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Harmful alcohol use and alcohol-related sex expectancies as predictors of risky sex among african american female college drinkers

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Abstract

African American college women are experiencing sex-related negative consequences at alarming rates. Alcohol use and alcohol-related sex expectancies are predictors of risky sexual behavior among college women; however, African American college women are often underrepresented in empirical studies. The purpose of the present study was to examine the link between alcohol-related sex expectancies (i.e., enhancement, sexual risk taking, and disinhibition expectancies), alcohol use, and risky sexual behavior among a sample of 222 sexually active African American female college drinkers. Participants completed measures assessing alcohol-related sex expectancies, typical weekly drinking, harmful alcohol use, and risky sexual behavior. Results indicated that combined sexual risk taking and disinhibition alcohol-related sex expectancies predicted both typical weekly drinking and harmful alcohol use. In addition, enhancement alcohol-related sex expectancies and harmful alcohol use predicted risky sexual behavior; however, typical weekly drinking did not. Clinical and research implications are discussed.

Keywords

African American college women; alcohol use; alcohol-related sex expectancies; risky sexual behavior

Sexual health has become an area of great public health concern, most prominently among African American women (Painter, Wingood, DiClemente, DePadilla, & Simpson-Robinson, 2012). African American women 18–25 years of age are at higher risk for experiencing sex-related negative consequences (e.g., contracting sexually transmitted diseases including human immunodeficiency virus, having an unplanned pregnancy) than their White, non-Hispanic peers (Centers for Disease Control and Prevention [CDC], 2014a, 2014b). Alcohol use among traditional-age college students (i.e., 18–25 years) is also concerning due to the increased likelihood that the combination of alcohol use and sex may exacerbate the afore-mentioned sex-related negative consequences (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2013). Individual beliefs about the effects of alcohol on sexual behavior, or alcohol-related sex expectancies, predict alcohol use and alcohol-related risky sexual behavior among young adult women (Benson, Gohm, & Gross, 2007; Gilmore et al.,

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2013). Although an established relationship exists between alcohol use and risky sexual behavior among college women, the nature of this relationship is not fully understood given the underrepresentation of African American college women in empirical research samples.

Previous research has established that college women engage in risky sexual behavior (Caldeira et al., 2009; Messman-Moore, Ward, & DeNardi, 2013; Moorer, Madson, Mohn, & Nicholson, 2014). However, the underrepresentation of African American college women in previous empirical studies presents possible issues associated with generalizability, thus limiting prevention and intervention. Comparison and within-group studies shows that African American college women are a unique and at-risk group for sex-related negative consequences that result from risky sexual behavior. African American college women are less likely to use any method of birth control during their sexual experiences and are more likely to have contracted at least one STD or have an unplanned pregnancy during an academic year than White, non- Hispanic college women (Buhi, Marhefka, & Hoban, 2010). Similar results have been found when examining within-group differences. For example, Lewis, Melton, Succop, and Rosenthal (2000) found that sexually active African American college women report contracting at least one STD, having an unplanned pregnancy, and viewing no condom use as normal sexual behavior. Results such as these highlight the need to further explore within-group differences that may exist when examining predictors of risky sexual behavior such as alcohol use among African American college women.

Alcohol use is increasing among college women, specifically rates of harmful alcohol use. When examining typical weekly drinking among college students, college women are more likely to drink more than the recommended weekly limit for safe drinking (i.e., more than seven drinks in a week) compared to college men (i.e., more than 14 drinks in a week; Hoeppner, Paskausky, Jackson, & Barnett, 2013). This is concerning due to the established link between alcohol use and increased risky sexual behavior among college women (Messman-Moore et al., 2013; Zawacki, 2011). More specifically, harmful alcohol use (including heavy episodic drinking) is positively associated with risky sexual behavior among college women (Ingersoll, Ceperich, Nettleman, & Johnson, 2008).

Comparison studies have established between-group differences in alcohol use among African Americans and White, non-Hispanics, but in doing so, many within-group nuances have often been missed. In previous comparison studies, African American college women reported consuming the least amount of alcohol (Randolph, Torres, Gore-Felton, Lloyd, & McGarvey, 2009; Siebert, Wilke, Delva, Smith, & Howell, 2003). However, Madson, Villarosa, Moore, and Zeigler-Hill (2015) found unique relationships among drinking patterns, motives for drinking, and use of protective behavioral strategies that were not reflected in heterogeneous samples but found when examining within-group differences among African American college students. The studies support the importance of looking at within-group differences with homogeneous samples when attempting to explore risky sex and drinking patterns that may be unique to African American college women.

