Addictive Behaviors 60 (2016) 32–36

Contents lists available at ScienceDirect

Addictive Behaviors

journal homepage: www.elsevier.com/locate/addictbeh

Alcohol use, risky sexual behavior, and condom possession among bar patrons

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HIGHLIGHTS

- Bar patrons' intentions to engage in unsafe sex varied by sex and BrAC.
- Significant predictors of condom possession were gender, race, age and BrAC level.

ARTICLE INFO

Article history:
Received 28 October 2015
Received in revised form 4 February 2016
Accepted 29 March 2016
Available online 6 April 2016

Keywords:
Alcohol consumption
Risky sexual behavior
Condom possession

ABSTRACT

Purpose: The current study seeks to: 1) assess the relationship between alcohol consumption and intentions to engage in unprotected sex in an uncontrolled environment, and 2) to identify if covariates (race, age, sex, breath alcohol content (BrAC), intentions to engage in sex, hazardous drinking rates) are significant predictors of condom possession during time of uncontrolled alcohol consumption.
Methods: Data were collected from 917 bar patrons to assess alcohol use using the Alcohol Use Disorders Identification Test (AUDIT-C), BrAC levels, intentions to engage in risky sex, and condom possession. Correlational analysis and hierarchical binary logistic regression was conducted using SPSS.
Results: Correlational analyses indicated a negative relationship between AUDIT-C scores ($r = -0.115$, $p = 0.001$), BrAC ($r = -0.08$, $p = 0.015$), and intentions to use a condom. Over 70% of participants intended to use a condom if they engaged in sex; however, only 28.4% had a condom to use. The regression analysis indicated the predictive model ($\chi^2 = 114.5$, df = 8, $p < 0.001$) was statistically significant, and correctly classified 72.9% of those in possession of a condom.
Conclusions: Alcohol consumption was associated with intentions to have unprotected sex; however, intentions to engage in protected sex and condom possession were higher for males and those with higher BrAC levels.

1. Introduction

For decades, alcohol use has been linked to engagement in sexual behaviors (Patrick & Maggs, 2009). Specifically, over 600 studies have assessed the relationship between alcohol use and having sex (Cooper, 2006). Most of these studies suggest a positive relationship exists between alcohol consumption and engagement in sexual behaviors (Cooper, 2006; Cooper & Orcutt, 2000). Furthermore, alcohol use has often been associated with intending to and engaging in risky sexual behaviors, such as casual sex, sex with multiple partners, and unprotected sex (Cooper, 2002; Davis, Hendershot, George, Norris, & Heiman, 2007).

Experimental studies have investigated the relationship between alcohol use and unprotected sex, specifically by assessing intentions to engage in unsafe sex after alcohol consumption (Rehm, Shield, Joharchi, & Shuper, 2011). Although intent versus actual behaviors has been the focus of these studies, conclusions indicate that focusing on intentions provides information on potential associations between alcohol consumption and sexually transmitted infections (STIs), including HIV, given the strong correlation between condom use intent and actual condom use behavior (Rehm et al., 2011; Sheeran, Abraham, & Orbell, 1999). According to a meta-analysis assessing experimentally controlled studies regarding alcohol use and intentions to have unprotected sex, Rehm et al. (2011) indicated that results compiled from 12 studies suggest that an increase in blood alcohol concentration (BAC) of 0.1 mg/ml resulted in a 5% increase in the likelihood of one having unprotected sex. However, these results could be limited by the controlled research environment, and as suggested by researchers Rehm et al. (2011), a

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http://dx.doi.org/10.1016/j.addbeh.2016.03.035
0306-4603/

natural environment (such as a bar-like atmosphere) where novel sex partners are present "may increase the probability of [one] engaging in unsafe sex" (p. 57).

Perceived access to or possession of condoms has been identified as a barrier for consistent condom use, especially among females (St. Lawrence et al., 1999). Given that much of the research investigating alcohol use and unprotected sex employs experimentally controlled studies centered around measuring intentions to use condoms, rather than actual use or condom possession during time of alcohol consumption (Rehm et al., 2011), additional research examining how higher breath alcohol content (BrAC) levels in a natural environment (i.e. field study) impact intent to use condoms and condom possession at the time of alcohol use is warranted. Therefore, the primary purpose of this study is twofold: 1) to assess the relationship between alcohol consumption and intentions to engage in unprotected sex in an uncontrolled environment, and 2) to identify if covariates (race, age, sex, BrAC, intentions to engage in sex, hazardous drinking rates) are significant predictors of condom possession during time of uncontrolled alcohol consumption.

2. Methods

2.1. Data collection

Data collection protocols utilized by Barry, Chaney, and Stellefson (2013) and replicated by Chaney et al. (2014) were employed. After approval from the university's Institutional Review Board (IRB), a series of four anonymous field studies were conducted in a restaurant and bar district, with approximately 15 drinking establishments, located within a southeastern college community. Data were collected by over 40 trained students, and supervised by four university researchers, from approximately 11:00 pm to 2:00 am, during fall 2014 (September–November) on two Thursday and two Friday nights. Student data collectors were required to attend a 2-h training, conducted by four faculty supervisors on the research protocols (including required IRB and human subjects training) prior to being allowed to assist in data collection.

