battery that included the measure of intent to help strangers. Eligible participants were scheduled for Session 2 on a separate day; ineligible participants were paid at a rate of \$10 per hour and thanked for their time.

During Session 2, participants were greeted in the lobby by an experimenter and led to a private room. Participants were told the purpose of the study was to examine the relationship between alcohol, social attitudes, and social behaviors and that five other participants (all confederates) were also enrolled. As part of the consent process, participants were required to give their keys (if they were carrying any), cell phone, and valid picture ID (e.g., a driver's license) to the experimenter with the understanding that these items would be returned at the end of the study upon reaching a BrAC of 0.04%. After obtaining informed consent, an experimenter re-verified screening criteria, checked age with a picture ID, ensured that the participant's BrAC was 0%, and conducted a field sobriety test. Participants were randomly assigned using Urn randomization (Stout et al., 1994) to a beverage (alcohol,

no alcohol control) and peer norm (prosocial, ambiguous) condition. The Urn randomization included variables that reflected participant demographics, alcohol use, and previous sexual aggression training attendance.

Next, participants received instructions for the study. The experimenter followed a standardized script for all study proceedings. Participants were informed of their assignment to a beverage condition. In order to create an alcohol-context, participants were also informed that the five confederates (two men and three women including the female target, were randomly assigned to the alcohol condition. To reinforce participants' belief that confederates had been drinking, this information was presented multiple times during the study and the clothes of the four confederates were sprayed with an alcohol-water mixture immediately prior to interacting with the participant.

Participants assigned to the Alcohol group were administered two drinks consisting of an overall dose of 0.99 g/kg body weight of 95% ethanol USP mixed in a 1:5 ratio with Tropicana orange juice. This single alcohol dose reliably produces BrACs between .08%–.12%. Participants in the No-Alcohol Control group were administered an isovolemic beverage consisting solely of orange juice. All beverages were poured into two glasses in equal quantitates and served chilled with no ice. Participants in the Alcohol group were told that they are receiving a “moderate” dose of alcohol. Twenty minutes was allotted for beverage consumption. Participants were given their glasses at equally-spaced times during the twenty-minute interval to control for drinking rate. BrACs for participants in the Alcohol group was monitored every five minutes after finishing their beverages with the Alco-Sensor IV breath analyzer (Intoximeters, Inc., St. Louis, MO). The laboratory task commenced after they reached .08% on the ascending limb of the BAC curve. Participants in the No-Alcohol control group began the laboratory task following consumption of their beverage.

Upon reaching a BrAC of .08% (Alcohol condition) or following drink consumption (No-alcohol control condition), participants completed the laboratory analogue for sexual aggression intervention. During the laboratory analogue, participants completed a media-rating questionnaire on their computer that assessed media preferences. Their answers were summarized into a “media profile” and this profile, and the profiles of the four confederates, were ostensibly shown to the female confederate; conversely, her profile was shown to the participant and ostensibly to the four other confederates on their respective computers. The woman's profile explicitly stated that she does not like to watch sexually explicit material. To maximize awareness to the woman's preferences, participants were unable to advance the screen which presented her media preferences for 30 seconds. Next, participants viewed descriptions and three “screen shots” from a sexually and nonsexually explicit foreign film on their computer for a minimum of 30 seconds. The sexually explicit film description stated that the majority of the four-minute film featured a man and woman engaging in consensual sexual intercourse that involved kissing, foreplay, and implied intercourse in numerous sexual positions. The nonsexually explicit film clip description stated that the majority of the four-minute film depicted a man and a woman cooking. The presentation order of these stimuli was counterbalanced.

The participant and the four other confederates were then asked to select a sexually explicit or non-explicit film clip for the female target to view and were informed that the film clip she ultimately viewed would be determined by randomly selecting from their five choices. After selection of the film clip, the four confederates were instructed by the experimenter to enter the participant's room and engage in a scripted audience social norms manipulation. Within this manipulation, one male confederate indicated that he chose the sexually explicit film to show the woman, whereas the other three confederates stated that they chose the non-sexually explicit film. The participant and four confederates were then informed that the sexually explicit film (selected by a male confederate) was randomly selected and would be shown to the woman. They were informed that they would view the woman on their computer screen via a webcam as she watched the film clip and could stop the video at any time by pressing the "Enter" key on the keyboard. The participant was seated in front of the computer and keyboard and the four confederates were seated out of reach of the keyboard – thus only the participant could press the "Enter" key without significant physical movement.