Alcohol-related sex expectancies are beliefs that alcohol will enhance one’s sexual experiences (Benson et al., 2007). They can be classified into three main categories: (a) enhancement expectancies, which are beliefs that alcohol will make one’s sexual experience

more pleasurable; (b) sexual risk-taking expectancies, which are beliefs that alcohol will increase the likelihood of engaging in risky sexual behaviors; and (c) disinhibition expectancies, which are ideas that alcohol will reduce one's awareness in sexual responding (Dermen & Cooper, 1994).

Although most investigations of alcohol-related sex expectancies among college women consist primarily of majority White, non-Hispanic samples, Messman-Moore et al. (2013) found that increased levels of harmful alcohol use, risky sexual behavior, and number of sexual partners were positively associated with greater endorsement of enhancement alcohol-related sex expectancies among a racially diverse sample of college women. In a recent qualitative study, enhancement sex-related alcohol expectancies emerged as a primary theme among sexually active young adult African American female at-risk drinkers (Hutton et al., 2015). The present study attempts to build upon this finding by examining whether endorsement of alcohol-related sex expectancies predicts more alcohol use and risky sexual behavior specifically among African American college women.

Two prominent theories are often used to explain the relationships among alcohol-related sex expectancies, alcohol use, and sexual behavior. The alcohol myopia theory (Steele & Joseph, 1990) proposes that alcohol's effect on cognitive processing affects the way in which an individual may resolve the conflict between positive (e.g., sexual arousal) and negative (e.g., contracting an STD) sexual cues, such that positive sexual cues become more salient and receive more attention than negative sexual cues (Lewis, Rees, Logan, Kaysen, & Kilmer, 2010). The alcohol expectancy theory (Brown, Goldman, Inn, & Anderson, 1980) proposes that one's expectation about the positive effects of alcohol on sexual behavior increases the likelihood of engaging in sexual experiences when drinking (Gilmore et al., 2013). The use of both theories provides a better understanding of the link between alcohol use and risky sexual behavior as well as alcohol-related sex expectancies' relationship with alcohol use and risky sexual behavior.

Heterogeneous and comparison studies have contributed to the understanding of between-group differences in terms of alcohol use and risky sexual behavior (Buhi et al., 2010; Chartier & Caetano, 2010; Madson & Zeigler-Hill, 2013). However, identifying within-group nuances related to variables that predict risky sexual behavior, such as alcohol use and alcohol-related sex expectancies, among African American college women may provide insight into racial disparities in sex-related negative consequences among college women. Thus, the goal of the present study was to examine the link between alcohol-related sex expectancies, typical weekly drinking, harmful alcohol use, and risky sexual behaviors exclusively among a sample of African American college women. It was hypothesized that alcohol-related sex expectancies would predict risky sexual behavior, typical weekly drinking, and harmful alcohol use. It was also hypothesized that typical weekly drinking and harmful alcohol use would predict risky sexual behavior among the sample.

Methods

Participants and procedures

Participants included 222 traditional age (18–25 years) African American college women at a predominantly White institution (PWI) in the southern region of the United States who were enrolled in psychology courses and recruited through class credit opportunities. Inclusion criteria for the study required that participants report consuming alcohol in the last month and engaging in sexual behavior in the last 6 months prior to completing the study. Because of these criteria, nondrinkers were not included in the study. After completing an informed consent approved by the University Institutional Research Board, participants completed measures that assessed alcohol-related sex expectancies, alcohol use, and risky sexual behavior. All measures were accessed through a secure online website and were presented in random order.

Measures

Sex-specific alcohol expectancy scale.—Alcohol-related sex expectancies were measured using the Sex-Specific Alcohol Expectancy Scale (SSAES; Dermen & Cooper, 1994). The SSAES is a 13-item measure that assesses participants' expectancies about alcohol's influence on sexual behaviors. The SSAES includes three subscales: sexual enhancement (e.g., "I enjoy sex more than usual."), sexual risk taking (e.g., "I am less likely [to ask a partner] to use a condom."), and disinhibition (e.g., "I am more likely to do sexual things that I wouldn't do when sober."). Participants responded according to level of agreement (i.e., 1 = *strongly disagree*; 6 = *strongly agree*). Subscale scores were summed and ranged from 5 to 30 for enhancement and 4 to 24 for sexual risk taking and disinhibition with higher scores indicating greater endorsement. After examining the significantly high correlation between the sexual risk- taking and disinhibition subscales of the SSAES (r = .78), a confirmatory analysis (CFA) was conducted for the SSAES using AMOS version 20. The model resulted in a nonpositive definite matrix, which is an inadmissible solution due to either a negative variance or correlation greater than 1. The output revealed that the sexual risk-taking and disinhibition variables had a correlation greater than 1. Therefore, the sexual risk-taking and disinhibition subscales were combined for statistical analyses to reduce multicollinearity. Internal consistency was α = .90 for enhancement and α = .88 for the combined sexual risk-taking and disinhibition variable.