During data collection evenings, the research station was supervised by the university researchers, and consisted of a table with bottled waters, 3-oz disposable cups, snacks for incentives, surveys, informed consent documents, clipboards, pens, hand sanitizer, eight Alco-Sensor IV's, a hand-held breath alcohol testing instrument manufactured by Intoximeters, Inc., and mouthpieces for the Alco-Sensor IV. The research station was set-up in a location approximately 50 m from the downtown, drinking establishments. A large sign reading "Alcohol Research" was affixed to the side of the research station to publicize the project to pedestrians and bar patrons. Moreover, research team members wore yellow shirts to identify themselves with the alcohol research project, and research teams were equipped with clipboards, informed consent documents, surveys, water, pens, mouthpieces, and a handheld breath testing device. The supervising faculty would periodically restock research team members with any materials needed throughout the evening.

Teams of student data collectors solicited participation from bar patrons entering or exiting the drinking establishments throughout the evening. Respondents were included in the study if they (1) were patrons of the drinking establishments, (2) indicated being 18 years of age or older, and (3) verbally consented to participate. For those that verbally agreed to participate, the trained data collector would provide an explanation of the study and obtain verbal informed consent from each participant. Individuals, other than those recruited from the bars and the public sidewalk, showing interests in participating in the study (i.e. walked up to a research team member and asked to participate) were also allowed to participate. If the individual responded "no" to participating, data collection did not proceed. Following verbal consent, a trained interviewer administered a face-to-face interview, in a one-on-one manner that protected the responses of the participant, using a structured interview form to assess alcohol use via the three AUDIT-C items (Bush, Kivlahan, McDonnell, Fihn, & Bradley, 1998), breath alcohol concentration (BrAC), intentions to engage in unprotected sex, and condom possession. Additionally, basic demographic data were obtained. To provide feedback to participants on their intoxication levels, procedures outlined by Thombs et al. (2009) were utilized. In brief, the participant's BrAC was measured using one of the eight handheld breath testing devices. General feedback regarding the participant's BrAC and level of intoxication was provided. Individuals with a BrAC level over 0.02 mm/kg were cautioned not to drive, and the risks of those with higher BrAC were emphasized. Participants were provided with "walk-away" cards containing information for the PI, the university's institutional review board, transportation services, and local sources for help for an alcohol problem. The precise BrAC reading was not provided to participants due to concerns that some participants may continue to consume alcohol if they perceive their intoxication level to be low. Alternatively, a stoplight graphic was used to illustrate the BrAC measures – Danger/Red Light (0.08 and above), Caution/Yellow Light (0.02–0.07), and Safer/Green Light (<0.02). No person was told they were "safe" if any alcohol had been consumed, but participants were told within which range their BrAC fell. Once the interview was completed, the interviewer would place the survey in a secure standing ballot box located at the research station. Data collection per participant took approximately 5–8 min.

2.2. Measures

To measure hazardous alcohol use, three AUDIT-C (Bush et al., 1998) items were used. Collectively, the items measure frequency of drinking alcohol (Item #1 – "How often do you have a drink containing alcohol?"), quantity of drinks (Item #2 – "How many standard drinks containing alcohol do you have on a typical day?"), and binge drinking (Item #3 – "How often do you have six or more drinks on one occasion?"). Scale scores range from 0 to 12, with five response options per item. The response options are coded 0–4 (Bradley et al., 2007; Bush et al., 1998). Sum scores of 3 or more for females and 4 or more for males reveal hazardous drinking behavior or alcohol use disorders (Dawson, Smith, Saha, Rubinsky, & Grant, 2012; Johnson, Lee, Vinson, & Seale, 2013; Reinert & Allen, 2007).

Intentions to engage in sexual behaviors were measured with two items, 1) "To what extent do you agree/disagree with the statement, I intend to engage in sex (including vaginal, oral, and/or anal sex) tonight", and 2) "To what extent do you agree with the statement, If I engage in any sexual activity tonight (including vaginal, oral and/or anal sex), I intend to use a condom for protection." Response options for the first item included, "strongly disagree, disagree, agree, strongly agree, and I have not really thought about it". For the second item, options included, "strongly disagree, disagree, agree, strongly agree, not sure, and not applicable". These response options were dichotomized as "intentions to engage in sex" and "intentions to use protection" (strongly agree and agree) versus "no intentions to engage in sex" and "no intentions to use protection" (strongly disagree and disagree). These items were dichotomized in order to utilize a regression model to evaluate the predictive power of these covariates for predicting condom possession.

Condom possession was measured with a single item, "Do you currently have a condom with you?" Participants responded with either "yes" or "no". This item was asked following the intention items.

To measure BrAC samples, the Alco-Sensor IV, manufactured by Intoximeters, Inc. was used. Alco-Sensor IV is a handheld breath alcohol-testing device that provides accurate testing of BrAC. Each team of trained students had one breathalyzer to collect the BrAC samples, and BrAC was recorded on the interview form for each participant.

2.3. Data analysis

Using the Statistical Package for Social Sciences (SPSS) v20, descriptive statistics were computed to summarize participant characteristics.