Immediately prior to watching the female confederate view the film, the peer norm manipulation was implemented. This involved four confederates who set a prosocial or ambiguous norm via scripted conversations which included statements in support of intervention (i.e., prosocial condition: "Well, don't you remember what her profile said? She said she doesn't want to watch that kind of stuff. I don't want her to be uncomfortable, it's not right to do that") or statements that referenced the quality of the clips but did not mention the woman's preferences (i.e., ambiguous condition: "Well, I thought the food clip was just a better clip. That's why I picked it.").

The participant and four confederates then watched the woman view the sexually explicit film clip. In actuality, a pre-recorded video of the female confederate was played. Participants were led to believe that her galvanic skin response was being assessed, which ostensibly indicated her level of "comfort or discomfort" while watching the video, and they could view her physiological responding on their computer screen. This was depicted by bogus output that was displayed simultaneously next to the pre-recorded video, which depicted her level of discomfort slowly rising over the four-minute video clip and reaching "extremely uncomfortable" by the end. The woman's face remained neutral throughout the film.

Following completion of the study, participants were probed for deception and debriefed. Participants who consumed alcohol remained in the laboratory until their BrAC fell to .04%, at which time they were escorted to prearranged transportation by laboratory staff. Participants were compensated at the rate of \$10 per hour and thanked for their time.

Results

Selection of Participants

Of the 107 participants who completed Session 2, three participants experienced a technical error, two participants identified a confederate as someone they knew or vice versa, one participant indicated awareness of the study's aims, and seven participants endorsed the belief that the other participants were confederates. Additionally, 20 participants (19.2%)

selected the sexually explicit film to show to the female confederate². As selecting the sexually explicit film is operationalized as an act of sexual aggression, these participants were excluded from analyses. Removal of these participants from subsequent analyses resulted in a final sample of 74 participants.

Preliminary Analyses

A repeated measures ANOVA indicated that participants' in the alcohol condition had a significantly higher BrAC post-paradigm ($M = .111$, $SD = .03$) than pre-paradigm ($M = .095$, $SD = .03$), $F(1, 35) = 6.22$, $p < .001$. This indicated that participants were on the ascending limb of the BrAC curve. Descriptive statistics and bivariate correlations for pertinent study variables were computed for the experimental sample and are displayed in Table 2. Frequency of alcohol use was positively associated with frequency of heavy episodic drinking (i.e., frequency of heavy consumption (5+ drinks) in the past 12 months). Heavy episodic drinking was positively associated with intervention likelihood and negatively associated with intervention time such that heavy episodic drinkers were more likely to intervene (though slower to do so). Intervention likelihood was negatively associated with intervention time such that individuals who intervened were quicker to stop the video.

Preliminary data analyses revealed intervention time was significantly skewed³ (skewness = -1.11 , $SE = .28$; kurtosis = $-.01$, $SE = .55$). Additionally, 52.7% of the sample did not intervene ($n = 39$). A chi-square test was conducted on audience social norm and beverage condition to examine group differences in intervention. A significant difference in intervention likelihood was not detected among men in the prosocial condition (19 of 36, or 52%) compared to the ambiguous condition (16 of 38, or 42%), $\chi^2(1, 73) = .85$, $p = .358$. Similarly, a significant difference was not detected in intervention likelihood among men in the alcohol condition (19 of 37, or 51%) compared to the no-alcohol control condition (16 of 37, or 43%), $\chi^2(1, 73) = .49$, $p = .485$.

Analytic Strategy

Data were modeled using STATA version 14.2. Prior to analyses, audience social norm (prosocial = 0, ambiguous = 1) and beverage (no-alcohol control = 0, alcohol = 1) condition were dummy coded. Standardized scores are reported for all predictor variables ($M = 0$, $SD = 1$). Interaction terms were calculated by obtaining cross-products of first-order variables.

To examine the effects of bystander intentions and beverage condition on intervention *likelihood*, a binary logistic regression was used. Audience condition was entered into Step 1 as a covariate, intent to help strangers (Hypothesis 1) and beverage condition (Hypothesis 2)

²Among the 20 participants to select the sexually explicit film clip for their individual choice, 25% ($n = 5$) stopped the film. These five men took an average of 220.45 seconds ($SD = 38.64$) to stop the film clip. In other words, men who selected the sexually explicit film clip, compared to the non-sexually explicit film clip, were less likely to intervene (25% vs. 53%), and if they did, took longer to do so (220.45 vs. 187.81 seconds).

