Published in final edited form as:

Addict Behav. 2016 October ; 61: 80–83. doi:10.1016/j.addbeh.2016.05.017.

Minority stress is longitudinally associated with alcohol-related problems among sexual minority women

Sarah M. Wilson,

VA Mid-Atlantic Region Mental Illness Research, Education and Clinical Center, Durham VA Medical Center

Amanda K. Gilmore,

Medical University of South Carolina, National Crime Victims Research and Treatment Center

Isaac C. Rhew,

Department of Psychiatry and Behavioral Sciences, University of Washington

Kimberley A. Hodge, and

Department of Psychiatry and Behavioral Sciences, University of Washington

Debra L. Kaysen

Department of Psychiatry and Behavioral Sciences, University of Washington

Abstract

Compared to sexual minority men and heterosexual women, sexual minority women report elevated alcohol use in young adulthood. Heavy alcohol use and alcohol use disorders disproportionately affect sexual minority women across the lifespan, yet there is limited research investigating reasons for such associations. The present study investigates longitudinal relationships between minority stress and both alcohol use as well as self-rated drinking consequences. Participants ($N = 1,057$) were self-identified lesbian (40.5%) and bisexual (59.5%) women between the ages of 18 to 25 recruited from across the U.S. using online advertisements. Participants completed four annual surveys. Hurdle mixed effects models were used to assess associations between minority stress and typical weekly drinking and drinking consequences one year later. Minority stress was not significantly associated with subsequent typical drinking. However, minority stress was significantly associated with having any alcohol consequences as well as the count of alcohol consequences one year later after controlling for covariates. Consistent with extant literature, this study provides evidence for a prospective relationship between minority

Correspondence concerning this article should be addressed to Sarah M. Wilson, Durham VA Medical Center, MIRECC, 508 Fulton Street, Durham, NC 27705. Contact: sarah.wilson@duke.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Statement 2: Contributors

Dr. Kaysen designed the study and wrote the protocol. Drs. Kaysen and Wilson conducted literature searches and provided summaries of previous research studies. Dr. Rhew conducted the statistical analysis. Drs. Wilson, Gilmore, Rhew, and Ms. Hodge collaboratively wrote the original submission of the manuscript and all authors contributed to and have approved the revised manuscript.

Statement 3: Conflict of Interest

All authors declare that they have no conflicts of interest.

stress experienced by sexual minority women and drinking consequences. This study also provides support for the potential impact of efforts to reduce minority stress faced by sexual minority women.

Keywords

lesbian; bisexual; alcohol use; drinking consequences; discrimination; minority stress

Alcohol use and related consequences are prevalent among emerging adult lesbian and bisexual women (sexual minority women; SMW). Compared to heterosexual women, SMW are at increased risk of hazardous drinking (Gruskin, Hart, Gordon, & Ackerson, 2001) and alcohol use disorders (Goldberg, Strutz, Herring, & Halpern, 2013; Schauer, Berg, & Bryant, 2013). There is a paucity of research focusing on health behavior in young SMW (Coulter, Kenst, & Bowen, 2014). Given high levels of alcohol use among young SMW compared to sexual minority men and heterosexual women (Dermody et al., 2014), there is a need to further evaluate contributory factors of drinking in this population.

The minority stress model posits that stressors associated with sexual minority status can lead to negative physical and mental health outcomes (Meyer, 2003). Distal and proximal social stressors may include institutional discrimination, community prejudice, interpersonal violence, internalized stigma, and anticipation of maltreatment (Meyer, 2003, 2013) and are associated with increased hazardous and disordered alcohol use (e.g., Matthews et al., 2014; McCabe, Bostwick, Hughes, West, & Boyd, 2010; McLaughlin, Hatzenbuehler, & Keyes, 2010). Most U.S. states do not protect sexual minorities from workplace discrimination or hate crimes and sexual minorities living in these states are more than twice as likely to have an alcohol use disorder (Hatzenbuehler et al., 2009). Despite these findings, there are no prospective examinations of how young SMW's experiences of minority stress relate to alcohol use and related consequences.

Current Study

We examined the prospective association between minority stress and alcohol use as well as negative drinking consequences in young adult SMW to extend previous cross-sectional research. As drinking risk is highest during young adulthood, it is of particular import to examine alcohol use during this critical developmental phase. We hypothesized minority stress would be prospectively associated with increased alcohol use and consequences.

