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An examination of associations between social norms and risky alcohol use among African American men who have sex with men

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Abstract

Background—Research has indicated associations between risky alcohol consumption and sexual risk behavior, which may in turn present risk of HIV acquisition or transmission. Little is known about social determinants of problematic alcohol use among African American MSM (AA MSM), a risk group disproportionately affected by HIV. The present study sought to explore associations between risky alcohol use and perceived peer norms of alcohol use among a sample of urban African American men who have sex with men (AA MSM).

Methods—A cross-sectional survey was administered to 142 AA MSM in Baltimore, Maryland, recruited using active and passive methods. Risky and hazardous alcohol use was assessed using the Alcohol Use Disorders Identification Test (AUDIT) and participants self-reported descriptive and injunctive peer norms regarding frequency and quantity of alcohol consumption.

Results—Nearly half reported hazardous or high risk consumption of alcohol. Perceived peer alcohol norms, both descriptive and injunctive, were associated with alcohol use, including hazardous use.

Conclusions—The findings highlight the role of social factors on problematic alcohol use among AA MSM. Results indicate that AA MSM's use of alcohol is associated with their perceptions of peer alcohol use. Potential interventions could include norms-based campaigns that

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Contributors:

- a. Karin Tobin conceptualized the study, led the analysis and development of the manuscript.
- b. Melissa Davey-Rothwell assisted with the development of the manuscript and offered expertise on alcohol norms literature.
- c. Cui Yang assisted with the development of the manuscript and offered expertise on data analysis
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- e. Carl Latkin assisted with the development of the manuscript and offered expertise on social networks and prevention approaches

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seek to reduce risky alcohol consumption among AA MSM as well as programs to screen and identify individuals with problematic alcohol use.

Keywords

African American men who have sex with men; social norms; alcohol use; AUDIT

1. INTRODUCTION

Studies have shown high rates of alcohol use and abuse among men who have sex with men (MSM; Stall et al., 2001; Woolf and Maisto, 2009; Reisner et al., 2010; Pollock et al., 2012). Factors associated with problematic alcohol use among MSM include depression (Reisner et al., 2010), lower socio-economic status, history of incarceration, frequenting gay bars (Wong et al., 2008), HIV positive status (Deiss et al., 2013) and non-gay sexual identity (Agronick et al., 2004).

Alcohol use is also associated with increased HIV risk among MSM (Woolf and Maisto, 2009; Reisner et al., 2010), specifically, engaging in transactional sex (Deiss et al., 2013), increased number of recent and lifetime sexual partners, unprotected anal intercourse (UAI) and sex under the influence of alcohol (Purcell et al., 2001; Colfax et al., 2004; Parsons et al., 2005). Additionally, HIV seropositive MSM who frequently engage in sex under the influence of alcohol are more likely to report an increased UAI with casual partners (Purcell et al., 2001). Understanding factors associated with problematic alcohol use among MSM is necessary to expand development of appropriate interventions targeting alcohol-related risk. Alcohol use is typically a social behavior, yet little is known about social determinants of problematic alcohol use among African American MSM (AA MSM), a risk group disproportionately affected by HIV.

Social norms are a component of the social context of alcohol use and are strong predictors of behavior (Neighbors et al., 2007; Rimal, 2008; Rosenquist et al., 2010; Teunissen et al., 2012). Perceptions of others' behavior (termed descriptive norms) and perceptions of others' disapproval for a certain behavior (termed injunctive norms) have been associated with heavy episodic consumption drinking and alcohol-related problems (Larimer et al., 2004). Studies of alcohol-related social norms, predominately conducted with heterosexual college-aged populations, have shown that greater alcohol use is associated with perceptions that peers are excessively consuming alcohol (Perkins et al., 2005; Perkins, 2007; Bertholet et al., 2011). One study among college aged students found that the association between descriptive social norms on individual drinking behavior was stronger for men than it was for women (O'Grady et al., 2011). In another study, among a sample of predominately white young men who have sex with men, the increased number of friends who drank heavily was associated with individual alcohol use (Paschall et al., 2005). Furthermore, a study of multi-ethnic sample of young MSM, found that heavy episodic drinking was associated with a greater number of peers who engaged in drug, alcohol or sex risk behavior (Wong et al., 2008).