Daily drinking questionnaire.—Typical weekly drinking was measured using the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985), a survey that assesses the amount of alcohol a participant typically consumes during a week. Participants responded with an estimated number of drinks consumed on a typical day during the week over the course of the previous month. The total number of drinks consumed was summed and used in statistical analyses. For descriptive purposes, participants were categorized as light weekly drinkers (three drinks or fewer per week), moderate weekly drinkers (4–11 drinks per week), and heavy weekly drinkers (more than 12 drinks per week) according to criteria outlined by Collins et al. (1985).

Alcohol use disorder identification test—consumption.—Harmful alcohol use was assessed using the alcohol consumption subscale of the Alcohol Use Disorder and Identification Test (AUDIT-C; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993), which consists of the first three items of the full-scale AUDIT. Similar to the DDQ, the AUDIT-C assesses the typical number of drinks consumed on a drinking day but also assesses how often a participant drinks ("How often do you have a drink containing alcohol?") and assesses heavy episodic drinking ("How often do you drink six or more drinks on one occasion?"). Thus, the AUDIT-C differs from the DDQ by assessing harmful drinking versus typical weekly drinking. Scores can range from 0 to 12 with higher scores indicating more harmful drinking patterns. Internal consistency for this sample was $\alpha = .66$.

Sexual risk survey.—Risky sexual behavior was measured using the Sexual Risk Survey (SRS; Turchik & Garske, 2009). The SRS includes 23 items that measure the frequency of sexual behaviors over the past 6 months. Participants responded with an estimated number to items such as "How many times have you given or received oral sex on a man without a condom?" Participants were asked to respond with a "0" for questions that did not apply to them or that referred to acts they had never engaged in. Responses were standardized by recoding and then summed for a total score ranging from 0 to 92 with higher scores indicating more risky sexual behavior (Turchik & Garske, 2009). Internal consistency for this sample was $\alpha = .74$.

Results

Prior to conducting analyses, data were screened for outliers and missing values. Participants with a score of "0" on the DDQ or the SRS were excluded from analyses. Means, standard deviations, and intercorrelations for all variables of interest are presented in Table 1. The mean age for the sample was 19.9 years ($SD = 1.62$), and most participants were classified as freshman (32.4%) in a committed relationship (43.7%). The majority of the sample identified as heterosexual women (93.6%), and the remainder of the participants identified as bisexual females. Participants reported drinking on average 8.65 ($SD = 8.74$) standard drinks per week. According to NIAAA safe drinking standards, participants in this sample were on average drinking more than the weekly recommended limit of safe drinking for college women (i.e., seven drinks per week; Hoeppner et al., 2013). In addition, most participants were classified as moderate drinkers (48.6%) while the remainder of participants were classified as heavy (23%) or infrequent (28.4) drinkers (Collins et al., 1985).

Alcohol-related sex expectancies predicting typical weekly drinking and harmful alcohol use

Multiple regression analyses indicated that alcohol-related sex expectancies significantly explained approximately 6.3% of the variance in harmful alcohol use and 7.5% of the variance in typical weekly drinking among the sample. Specifically, the combined sexual risk-taking and disinhibition alcohol-related sex expectancies variable significantly predicted harmful alcohol use ($p = .031$) and typical weekly drinking ($p = .005$), such that individuals who endorsed more sexual risk taking and disinhibition alcohol-related sex expectancies were more likely to engage in harmful alcohol use and consume alcohol on a weekly basis.

Enhancement alcohol-related sex expectancies did not predict harmful alcohol use or typical weekly drinking among the sample. Results of these analyses are presented in Table 2.