Methods

Participants and Procedures

Participants were recruited nationally via Craigslist and Facebook online advertisements, and upon recruitment were routed to a website showing an informational statement. Those who consented received an online screening assessment ($n = 4,119$). Eligibility criteria were met by 1,877 participants and included: 1) U.S. residence, 2) valid e-mail address, 3) age 18 to 25, and 4) self-identified as lesbian or bisexual. Participants were retained in the study if they changed or omitted their reported sexual orientation or gender identity at follow-up.

Upon logging into the baseline survey, participants ($n = 1,083$) were shown a consent form. Due to inconsistencies in the data (e.g., inconsistent birth dates), a final sample of 1,057 (mean age = 20.9; $SD = 2.1$) were enrolled and retained in the study. Of this sample, 40.5% self-identified as lesbian and 59.5% as bisexual; 76.0% were Caucasian, 12.2% African American, 3.5% Asian American, 3.5% multi-racial, and 4.9% other/did not respond; and 11.3% indicated Hispanic ethnicity.

Surveys from baseline, and 12-, 24-, and 36-month follow-up were used in the current study. Participants were compensated \$25 and \$30 for completing the baseline and follow-up surveys, respectively. A Federal Certificate of Confidentiality was obtained for the study, and all study procedures were approved by the university's Institutional Review Board (for further description of methodology see Litt, Lewis, Rhew, Hodge & Kaysen, 2015).

Measures

Demographics—Demographic information included ethnicity, race, sexual identity (lesbian or bisexual), and age.

Alcohol Consumption—Alcohol consumption was measured with an item from the Daily Drinking Questionnaire (DDQ; Collins et al., 1985), which is a 4-item measure assessing drinking habits with good convergent validity and high test-retest reliability (Marlatt et al., 1998). The outcome was measured with the item: “Consider a typical week during the last three months: How much alcohol, on average, do you drink each day of a typical week?” Alcohol consumption was defined as the sum of standard drinks for all days in a typical week.

Alcohol Consequences—The Young Adult Alcohol Consequences Questionnaire (YAACQ; Read et al., 2006) assessed 48 drinking consequences. Participants indicated whether they had experienced each consequence during the past 30 days.

Minority Stress—Minority stress was measured using the Daily Heterosexist Experiences Questionnaire (DHEQ; Balsam, Beadnell, & Molina, 2012). Participants rated how often they had each of 35 experiences using a 6-point Likert Scale from 0 (Never) to 5 (Almost Every Day). An example item is: “Having very few people you can talk to about being LGBTQ”. Minority stress was calculated by averaging 7 subscale scores, and was standardized to have a mean of 0 and standard deviation of 1. The measure had excellent internal consistency in this study ($\alpha = .93$).

Data Analytic Plan

Correlations were examined among key study variables using Spearman's ρ . To examine associations between minority stress and drinking outcomes 1 year later, generalized mixed effects models (GLMMs) were used that allowed intercepts to vary across individuals to account for the clustering of repeated observations. Because alcohol consumption and drinking consequences were non-negative integers, positively skewed, with an excess stack of zeros, we used a hurdle form of the mixed model, where a logistic regression model estimated odds ratios (ORs) for the likelihood of non-zero vs. zero count and a truncated

negative binomial model estimated rate ratios (RRs) for the non-zero count associated with covariates (Atkins, Baldwin, Zheng, Gallop, & Neighbors, 2013). The RRs reflect the proportional change in the count associated with a 1-unit increase in the covariate. Models included as covariates minority stress (z-score), baseline age (centered at 18 years), self-reported sexual identity (0: lesbian, 1: bisexual), race/ethnicity (White, non-Hispanic; Black, non-Hispanic; other, non-Hispanic; Hispanic, any race) and baseline level of the outcome.

There were missing data over the course of the study (data available included 77% at the 12-month follow-up, 69% at 24-month, and 68% at 36-month). The final analysis sample consisted of 2126 observations from 864 (81.7%) women. GLMMs provide unbiased estimates in the presence of missing data when data are missing at random (Graham, 2009). Consistent with this assumption, there was no statistically significant association between alcohol use/consequences and likelihood of missingness at a given wave. Further, the distribution of demographic characteristics was similar between the full sample and the current analysis sample. Hurdle mixed models were conducted in R statistical software, version 3.0.3 (R Core, 2015) using the “glmmADMB” package (Skaug, Fournier, Nielsen, Magnusson, & Bolker, 2013).