Along these lines, social norms approaches have been utilized to address hazardous drinking among college populations (Borsari and Carey, 2003; DeJong et al., 2006, 2009). Some of

these interventions show promise (DeJong et al., 2006), though not all have been found to be effective (Dejong et al., 2009). If norms are associated with alcohol consumption patterns among African American MSM, then norms-based interventions could be designed to address problem drinking and subsequent risky sexual behaviors.

The purpose of this study was to examine associations between descriptive and injunctive norms of alcohol use and alcohol risk level among an urban sample of African American men who have sex with men.

2. METHODS

Data for this study came from a cross-sectional survey of AA MSM conducted from March, 2012 to July, 2012 in Baltimore, Maryland. Participants were recruited using a variety of methods, including street-based outreach by trained field recruiters, word of mouth referrals, collaborations with community-based agencies that provide services to AA MSM, and internet-based postings on Craigslist.org. Inclusion criteria were self-reported age 18 years old or older, African American race/ethnicity, and sex with a male in the prior 90 days. Interested participants were screened via phone or in person by a trained research assistant. Of n=196 who were screened, 22% were ineligible. No participants who contacted the research study refused or declined screening. Eligible participants provided written informed consent and completed a baseline survey administered in a private office by a trained research assistant. Participants were remunerated \$50 for completing the survey. All study procedures were approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

2.1. Measures

2.1.1. Outcome—Alcohol Use Risk The Alcohol Use Disorders Identification Test (AUDIT) was used to assess alcohol use, hazardous drinking, and risk for alcohol dependence (Saunders et al., 1993; Babor et al., 2001). The AUDIT has been validated in numerous populations and measures frequency of drinking, drinking behavior, dependence, and problems and consequences related to drinking. AUDIT scores range from 0-40, with a higher score indicating more hazardous or risky drinking. For each participant, a total score was calculated and categorized for level of Alcohol Use Risk (AUR) measured as 0=no use of alcohol, 1= AUDIT score 0-7 (low-risk drinking), 2= AUDIT score 8-15 (hazardous drinking), and 4= AUDIT score 16 or higher (high-risk drinking, and likely dependent on alcohol).

2.1.2. Descriptive alcohol use norms—were assessed by asking “How many of your friends drink three or more times a week” (i.e., frequency) and “How many of your friends have five or more drinks in one sitting?” (i.e., quantity) The response choices for both items were: none, a few, half, or most/all.

2.1.3. Injunctive alcohol use norms—were assessed by asking “How many of your friends would disapprove if you were to drink three or more times a week” (i.e., frequency) and “How many of your friends would disapprove if you had five or more drinks in one

sitting?” (i.e., quantity) The response choices for both items were: none, a few, half, or most/all.

2.1.4. Socio-demographic variables—Participants self-reported age, highest level of educational attainment, current employment status (full-time, part-time, not working, and not working due to disability), whether they had health insurance (yes/no), had been homeless at any time during the past 6 months, and their HIV status (positive, negative, unsure). Sexual identity was assessed with the question, “Which best describes your sexual identity (homosexual/gay, bisexual, heterosexual/straight, other)?”

2.1.5. Analyses—were conducted to examine bivariate associations between socio-demographic variables and perceived alcohol norms and Alcohol Use Risk categories using chi-square and Fishers chi-square statistics for categorical variables and ANOVA for continuous variables. To assess independent associations between perceived alcohol norms and Alcohol Use Risk, logistic regression was conducted, controlling for age, HIV status and sexual identity. For modeling using logistic regression, a dichotomous variable was created to indicate 0=“no or low alcohol risk” versus 1=“hazardous or high alcohol risk.”

3. RESULTS

The final sample included n=142 AA MSM whose median age was 43 (SD=10.9; IQR=31-49). The majority of participants (57%) reported no use or low risk use of alcohol; distribution of Alcohol Use Risk (AUR) was 20% reporting no use of alcohol, 37% in the low risk category, 22% in the hazardous category and 21% in the high risk/likely dependent category (Table 1). Results from the bivariate analysis indicate that a greater proportion of men who did not drink alcohol were older ($p<0.01$), not working due to disability ($p=0.02$), and of “not sure/questioning” sexual identity ($p=0.03$) compared to the other AUR groups. AUR did not vary based on self-reported HIV status or homelessness.