³Although a natural log transformation significantly reduced skew of the intervention speed variable (skewness = $.21$, $SE = .28$, kurtosis = -1.90 , $SE = .55$), transformation data can be problematic for two reasons: 1) interpretation of a transformed variable is problematic because the relationship among variables has changed (Osborne, 2002) and (2) it is possible to eliminate effects by using a transformed variable (Whelan, 2008). To this end, it was deemed appropriate to account for the skewness of this variable in our analytic approach via Cox Proportional Hazard models.

were entered into Step 2, and the Intent to Help Strangers $\times$ Beverage Condition interaction (Hypothesis 3) was entered into Step 3.

To examine the effects of intent to help strangers and beverage condition on intervention *speed*, a Cox Proportional Hazard (PH) model was used. A Cox PH model is a continuous-time survival analysis that accounts for the possibility that participants who have not yet experienced the event of interest may do so in the future. In other words, this analysis accounts for the possibility that participants who did not intervene may have done so if given more time. In this model, the dependent variable is a hazard ratios (HR), which is the instantaneous probability that an individual will experience an event (i.e., intervention) at any point and time given that they have not yet experienced the aforementioned event (see Singer & Willett, 2003). In the Cox PH model, audience social norm condition, intent to help strangers (Hypothesis 1), beverage condition (Hypothesis 2) and the Intent to Help Strangers $\times$ Beverage Condition interaction (Hypothesis 3) were entered simultaneously. Significant interactions were probed according to guidelines from Frazier, Tix, and Barron (2004) and plotted at 1SD above and below the mean.

Test of Hypotheses

Intervention Likelihood.—In the binary logistic regression, Step 1 (Nagelkerke $R^2 = .02$, $p = .358$) and Step 2 (Nagelkerke $R^2 = .04$, $p = .513$) were not significant and there were no significant main effects (Hypotheses 1–2). In Step 3 (see Table 3), the model was significant Nagelkerke $R^2 = .18$, $p = .032$. In support of Hypothesis 3, a significant Intent to Help Strangers $\times$ Beverage Condition interaction was detected ($OR = .22$, $p = .007$, $95\% CI = .08, .67$). As depicted in Figure 1, explication of this interaction indicated that the relation between intent to help strangers and likelihood of intervention was significant and negative among intoxicated men ($OR = .40$, $p = .017$, $95\% CI = .19, .85$) but non-significant and positive among sober men ($OR = 1.77$, $p = .144$, $95\% CI = .82, 3.84$). Thus, intoxication decreased the likelihood of intervening among men with higher, compared to lower, intentions of helping. (Table 4)

Intervention Speed.—In the Cox PH model (see Table 3), the proportional-hazards assumption was satisfied ($\chi^2(4, 69) = 5.89$, $p = .207$). In support of Hypothesis 1, results indicated a conditional main effect of intent to help strangers ($HR = .59$, $p = .031$, $95\% CI = .37, .95$). This effect was qualified by a significant Intent to Help Strangers $\times$ Beverage Condition interaction (Hypothesis 3) ($HR = .39$, $p = .007$, $95\% CI = .19, .77$). Examination of this effect revealed that greater endorsement of intent to help strangers corresponded to a significantly faster rate of intervention (i.e., lower hazard ratios) among men in the No-Alcohol Control condition ($HR = .59$, $p = .031$, $95\% CI = .37, .95$), relative to men in the Alcohol condition ($HR = 1.53$, $p = .096$, $95\% CI = .93, 2.52$).