Results

As shown in Table 1, baseline typical drinks per week and drinking consequences were highly correlated ($\rho = .68$). Minority stress was weakly correlated with typical drinking ($\rho = .07$) and moderately correlated with drinking consequences ($\rho = .16$). At baseline, 26.5% of women reported no drinking and 25.0% reported no drinking consequences. Over the 3 follow-up waves, the proportion of women reporting no drinking was similar compared to baseline (25.6%), but the likelihood of reporting no consequences increased (35.7%).

Table 2 shows results from the hurdle mixed model for typical drinks per week and drinking consequences. In the logit part of the model, age and baseline drinking were associated with any drinking at a given follow-up wave. In the count portion of the model, baseline level of drinking was positively associated with drinking behavior and study visit was negatively associated with drinking. Minority stress was not significantly associated with the outcomes (any drinking or level of drinking) in either the logit or count portions of the model.

A different pattern emerged when examining predictors of drinking consequences. In the logit part of the model, women who reported higher levels of minority stress were more likely to report any drinking consequences at the next study wave. White, non-Hispanic ethnicity and baseline levels of drinking consequences were also associated with consequences. For the count portion of the model, a 1-SD increase in minority stress was associated with a 7% increase in number of consequences at the next study wave. An additional hurdle mixed model further adjusted for concurrent level of typical drinks per week. Minority stress at the prior study wave became more strongly associated with any consequences ($OR = 1.28$; 95% CI : 1.11, 1.47) as well as the count of consequences ($RR = 1.10$; 95% CI : 1.03, 1.17).

Discussion

The current study extends research regarding the association between minority stress and drinking among SMW by focusing on a critical developmental phase for both drinking behavior and sexual identity formation. Previous research has linked minority stress experiences with increased drinking consequences in sexual minorities (Meyer, 2013). This study supported these previous findings by revealing a prospective relationship between SMW's minority stress and later drinking consequences. Contrary to previous findings and a priori hypotheses, drinking consequences – but not overall alcohol intake – were longitudinally linked to minority stress. These results suggest that for SMW, minority stress is associated with higher risk styles of drinking more than for alcohol quantity.

Regarding mechanisms of the association between minority stress and drinking consequences, potential mediators could include motives, comorbidities, and resilience factors. Change in drinking motives may represent one mechanism by which minority stress longitudinally affects drinking consequences. For example, different drinking motivations (e.g., drinking to cope vs. enhance) have differential effects on alcohol intake versus drinking consequences (Gonzalez, Collins, & Bradizza, 2009; Merrill, Wardell, & Read, 2014). Comorbid psychiatric symptomatology may also explain effects of minority stress on drinking consequences, since sexual minorities who experience discrimination are at increased risk of psychiatric complaints (Hatzenbuehler et al., 2010; McLaughlin et al., 2010). Additionally, young adults with psychiatric symptomatology experience more drinking consequences at the same level of drinking (Armeli et al., 2014), so it follows that exposure to minority stress could increase symptoms over time, and thereby worsen drinking consequences. In fact, depression partially mediates the relationship between minority stress and problematic alcohol use, although this relationship has not been confirmed longitudinally (Almeida, Johnson, Corliss, Molnar, & Azrael, 2009).

Potential moderators of the association between minority stress and drinking consequences warrant future research. Sexual identity and gender expression may moderate the number and type of discriminatory experiences encountered by SMW as well as the association between minority stress and drinking. SMW with less traditionally feminine gender expression experience more minority stress (Levitt, Puckett, Ippolito, & Horne, 2012). The current study suggests that minority stress may partially explain elevated rates of alcohol misuse in SMW with non-traditional gender expression (Rosario, Schrimshaw, & Hunter, 2008). Bisexual women also face unique challenges related to sexual identity stigma (Hequembourg, & Brallier, 2009). While bisexual women in the current study did not endorse more problematic drinking (a finding that contradicts some previous work), there may be unique effects of discrimination on drinking for lesbian and bisexual women.

This study additionally provides support for the importance of reducing discrimination. These findings, along with previous literature, illustrate how discrimination contributes to minority stress faced by SMW, which negatively affects health. It is important to underscore the value of intervening to decrease bias, violence, and discrimination against SMW. Such interventions have been successful in decreasing antigay behavior (Bartos, Berger, & Hegarty, 2014), and could indirectly reduce problem drinking in SMW.