Both descriptive alcohol norms items were statistically associated with AUR (Table 2). As perceptions of friends drinking frequently and in greater quantities increased, AUR category increased (e.g. risk hazardous drinking and/or dependence). The injunctive norm item on frequency of alcohol use was also statistically associated with AUR, such that as AUR increased, the proportion of friends who would disapprove decreased. There was a trend of association between injunctive norms on quantity of alcohol consumed such that as AUR score increased, perceptions that peers would disapprove of 5 or more drinks in a sitting decreased, but this did not achieve statistical significance in bivariate analysis.

Results from multivariable logistic regression analysis of associations between alcohol norms and alcohol use risk (low versus high) indicated that high risk drinking was associated with perceptions that peers were drinking frequently and in high quantities after adjusting for HIV status, age and sexual identity. Furthermore, high risk drinking was associated with lower odds that half or more of peers would disapprove of frequent or high quantity alcohol use.

4. DISCUSSION

Consistent with extant alcohol norms literature (Perkins et al., 2005; Perkins, 2007; Real and Rimal, 2007), AA MSMs' perceptions of peer alcohol use was associated with greater use and hazardous use. Findings from this study suggest the potential value of public health interventions that aim to alter and correct perceptions about problematic alcohol use as an approach to decrease alcohol use behaviors among AA MSM. One such approach could include a media campaign featuring messages on the prevalence of moderate drinking among African American males, as observed in the present study where 57% scored in the no to low risk category.

A critical element to improve effectiveness of norms based interventions is selection of the referent group. Findings from a study of college students (Lewis et al., 2010) suggest that effectiveness of interventions focused on descriptive and injunctive norms can be tailored based on the extent of drinking behavior and identification with a similar peer. Peer approval of risky behavior was protective to light drinkers who did not identify with this peer. Little research has been conducted with AA MSM to determine the referent group that is most influential on drinking behavior. It is unclear whether norms-based interventions tailored for AA MSM should include referent groups based on sexual identity, level of MSM disclosure or HIV status. Assessments of the social network can illuminate relevant referent groups (Davey-Rothwell et al., 2010). Future research with AA MSM should aim to describe salient, referent individuals and utilize this information in norms-based interventions.

In this sample of urban AA MSM, we report that nearly half (43%) scored in the risky alcohol use categories. Our findings are comparable to other studies on alcohol use among MSM in Los Angeles and Massachusetts (Reisner et al., 2010) and underscore the need for accessible alcohol use treatment tailored for AA MSM (Reisner et al., 2010). For example, screening, brief interventions, and referral to treatment (SBIRT) is one approach can be implemented in diverse settings, including healthcare sites (e.g., community-based health clinics) and community events (e.g., Gay Pride; Moyer et al., 2002; Babor et al., 2010). SBIRT programs have empirical support for reducing alcohol consumption or alcohol-related problems (Moyer et al., 2002; Kaner et al., 2007).

Problematic alcohol use and heavy episodic consumption (defined as 5 or more drinks in one sitting) has been identified as a key determinant of HIV risk and other health problems among MSM. There is preliminary evidence that on-premise brief interventions, delivered shortly before venue entry (e.g., bars), can reduce consumption among MSM who planned to drink heavily (Croff et al., 2012). As AA MSM bare a disproportionate burden of HIV infection, this also suggests the importance of integrating alcohol screening and intervention with HIV prevention and treatment efforts. Developing interventions to address both sexual- and alcohol-risk behaviors in an integrated manner may be potent, and presents an avenue for future intervention research.

The results of this study must be interpreted within context of its limitations. First, alcohol use was assessed using self-report, and thus alcohol use may have been under-reported due to social desirability bias. The cross-sectional study design limits our ability to determine the

causal direction between perceived norms and alcohol use. Furthermore, the norms measures assess norms among friends which may not be one's relevant referent group. It is also plausible that referent groups vary by context, such that peers in alcohol consumption environments differ from peers in other contexts. Finally, as the median age of the sample was 43 years old, findings from this study may not be generalizable to younger African American men who have sex with men or MSM who are not African American.

Despite these limitations, this study highlights the role of social factors on problematic alcohol use, specifically the role of both descriptive and injunctive norms. Altering perceived social norms among AA MSM may cultivate an environment within which behavior change is supported and sustained (Latkin and Knowlton, 2005).