Hazard rates were plotted for the alcohol and no-alcohol control conditions at 1 *SD* above and below the mean of intent to help strangers scores. As depicted in Figure 2, the median hazard ratios (hazard ratio = .50) for each subgroup suggest that men lower on intent to help strangers in the sober condition had a median intervention rate of approximately 30 seconds, men higher on intent to help strangers in the sober condition had a median intervention rate

of approximately 80 seconds, and men higher on intent to help strangers in the alcohol condition had a median intervention rate of approximately 160 seconds. Men lower on intent to help strangers in the alcohol condition did not reach this hazard rate. The hazard ratios for sober men are initially smaller and decreased more rapidly for men lower, compared to higher, on intent to help strangers. This pattern indicates that sober men with lower intent to help strangers intervened faster, although sober men with higher and lower intent to help strangers become much more similar to each other around 3 minutes and 20 seconds into the film. Conversely, there was a marked difference between these hazard ratios and those among the intoxicated men who were higher and lower in intent to intervene. The hazard ratios for intoxicated men are initially similar; however, among intoxicated men higher on intent to help strangers, hazard ratios decreased more quickly. This pattern indicates that intoxicated men who were higher on intent to help strangers intervened faster compared to intoxicated men who were lower on intent to help strangers, albeit still slower than sober men.

Discussion

The aim of the present study was to test the effects of intent to help strangers and acute alcohol intoxication on the likelihood and speed of sexual aggression intervention. It was expected that intent to help strangers would positively predict bystander behavior (Hypothesis 1), alcohol intoxication would negatively predict bystander behavior (Hypothesis 2), and alcohol would moderate the relation between intent to help strangers and bystander behavior (Hypothesis 3). Hypotheses were partially supported.

Consistent with prior research and theory (Ajzen, 1991; Banyard, 2008; McMahon et al., 2015), results indicate that intent to help strangers predicts intervention speed (Hypothesis 1). In other words, individuals who reported greater intent to help strangers were faster to intervene than those lower in intent to help strangers. It is surprising that individuals who reported a greater intent to help strangers were not more likely to intervene; however, as evidenced by the Intent to Help Strangers $\times$ Beverage condition interaction, it appears that context plays an important role in intervention likelihood. Greater intentions to intervene were associated with an increased likelihood to intervene among sober men; but, alcohol intoxication significantly decreased this likelihood. These findings add to the limited evidence of the bystander intentions-behavior link and provide support for targeting intentions in bystander training programs.

Contrary to Hypothesis 2, acute alcohol intoxication did not independently influence men's speed or likelihood of intervention. This is surprising given studies of the distal effects of alcohol that suggest heavy drinking is associated with less intentions to intervene (Fleming & Wierma-Mosley, 2015; Orchowski et al., 2016) and more barriers (Oesterle et al., 2018). It is plausible that our small sample size did not allow us to capture the independent effects of acute alcohol intoxication; however, it may also be that intervention is a result of both situational and individual factors. Indeed, drinking appears to impede behavior among men who self-report a willingness to intervene when they witness sexual aggression.

Results indicate that intent to help strangers is associated with a decreased likelihood of sexual aggression intervention among intoxicated, but not sober, men (Hypothesis 3). Put another way, *high intent to help men appear to be most susceptible to the inhibiting effects of alcohol*. Thus, while alcohol may be “the milk of human kindness” in some domains (Steele & Josephs, 1990), these data suggest that alcohol thwarts prosocial bystander behavior in those with the strongest intentions to do so. Explanations for this effect span the steps of the decision-making model (see Leone et al., 2018). Specific to the bystander-intentions link, the myopic effects of alcohol likely narrow attentional focus on negative appraisals from peers and perceptions of social pressures that discourage intervention. For example, despite a willingness to intervene when sober, intoxicated men may focus more so on approval from peers (i.e., salient cue) than on the female’s sexual disinterest (non-salient cue), thereby impeding intervention. Moreover, the acute effects of alcohol compromise executive functioning (Curtin & Fairchild, 2003; Giancola, 2000) which may result in impairment when deciding how to help when inebriated. Thus, these men may be able to execute a plan when sober but are unable to do so when intoxicated.

Intent to help strangers also predicts intoxicated men’s intervention rate, *albeit these men are still markedly slower at intervening relative to sober men*. Specifically, hazard ratios from the Cox PH model that take into account if and when sexual aggression intervention occurs indicate that sober men lower on intent to help strangers intervened the fastest followed by sober men who were higher on intent to help strangers. Further, among intoxicated men, those higher on intent to help strangers intervened *faster* than those lower on intent to help strangers, but still slower than sober men. Considering that alcohol intoxication preceded any anxiogenic cues in this study (e.g., bystander presence), alcohol likely disrupted the appraisal of these cues as threatening (see Sayette, 1993), providing one “liquid courage” to intervene. These men may also have intervened faster than their low intent to help strangers counterparts because if intervention does have socially undesirable outcomes, men can blame their actions on alcohol (van Bommel et al., 2016).