Alcohol-related sex expectancies, typical weekly drinking, and harmful alcohol use predicting risky sexual behavior

As seen in Table 3, multiple regression analyses indicated that alcohol-related sex expectancies significantly explained approximately 7.3% of the variance in risky sexual behavior. Specifically, enhancement alcohol-related sex expectancies significantly predicted risky sexual behavior ($p = .001$), such that individuals who endorsed more enhancement alcohol-related sex expectancies were more likely to engage in risky sexual behavior. However, the combination of sexual risk taking and disinhibition alcohol-related sex expectancies variable did not predict risky sexual behavior among the sample. In addition, alcohol use significantly explained approximately 7.8% of the variance in risky sexual behavior. Specifically, participants who reported more harmful alcohol use also reported engaging in more risky sexual behavior ($p = .044$). Although typical weekly drinking was not a significant predictor of risky sexual behavior among the sample, it is of note that the p value for typical weekly drinking ($p = .060$) was approaching statistical significance.

Discussion

The purpose of this study was to expand the understanding of the link between alcohol-related sex expectancies, typical weekly drinking, harmful alcohol use, and risky sexual behavior among African American college women. Only the combination of sexual risk taking and disinhibition alcohol- related sex expectancies predicted both harmful alcohol use and typical weekly drinking in this sample. This is consistent with previous findings among young adult women that increased levels of estimated alcohol use in social situations is positively linked with the belief that alcohol will disinhibit sexual behavior and increase the likelihood of engaging in sexual risk taking (Pumphrey-Gordon & Gross, 2007). Pumphrey-Gordon and Gross (2007) examined typical weekly drinking to measure alcohol use; however, our finding adds to the literature in that it provides evidence of a predictive relationship between sexual risk taking and disinhibition alcohol-related sex expectancies with typical weekly drinking as well as harmful alcohol use among African American college women. Considering the strong correlation between sexual risk taking and disinhibition expectancies found in a sample of African American college women, future studies should examine the utility of the factor structure of the SSAE when investigating alcohol-related sex expectancies among different racial groups and perhaps conduct invariance testing among different groups.

In contrast to the relationship alcohol-related sex expectancies had with alcohol use, only enhancement alcohol-related sex expectancies were predictive of more risky sexual behavior among the sample, which supports previous findings linking enhancement alcohol-related sex expectancies and risky sexual behavior among college women (Gilmore et al., 2013) as well as African American young adult women (Hutton et al., 2015). Using both the alcohol myopia and alcohol expectancy theories as conceptual frameworks, it may be that African American college women who hold stronger enhancement expectancies are cueing into more

positive sexually enhancing situations in the context of drinking, thus increasing the likelihood of engaging in risky sexual behavior in order to attain the desired effects of alcohol on sexual experiences (Brown, Goldman, Inn, & Anderson, 1980; Steele & Joseph, 1990).

Consistent with previous findings among racially diverse samples of college women (Ingersoll et al., 2008), harmful alcohol use rather than typical weekly drinking was predictive of more risky sexual behavior for African American college women in this sample. This finding is also consistent with research that suggests that African American college students engage less in typical weekly drinking (Poulson, Bradshaw, Huff, Peebles, & Hilton, 2008). However, when they do consume alcohol, they are likely drinking to the point of intoxication (Poulson et al., 2008). Moreover, African American college students report experiencing more alcohol-related negative consequences when engaging in more harmful alcohol use, such as heavy episodic drinking, than when engaging in typical weekly drinking (Madson et al., 2015). Collectively, these previous findings and findings from the current study suggest that harmful alcohol use may be more indicative of drinking patterns that increase the likelihood of risky sexual behavior among African American college women.

The current findings have implications for future research. A majority of the participants in the current sample reported being in a committed relationship, and African American college women are more likely than African American college men to report engaging in unprotected sex due to the belief that they are in love (Poulson et al., 2008). Thus, future research should examine the influence of perceived relationship status on the association between alcohol use and risky sexual behavior among African American college women. African American college women in heterogeneous samples have been found to consume less alcohol than their White, non-Hispanic peers; however, descriptive data from this homogeneous sample provide evidence that African American college women are drinking at levels that may place them at increased risk for experiencing alcohol-related consequences. According to the DDQ guidelines for classification of drinkers (Collins et al., 1985), most participants were moderate weekly drinkers (i.e., 4 to 11 drinks over the course of a week) and almost a quarter of the participants were heavy drinkers (i.e., 11 drinks or more over the course of a week). Further, participants reported drinking on average 8.67 standard drinks per week, which exceeds the NIAAA safe drinking standards for weekly drinking among college women (Hoeppner et al., 2013). Taken together, there is evidence to suggest that African American college women are engaging in harmful alcohol use even though they may consume less alcohol in comparison to their White, non-Hispanic peers. Thus, future research should continue to examine alcohol use and harmful drinking patterns specifically among African American college women. Future research should also focus on risk factors that may contribute to increased alcohol use and risky sexual behavior among African American college women, such as psychological distress and sexual and racial discrimination.