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REFERENCES

- Agronick G, O'Donnell L, Stueve A, Doval AS, Duran R, Vargo S. Sexual behaviors and risks among bisexually- and gay-identified young Latino men. *AIDS Behav.* 2004; 8:185–197. [PubMed: 15187480]
- Babor, TF.; Caetano, R.; Casswell, S.; Edwards, G.; Giesbrecht, N.; Graham, K.; Grube, JW.; Hill, L.; Holder, H.; Homel, R.; Livingston, M.; Osterberg, E.; Rehm, J.; Room, R.; Rossow, I. *Alcohol: No Ordinary Commodity: Research and Public Policy.* Oxford University Press; New York: 2010.
- Babor, TF.; Higgins-Biddle, JC.; Saunders, JB.; Monteiro, MG. *The Alcohol use Disorders Identification Test: Guidelines for use in Primary Care.* World Health Organization; Geneva: 2001.
- Bertholet N, Gaume J, Faouzi M, Daepfen J- Gmel G. Perception of the amount of drinking by others in a sample of 20-year-old men: the more I think you drink, the more I drink. *Alcohol Alcohol.* 2011; 46:83–87. [PubMed: 21148145]
- Borsari B, Carey KB. Descriptive and injunctive norms in college drinking: a meta-analytic integration. *J. Stud. Alcohol.* 2003; 64:331–341. [PubMed: 12817821]
- Colfax G, Vittinghoff E, Husnik MJ, McKirnan D, Buchbinder S, Koblin B, Celum C, Chesney M, Huang Y, Mayer K, Bozeman S, Judson FN, Bryant KJ, Coates TJ, EXPLORE Study Team. Substance use and sexual risk: a participant- and episode-level analysis among a cohort of men who have sex with men. *Am. J. Epidemiol.* 2004; 159:1002–1012. [PubMed: 15128613]
- Croff JM, Clapp JD, Chambers CD, Woodruff SI, Strathdee SA. Brief field-based intervention to reduce alcohol-related problems among men who have sex with men. *J. Stud. Alcohol Drugs.* 2012; 73:285–289. [PubMed: 22333336]
- Davey-Rothwell MA, Latkin CA, Tobin KE. Longitudinal analysis of the relationship between perceived norms and sharing injection paraphernalia. *AIDS Behav.* 2010; 14:878–884. [PubMed: 19148743]
- Deiss RG, Clark JL, Konda KA, Leon SR, Klausner JD, Caceres CF, Coates TJ. Problem drinking is associated with increased prevalence of sexual risk behaviors among men who have sex with men (MSM) in Lima, Peru. *Drug Alcohol Depend.* 2013; 132:134–9. [PubMed: 23434130]
- DeJong W, Schneider SK, Towvim LG, Murphy MJ, Doerr EE, Simonsen NR, Mason KE, Scribner RA. A multisite randomized trial of social norms marketing campaigns to reduce college student drinking. *J. Stud. Alcohol.* 2006; 67:868–879. [PubMed: 17061004]