Among sober men, those with high intent to intervene were *slower* to stop the video than those with lower intent to intervene. Despite this difference in speed, both groups of sober men were equally likely to have intervened after approximately three minutes. It may be that men who want to help take longer to navigate a safe and effective plan to help. For example, in the present study, participants may have attempted to seek “safety in numbers” by garnering others’ agreement that intervention was necessary. Men higher on intent to help strangers, who are more likely to intervene, may have confidence that they are able to intervene in sexual aggression if and when they have an opportunity; however, they may not be fully equipped with the skills needed to quickly navigate intervention ergo decreasing their rate of intervention.

Limitations

Regarding limitations, bystander behavior was operationalized as whether, and how quickly, participants intervene in a woman’s unwanted sexual experience by stopping a video. However, bystanders engage in an array of behaviors when witnessing sexual aggression. Notably, the present study did not measure intervention behaviors in which participants

attempted to confront the confederates who selected the sexually explicit film. The victim and other ostensible bystanders were all strangers. Prior research indicates that the relationship between a bystander and the victim, perpetrator, and other bystanders differentially predicts intervention (e.g., Bennett et al., 2014; Katz et al., 2015). Further, all confederates in the study were ostensibly intoxicated, and it remains unclear how findings would differ if the drinking status of bystanders varied or was ambiguous to participants. Finally, results are based on a sample of racially diverse socially drinking men from the community and may not be generalizable to other populations including women and college students. There exists a nuanced relationship between gender, race, and year in college and peer norms and bystander actions (Brown et al., 2014) highlighting the need for differences across demographic factors to be explored in future research. In particular, over half of the sample was not currently enrolled in college, and thus these results may not generalize to college samples where bystander training programs are often utilized.

Future Directions and Implications

More research is needed to examine corollaries of acute alcohol intoxication on bystander behavior among individuals who, when sober, would likely intervene. Alcohol's effect on behavior varies as a function of dispositional and situational level factors (e.g., Crane et al., 2016; George & Stoner, 2010; Parrott & Eckhardt, 2018) and understanding who is most at risk of not intervening when witnessing sexual aggression will help target these individuals in bystander training programs. Future research is needed to explore stages of the decision-making model (Latané & Darley, 1970) in which alcohol presents the greatest barriers to intervention. For example, in the present paradigm, a bogus measure of distress was used to standardize the women's discomfort while watching the sexually explicit film; however, future research should explore whether intoxicated bystanders are less likely to notice a women's cues of distress or disinterest.

At the nexus of the discussion of alcohol and bystander intervention is the likely reality that intoxicated bystanders are most likely to witness sexual aggression, and least likely to intervene due to the impairing effects of acute alcohol intoxication (Leone et al., 2018). One strategy to target this high-risk group is for bystander training programs to also target heavy drinking to circumvent the risk of bystanders witnessing sexual aggression while intoxicated. Bystanders who have good intentions to intervene may have difficulty doing so when intoxicated, and thus psychoeducation may be fruitful in preventing heavy drinking in high-risk contexts. Although evidence for the effects of drinking on bystander intervention is still in its infancy, programming efforts should begin accounting for the inhibiting effects of acute alcohol intoxication.

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Figure 1.

The moderating effects of intent to help strangers on the relation between beverage condition and intervention likelihood. Note: Values are plotted at 1 SD above and below the mean.

Figure 2.

The moderating effects of beverage condition on the relation between intent to help strangers and intervention speed. Note: Higher intervention rate scores = slower intervention. Values are plotted at 1 SD above and below the mean.

Table 1.

Putative Proximal Effects of Alcohol on Bystander Decision-Making (Leone, Haikalis, Parrott, & DiLillo, 2018).