Although our findings add to the literature, the results should be interpreted within the study's limitations. The sample was collected from a single, midsized PWI in the southeastern region of the United States. Thus, there may be unique factors unaccounted for

that possibly influenced the results (e.g., regional differences in alcohol use, influence of religiosity/ spiritualty; Burke, Van Olphen, Eliason, Howell, & Gonzalez, 2014). The college environment may also serve as a protective factor and reduce the likelihood of increased alcohol use among some African American college students (Paschall, Bersamin, & Flewelling, 2005). Furthermore, differences in the college environments at PWIs and historically Black colleges and universities (HBCU) may contribute to differences in alcohol use and risky sexual behavior among African American college students. For example, students who attend HBCUs consume less alcohol, perceive themselves at higher risk for HIV, and engage in more condom use than students at PWIs (Younge, Corneille, Lyde, & Cannady, 2013). Taken together, findings from the current study may not be generalizable to all African American women of traditional college age or to African American women who attend HBCUs. Underreporting may have occurred because of reliance on self-report measures and the examination of stigmatizing behaviors, such as alcohol use and risky sexual behavior. Last, the cross-sectional design of the current study prevents drawing causal conclusions about the results.

Finally, the current study contributes to literature on African American college women. Although this study was exploratory in nature, the findings provide evidence that supports the need for more research on alcohol use and risky sexual behavior specifically among African American college women. Furthermore, the current study highlights potential clinical implications for addressing alcohol-related sex expectancies and alcohol use as it relates to risky sexual behavior among African American college women and conveys the significance of examining within-group differences to establish culturally congruent intervention and prevention methods aimed at reducing sex-related negative consequences among African American college women.

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Table 1.

Intercorrelations and descriptive statistics.

	M	*SD*	1	2	3	4	5
1. AUDIT-C	2.90	1.77	-	-	-	-	-
2. DDQ	8.65	8.75	0.59**	-	-	-	-
3. SSAE-E	15.60	7.53	0.21**	0.20**	-	-	-
4. SSAE-SR & D	16.59	9.16	0.22**	0.25**	0.46**	-	-
5. SRS	52.89	63.35	0.25**	0.25**	0.26**	0.17*	-

Note. *SD* = standard deviation; AUDIT-C = Alcohol Use Disorder Identification Test—Consumption; DDQ = Daily Drinking Questionnaire; SSAE-E = Sex-Specific Alcohol Expectancy—Enhancement; SSAE-SR & D = Sex- Specific Alcohol Expectancy—Sexual Risk & Disinhibition; SRS = Sexual Risk Survey.

* Correlation is significant at the $p < .05$ level

** correlation is significant at the $p < .01$ level.

Table 2.

Regressions of alcohol use on enhancement, sexual risk taking, and disinhibition sex-related alcohol expectancies.

	AUDIT - C		DDQ	
	β	***t***	***β***	***t***
SSAE - E	.14	1.83	.12	1.46
SSAE - SR & D	.16**	2.17	.21**	2.85

*Note.*AUDIT-C = Alcohol Use Disorder Identification Test—Consumption; DDQ = Daily Drinking Questionnaire; SSAE-E = Sex-Specific Alcohol Expectancy—Enhancement; SSAE-SR & D = Sex-Specific Alcohol Expectancy —Sexual Risk & Disinhibition; SRS = Sexual Risk Survey.

*Correlation is significant at the $p < .05$ level

**Correlation is significant at the $p < .01$ level.

Table 3.

Regressions of risky sexual behaviors on enhancement expectancies, combined sexual risk taking and disinhibition sex-related alcohol expectancies, and alcohol use.

	SRS	
	β	***t***
Model 1		
SSAE - E	.24**	3.23
SSAE - SR & D	.06	0.81
Model 2		
AUDIT-C	.16*	2.03
DDQ	.15	1.88

*Note.*AUDIT-C = Alcohol Use Disorder Identification Test—Consumption; DDQ = Daily Drinking Questionnaire; SSAE-E = Sex-Specific Alcohol Expectancy—Enhancement; SSAE-SR & D = Sex-Specific Alcohol Expectancy —Sexual Risk & Disinhibition; SRS = Sexual Risk Survey.

*Correlation is significant at the $p < .05$ level

**correlation is significant at the $p < .01$ level.