The current study has several strengths and limitations. The assessment of minority stress represents both a strength and limitation, as it allows for assessment of proximal and distal minority stressors. While comprehensive, this particular measure also lacks specificity, since distal stressors (e.g., local legislation) are combined with proximal stressors (e.g., internalized stigma). Future research should examine unique effects of minority stress subtypes to determine if proximal, distal, and/or relational minority stressors differentially drive the relationship with drinking consequences. Study strengths include prospective design, which extends previous cross-sectional research. Additionally, the study includes a large proportion of bisexual women, who are often underrepresented in studies of SMW.

This prospective study provided further support for the association between minority stress and drinking consequences among SMW. There is limited research to date examining the role of minority stress and drinking behavior among SMW. The dearth of research in this area begs for future research examining mechanisms of drinking behavior. This research can inform future preventative work, which could alleviate the harmful effects of discrimination.

Acknowledgments

This research was supported by the National Institute on Alcohol Abuse and Alcoholism (R01AA018292; PI: Kaysen, D. L.). Manuscript preparation was partially supported by T32 MH18869 (PIs Kilpatrick, D. G., & Danielson, C. K.) and the Department of Veterans Affairs Office of Academic Affiliations Advanced Fellowship Program in Mental Illness Research and Treatment (Dr. Wilson). The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the VA or the United States government or any of the institutions with which the authors are affiliated.

Statement 1: Role of Funding Sources

NIAAA, NIMH, and the Department of Veterans Affairs had no role in the study design, collection, analysis or interpretation of the data, writing the manuscript, or the decision to submit the paper for publication.

References

- Almeida J, Johnson R, Corliss H, Molnar B, Azrael D. Emotional distress among LGBT youth: The influence of perceived discrimination based on sexual orientation. *Journal of Youth and Adolescence*. 2009; 38(7):1001–1014. doi: 10.1007/s10964-009-9397-9. [PubMed: 19636742]
- Armeli S, Dranoff E, Tennen H, Austad CS, Fallahi CR, Raskin S, Pearson G. A longitudinal study of the effects of coping motives, negative affect and drinking level on drinking problems among college students. *Anxiety Stress and Coping*. 2014; 27(5):527–541. doi: 10.1080/10615806.2014.895821.
- Atkins DC, Baldwin SA, Zheng C, Gallop RJ, Neighbors C. A tutorial on count regression and zero-altered count models for longitudinal substance use data. *Psychology of Addictive Behaviors*. 2013; 27(1):166. [PubMed: 22905895]
- Bartos SE, Berger I, Hegarty P. Interventions to reduce sexual prejudice: A study-space analysis and meta-analytic review. *Journal of Sex Research*. 2014; 51(4):363–382. doi: 10.1080/00224499.2013.871625. [PubMed: 24754358]
- Boehmer U. Twenty years of public health research: Inclusion of lesbian, gay, bisexual, and transgender populations. *American Journal of Public Health*. 2002; 92(7):1125–1130. [PubMed: 12084696]
- Coulter RW, Kenst KS, Bowen DJ. Research funded by the National Institutes of Health on the health of lesbian, gay, bisexual, and transgender populations. *American Journal of Public Health*. 2014; 104(2):e105–e112. [PubMed: 24328665]
- Dermody SS, Marshal MP, Cheong J, Burton C, Hughes T, Aranda F, Friedman MS. Longitudinal disparities of hazardous drinking between sexual minority and heterosexual individuals from