Step	Barrier	Influences	Effects of Acute Alcohol Intoxication
1. Notice an event	Failure to notice	<ul style="list-style-type: none"> • Self-focus • Sensory distractions • Inattentional blindness 	<ul style="list-style-type: none"> • Increases susceptibility to distractions or mind-wandering (Sayette et al., 2009) • Exacerbates inattentional blindness (Clifasefi et al., 2006)
2. Interpret as intervention appropriate	Failure to identify situation as a risk	<ul style="list-style-type: none"> • Ambiguity • Ignorance 	<ul style="list-style-type: none"> • Cue misinterpretation (Abbey et al., 2005; Farris et al., 2010) • Failure to identify danger cues (Testa et al., 2000) • Delay in identifying inappropriate sexual behavior (Gross et al., 2001; Marx et al., 1997)
3. Take responsibility	Failure to take responsibility	<ul style="list-style-type: none"> • Diffusion of responsibility • Attributions of victims' worthiness 	<ul style="list-style-type: none"> • Narrow bystanders' attentional focus towards other potential intervenors • Narrow bystanders' attentional focus towards victim's "worthiness" and "responsibility"
4. Decide how to help	Failure to intervene due to uncertainty or skills deficit	<ul style="list-style-type: none"> • Lack of skills 	<ul style="list-style-type: none"> • Impairs high order cognitive functioning, including working memory, problem solving, planning, set shifting, psychomotor speed, and response inhibition (Curtin & Fairchild, 2003; Giancola, 2000) needed to execute skills
5. Choose to act	Failure to act due to audience inhibition	<ul style="list-style-type: none"> • Social Norms 	<ul style="list-style-type: none"> • Narrow bystander's attention on salient peer norms

Table 2.

Descriptive Statistics and Correlations for Study Variables

Variable	<i>M</i>	<i>SD</i>	2.	3.	4.	5.	6.	7.	8.
1. Drinking Frequency	100.18	76.45	.03	.26 [*]	.06	.21	-.16	-.16	.04
2. Drinking Quantity	4.11	2.03	—	.12	.05	.09	-.06	.06	-.04
3. Heavy Episodic Drinking	32.53	40.35	—	—	-.05	.02	-.12	.30 ^{**}	-.39 ^{**}
4. Intent to Help Strangers	4.29	.58	—	—	—	-.04	.13	-.13	-.03
5. Beverage Condition	—	—	—	—	—	—	.00	.08	-.02
6. Audience Condition	—	—	—	—	—	—	—	-.11	.02
7. Intervention	—	—	—	—	—	—	—	—	-.80 ^{**}
8. Intervention Time	187.81	69.13	—	—	—	—	—	—	—

n = 74; Beverage Condition 0 = no-alcohol control, 1 = alcohol; Audience Condition 0 = prosocial, 1 = ambiguous; Intervention 0 = no intervention, 1 = intervention; Alcohol Consumption = frequency of alcohol consumption in the past 12 months (in days); Alcohol Quantity = drinks per drinking day in past 12 months; Heavy Episodic Drinking = frequency of heavy consumption (5+ drinks) in the past 12 months;

*
p < .05,

**
p < .01

Table 3.

Logistic Regression for the Moderating Effects of Beverage Condition on the Relation between Intent to Help Strangers and Intervention Likelihood

	<i>B</i>	<i>S.E.</i>	<i>OR</i>	<i>95% CI</i>	<i>p</i>
Model 1					
Audience Condition	.43	.47	1.54	.61, 3.85	.359
Model 2					
Audience Condition	.38	.48	1.49	.57, 3.71	.428
Intent to Help Strangers	-.24	.24	.79	.49, 1.27	.331
Beverage Condition	-.32	.47	.73	.29, 1.84	.504
Model 3					
Audience Condition	.66	.52	1.93	.70, 5.38	.205
Intent to Help Strangers	.57	.39	1.77	.82, 3.82	.144
Beverage Condition	-.36	.50	.70	.26, 1.87	.475
Intent to Help Strangers × Beverage	-1.50	.56	.22	.08, .67	.007

Audience social norms condition: prosocial = 0, ambiguous = 1; Beverage condition: no-alcohol control = 0, alcohol = 1.

Table 4.

Hazard Model for the Moderating Effects of Beverage Condition on the Relation between Intent to Help Strangers and Intervention Likelihood

	<i>HR</i>	<i>95% CI</i>	<i>p</i>
Audience Condition	.70	.35, 1.38	.299
Intent to Help Strangers	.59	.37, .95	.031
Beverage Condition	1.34	.66, 2.71	.415
Intent to Help Strangers × Beverage Condition	2.59	1.30, 5.17	.007

Audience social norms condition: prosocial = 0, ambiguous = 1; Beverage condition: no-alcohol control = 0, alcohol = 1