- Dejong W, Schneider SK, Towvim LG, Murphy MJ, Doerr EE, Simonsen NR, Mason KE, Scribner RA. A multisite randomized trial of social norms marketing campaigns to reduce college student drinking: a replication failure. *Subst. Abuse*. 2009; 30:127–140.
- Kaner EF, Beyer F, Dickinson HO, Pienaar E, Campbell F, Schlesinger C, Heather N, Saunders J, Burnand B. Effectiveness of brief alcohol interventions in primary care populations. *Cochrane Database Syst. Rev.* 2007; 2:CD004148. [PubMed: 17443541]
- Larimer ME, Turner AP, Mallett KA, Geisner IM. Predicting drinking behavior and alcohol-related problems among fraternity and sorority members: examining the role of descriptive and injunctive norms. *Psychol. Addict. Behav.* 2004; 18:203–212. [PubMed: 15482075]
- Latkin CA, Knowlton AR. Micro-social structural approaches to HIV prevention: a social ecological perspective. *AIDS Care*. 2005; 17(Suppl. 1):S102–13. [PubMed: 16096122]
- Lewis MA, Neighbors C, Geisner IM, Lee CM, Kilmer JR, Atkins DC. Examining the associations among severity of injunctive drinking norms, alcohol consumption, and alcohol-related negative consequences: the moderating roles of alcohol consumption and identity. *Psychol. Addict. Behav.* 2010; 24:177–189. [PubMed: 20565144]
- Moyer A, Finney JW, Swearingen CE, Vergun P. Brief interventions for alcohol problems: a meta-analytic review of controlled investigations in treatment-seeking and non-treatment-seeking populations. *Addiction*. 2002; 97:279–292. [PubMed: 11964101]
- Neighbors C, Lee CM, Lewis MA, Fossos N, Larimer ME. Are social norms the best predictor of outcomes among heavy-drinking college students? *J. Stud. Alcohol Drugs*. 2007; 68:556–565. [PubMed: 17568961]
- O'Grady MA, Cullum J, Tennen H, Armeli S. Daily relationship between event-specific drinking norms and alcohol use: a four-year longitudinal study. *J. Stud. Alcohol Drugs*. 2011; 72:633–641. [PubMed: 21683045]
- Parsons JT, Kutnick AH, Halkitis PN, Punzalan JC, Carbonari JP. Sexual risk behaviors and substance use among alcohol abusing HIV-positive men who have sex with men. *J. Psychoactive Drugs*. 2005; 37:27–36. [PubMed: 15916249]
- Paschall MJ, Bersamin M, Flewelling RL. Racial/ethnic differences in the association between college attendance and heavy alcohol use: a national study. *J. Stud. Alcohol*. 2005; 66:266–274. [PubMed: 15957678]
- Perkins HW. Misperceptions of peer drinking norms in Canada: another look at the “reign of error” and its consequences among college students. *Addict. Behav.* 2007; 32:2645–2656. [PubMed: 17719724]
- Perkins HW, Haines MP, Rice R. Misperceiving the college drinking norm and related problems: a nationwide study of exposure to prevention information, perceived norms and student alcohol misuse. *J. Stud. Alcohol*. 2005; 66:470–478. [PubMed: 16240554]
- Pollock JA, Halkitis PN, Moeller RW, Solomon TM, Barton SC, Blachman-Forshay J, Siconolfi DE, Love HT. Alcohol use among young men who have sex with men. *Subst. Use Misuse*. 2012; 47:12–21. [PubMed: 22049917]
- Purcell DW, Parsons JT, Halkitis PN, Mizuno Y, Woods WJ. Substance use and sexual transmission risk behavior of HIV-positive men who have sex with men. *J. Subst. Abuse*. 2001; 13:185–200. [PubMed: 11547619]
- Real K, Rimal RN. Friends talk to friends about drinking: exploring the role of peer communication in the theory of normative social behavior. *Health Commun.* 2007; 22:169–180. [PubMed: 17668996]
- Reisner SL, Mimiaga MJ, Bland S, Skeer M, Cranston K, Isenberg D, Driscoll M, Mayer KH. Problematic alcohol use and HIV risk among Black men who have sex with men in Massachusetts. *AIDS Care*. 2010; 22:577–87. [PubMed: 20336557]
- Rimal RN. Modeling the relationship between descriptive norms and behaviors: a test and extension of the theory of normative social behavior (TNSB). *Health Commun.* 2008; 23:103–116. [PubMed: 18443998]
- Rosenquist JN, Murabito J, Fowler JH, Christakis NA. The spread of alcohol consumption behavior in a large social network. *Ann. Intern. Med.* 2010; 152:426–33, W141. [PubMed: 20368648]

- Saunders JB, Aasland OG, Babor TF, de L.F. Jr. Grant M. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption--II. *Addiction*. 1993; 88:791–804. [PubMed: 8329970]
- Stall R, Paul JP, Greenwood G, Pollack LM, Bein E, Crosby GM, Mills TC, Binson D, Coates TJ, Catania JA. Alcohol use, drug use and alcohol-related problems among men who have sex with men: the Urban Men's Health Study. *Addiction*. 2001; 96:1589–1601. [PubMed: 11784456]
- Teunissen HA, Spijkerman R, Prinstein MJ, Cohen GL, Engels RCME, Scholte RHJ. Adolescents' conformity to their peers' pro-alcohol and anti-alcohol norms: the power of popularity. *Alcohol. Clin. Exp. Res*. 2012; 36:1257–1267. [PubMed: 22509937]
- Wong CF, Kipke MD, Weiss G. Risk factors for alcohol use, frequent use, and binge drinking among young men who have sex with men. *Addict. Behav*. 2008; 33:1012–1020. [PubMed: 18495364]
- Wolf SE, Maisto SA. Alcohol use and risk of HIV infection among men who have sex with men. *AIDS Behav*. 2009; 13:757–782. [PubMed: 18236149]

Table 1

Associations between perceived alcohol norms and AUDIT risk level among African American men who have sex with men (n=142).