- adolescence to young adulthood. *Journal of Youth and Adolescence*. 2014; 43(1):30–39. doi: 10.1007/s10964-013-9905-9. [PubMed: 23325141]
- Goldbach JT, Tanner-Smith EE, Bagwell M, Dunlap S. Minority stress and substance use in sexual minority adolescents: A meta-analysis. *Prevention Science*. 2014; 15(3):350–363. doi: 10.1007/s11121-013-0393-7. [PubMed: 23605479]
- Goldberg S, Strutz KL, Herring AA, Halpern CT. Risk of substance abuse and dependence among young adult sexual minority groups using a multidimensional measure of sexual orientation. *Public Health Reports*. 2013; 128(3):144–152. [PubMed: 23633729]
- Gonzalez VM, Collins RL, Bradizza CM. Solitary and social heavy drinking, suicidal ideation, and drinking motives in underage college drinkers. *Addictive Behaviors*. 2009; 34(12):993–999. doi: 10.1016/j.addbeh.2009.06.001. [PubMed: 19556066]
- Graham JW. Missing data analysis: Making it work in the real world. *Annual Review of Psychology*. 2009; 60:549–576.
- Gruskin EP, Hart S, Gordon N, Ackerson L. Patterns of cigarette smoking and alcohol use among lesbians and bisexual women enrolled in a large health maintenance organization. *American Journal of Public Health*. 2001; 91(6):976–979. doi: 10.2105/ajph.91.6.976. [PubMed: 11392944]
- Hatzenbuehler ML, Corbin WR, Fromme K. Trajectories and determinants of alcohol use among LGB young adults and their heterosexual peers: Results from a prospective study. *Developmental Psychology*. 2008; 44(1):81–90. doi: 10.1037/0012-1649.44.1.81. [PubMed: 18194007]
- Hatzenbuehler ML, Corbin WR, Fromme K. Discrimination and alcohol-related problems among college students: A prospective examination of mediating effects. *Drug and Alcohol Dependence*. 2011; 115(3):213–220. [PubMed: 21145669]
- Hatzenbuehler ML, Keyes KM, Hasin DS. State-level policies and psychiatric morbidity In lesbian, gay, and bisexual populations. *American Journal of Public Health*. 2009; 99(12):2275–2281. doi: 10.2105/ajph.2008.153510. [PubMed: 19833997]
- Hatzenbuehler ML, McLaughlin KA, Keyes KM, Hasin DS. The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: A prospective study. *American Journal of Public Health*. 2010; 100(3):452–459. doi: 10.2105/ajph.2009.168815. [PubMed: 20075314]
- Hequembourg AL, Brallier SA. An exploration of sexual minority stress across the lines of gender and sexual identity. *Journal of Homosexuality*. 2009; 56(3):273–298. [PubMed: 19319738]
- Levitt HM, Puckett JA, Ippolito MR, Horne SG. Sexual minority women's gender identity and expression: Challenges and supports. *Journal of Lesbian Studies*. 2012; 16(2):153–176. doi: 10.1080/10894160.2011.605009. [PubMed: 22455340]
- Lewis MA, Rhew IC, Hodge KA, Kaysen DL. Reciprocal relationships over time between descriptive norms and alcohol use in young adult sexual minority women. *Psychology of Addictive Behaviors*. 2015; 29(4):885. [PubMed: 26478944]
- Matthews AK, Cho YI, Hughes T, Wilsnack SC, Johnson T, Martin K. The relationships of sexual identity, hazardous drinking, and drinking expectancies with risky sexual behaviors in a community sample of lesbian and bisexual women. *Journal of the American Psychiatric Nurses Association*. 2013; 19(5):259–270. doi: 10.1177/1078390313505644. [PubMed: 24071822]
- Matthews AK, Li C-C, Aranda F, Torres L, Vargas M, Conrad M. The influence of acculturation on substance use behaviors among Latina sexual minority women: The mediating role of discrimination. *Substance Use & Misuse*. 2014; 49(14):1888–1898. [PubMed: 24941026]
- McCabe SE, Bostwick WB, Hughes TL, West BT, Boyd CJ. The relationship between discrimination and substance use disorders among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health*. 2010; 100(10):1946–1952. [PubMed: 20075317]
- McLaughlin KA, Hatzenbuehler ML, Keyes KM. Responses to discrimination and psychiatric disorders among Black, Hispanic, female, and lesbian, gay, and bisexual individuals. *American Journal of Public Health*. 2010; 100(8):1477–1484. [PubMed: 20558791]
- Merrill JE, Wardell JD, Read JP. Drinking motives in the prospective prediction of unique alcohol-related consequences in college students. *Journal of Studies on Alcohol and Drugs*. 2014; 75(1):93–102. [PubMed: 24411801]

- Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*. 2003; 129(5):674. [PubMed: 12956539]
- Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychology of Sexual Orientation and Gender Diversity*. 2013; 1(S):3–26. doi: 10.1037/2329-0382.1.S.3.
- R Core Team. R: A language and environment for statistical computing. R Foundation for Statistical Computing; Vienna, Austria: 2015.
- Reed E, Prado G, Matsumoto A, Amaro H. Alcohol and drug use and related consequences among gay, lesbian and bisexual college students: Role of experiencing violence, feeling safe on campus, and perceived stress. *Addictive Behaviors*. 2010; 35(2):168–171. [PubMed: 19796880]
- Rosario M, Schrimshaw EW, Hunter J. Butch/femme differences in substance use and abuse among young lesbian and bisexual women: Examination and potential explanations. *Substance Use & Misuse*. 2008; 43(8-9):1002–1015. doi: 10.1080/10826080801914402. [PubMed: 18649226]
- Schauer GL, Berg CJ, Bryant LO. Sex differences in psychosocial correlates of concurrent substance use among heterosexual, homosexual and bisexual college students. *American Journal of Drug and Alcohol Abuse*. 2013; 39(4):252–258. doi: 10.3109/00952990.2013.796962. [PubMed: 23773221]
- Skaug H, Fournier D, Nielsen A, Magnusson A, Bolker B. Generalized linear mixed models using AD Model Builder. R package version 0.7.7. 2013 7/16/2013.
- Talley AE, Hughes TL, Aranda F, Birkett M, Marshal MP. Exploring alcohol-use behaviors among heterosexual and sexual minority adolescents: intersections with sex, age, and race/ethnicity. *American Journal of Public Health*. 2014; 104(2):295–303. [PubMed: 24328614]

Highlights

- For young adult lesbian and bisexual women, minority stress is longitudinally linked to likelihood of alcohol consequences 12 months later
- Sexual minority stress prospectively predicts the severity of drinking problems 12 months later
- Minority stress was not associated with quantity of alcohol consumed

Table 1

Spearman's ρ for correlation among and mean (SD) and median of Daily Heterosexism Questionnaire score, typical drinks per week, and drinking consequences at baseline

	DHQ score	Typical drinks per week	Drinking consequences
DHQ score	1.00	--	--
Typical drinks per week	.07 [*]	1.00	--
Drinking consequences	.16 ^{**}	.68 ^{**}	1.00
Mean (SD)	1.55 (.74)	8.34 (11.52)	7.96 (9.25)
Median	1.48	5	4

*
p<.05

**
p <.01

Estimates for associations between covariates and drinking outcomes (typical weekly drinks and drinking consequences), separated by logit (any vs. no behavior) and non-zero count of behavior

Table 2

	Typical weekly drinks				Drinking consequences			
	Any vs. no drinking	Count of drinks	Any vs. no consequences	Count of consequences	OR	RR	95% CI	95% CI
Intercept	3.41 ^{**}	[1.40, 8.28]	4.51 ^{***}	[3.53, 5.76]	1.36	3.01 ^{***}	[.73, 2.54]	[2.27, 3.97]
Minority stress, z-score	.97	[.81, 1.17]	1.02	[.94, 1.08]	1.23 ^{**}	1.07 [*]	[1.07, 1.43]	[1.00, 1.14]
Age	1.19 ^{**}	[1.07, 1.33]	1.00	[.97, 1.03]	1.00	1.03	[.93, 1.08]	[.98, 1.05]
Bisexual	.70	[.45, 1.08]	.94	[.83, 1.06]	1.02	1.12	[.85, 1.39]	[.98, 1.29]
Race/ethnicity								
White, non-Hispanic	--	--	--	--	--	--	--	--
Black, non-Hispanic	1.22	[.57, 2.61]	1.14	[.93, 1.41]	.81	1.11	[.48, 1.38]	[.87, 1.42]
Other, non-Hispanic	.69	[.31, 1.54]	1.13	[.90, 1.41]	.53 [*]	1.21	[.30, .94]	[.93, 1.59]
Hispanic	1.06	[.53, 2.14]	1.09	[.90, 1.32]	1.05	1.20	[.63, 1.73]	[.97, 1.49]
Visit	1.16	[.97, 1.37]	.95 [*]	[.91, 1.00]	.93	.95	[.80, 1.07]	[.90, 1.01]
Baseline outcome ^a	1.07 ^{***}	[1.05, 1.10]	1.09 ^{***}	[1.04, 1.05]	1.11 ^{***}	1.05 ^{***}	[1.09, 1.13]	[1.05, 1.06]

^aTypical weekly drinks or drinking consequences at baseline

* p < .05

** p < .01

*** p < .001