	AUDIT score					p-value
	Total sample N=142	No alcohol use in prior 90 days N=29 (20%)	<=7 (Low risk) N=52 (37%)	8-15 (Risky/Hazardous) N=31 (22%)	>=16 (High risk) N=30 (21%)	
Median age (SD) (IQR)	43 (10.9) (31-49)	47.0 (8.76) (42-51)	34 (11.3) (27-47)	45 (10.7) (31-49)	43 (10.2) (35-42)	<0.01
Education						
11 years	28 (20)	6 (21)	10 (19)	6 (19)	6 (20)	0.01
12/GED	67 (47)	13 (45)	18 (35)	21 (68)	15 (50)	
some college	47 (33)	10 (34)	24 (46)	4 (13)	9 (30)	
Employment						
Full time	17 (12)	3 (10)	13 (25)	1 (3)	0 (0)	0.02
Part-time	23 (16)	3 (10)	11 (21)	5 (16)	4 (13)	
Not working	52 (37)	10 (34)	13 (25)	14 (45)	15 (50)	
Disability	50 (35)	13 (45)	15 (29)	11 (35)	11 (37)	
Health insurance						
yes	114 (80)	26 (90)	40 (77)	23 (74)	25 (83)	0.41
Sexual identity						
Gay	64 (45)	10 (34)	32 (62)	12 (39)	10 (33)	0.03
Bisexual	48 (34)	8 (28)	13 (25)	12 (39)	15 (50)	
Heterosexual	16 (11)	5 (17)	2 (4)	5 (16)	4 (13)	
other	14 (10)	6 (21)	5 (10)	2 (6)	1 (3)	
Self-reported HIV+						
Yes	59 (42)	14 (48)	23 (44)	11 (35)	11 (37)	0.70
Homeless in past 6 months						
Yes	32 (23)	6 (21)	10 (19)	5 (16)	11 (37)	0.24
How many friends drink alcohol >=3 times a week						
None	17 (12)	5 (17)	11 (21)	0 (0)	1 (3)	<0.01
A few	56 (39)	15 (52)	19 (37)	13 (42)	9 (30)	
>=50%	69 (49)	9 (31)	22 (42)	18 (58)	20 (67)	
How many friends drink >=5 drinks in one sitting						
None	39 (27)	15 (52)	19 (37)	3 (10)	2 (7)	
A few	54 (38)	7 (24)	19 (37)	15 (48)	13 (43)	

	AUDIT score					
	Total sample N=142	No alcohol use in prior 90 days N=29 (20%)	<=7 (Low risk) N=52 (37%)	8-15 (Risky/Hazardous) N=31 (22%)	>=16 (High risk) N=30 (21%)	p-value
>=50%	49 (35)	7 (24)	14 (27)	13 (42)	15 (50)	0.001
How many would disapprove if you drank alcohol >=3 times a week						
None	42 (30)	8 (28)	10 (19)	12 (39)	12 (40)	
A few	38 (27)	2 (7)	17 (33)	8 (26)	11 (37)	
>=50%	62 (44)	19 (66)	25 (48)	11 (35)	7 (23)	<0.01
How many would disapprove if you drank >=5 drinks in one sitting						
None	34 (24)	6 (21)	10 (19)	8 (26)	10 (33)	
A few	31 (22)	4 (14)	9 (17)	8 (26)	10 (33)	
>=50%	77 (54)	19 (66)	33 (63)	15 (48)	10 (33)	0.16

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Table 2

Independent associations between perceived alcohol norms and high risk versus low/no risk alcohol use among African American men who have sex with men (n=142)

Model	AOR (95% CI)*
Consumption frequency subjective norm	
"How many friends drink alcohol ≥ 3 times a week?"	
None	Ref
A few	11.4 (1.39-93.9)
$\geq 50\%$	20.1 (2.49-161.6)
Consumption quantity subjective norm	
"How many friends drink ≥ 5 drinks in one sitting?"	
None	Ref
A few	9.37 (3.03-28.9)
$\geq 50\%$	10.3 (3.34-31.8)
Consumption frequency injunctive norm	
"How many would disapprove if you drank alcohol ≥ 3 times a week?"	
None	Ref
A few	0.66 (0.26-1.64)
$\geq 50\%$	0.28 (0.12-0.66)
Consumption quantity injunctive norm	
"How many would disapprove if you drank ≥ 5 drinks in one sitting?"	
None	Ref
A few	1.19 (0.43-3.27)
$\geq 50\%$	0.41 (0.18-0.96)

* adjusting for age, HIV status, sexual identity