

A Longitudinal Examination of Multiple Forms of Stigma on Minority Stress, Belongingness, and Problematic Alcohol Use

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Abstract

College students who experience stigma report problematic alcohol use. However, the stigma-health link focuses on one form of stigma, thereby excluding the intersectional oppression of experiencing multiple forms of stigma. The present work has two primary aims: (1) evaluating whether additive intersectional minority stress confers greater problematic alcohol use among multiple stigmatized college students one year later, and (2) whether that link can be explained by lower belongingness and greater drinking to cope motives. Students (N = 427) ranging in stigmatized identities (14.3% zero; 46.4% one; 29.5% two; 9.8% three or more), participated in an annual health survey in two subsequent fall semesters (2020 to 2021). Structural equation modeling tested the hypothesized model on relations between number of stigmatized identities, minority stressors, belongingness, and coping motive on problematic drinking (risky and problem drinking) one year later. As hypothesized, holding more stigmatized identities predicted higher minority stress, which in turn predicted less belonging. Partially consistent with expectations, lower belonging predicted more problem drinking, but less risky drinking. As expected, higher minority stress predicted higher drinking to cope motives, which in turn, predicted more problem drinking, and risky drinking. In conclusion, belongingness and drinking to cope may be potential mechanisms through which multiple stigmatized students experience future problem drinking, but that may not always confer to more risky drinking. Implications for universities include implementation of (1) campus-wide belonging interventions for students facing stigma, and (2) initiatives to teach alternative coping strategies that reduce drinking to cope as a strategy to reduce the impact of minority stressors.

Keywords: multiple stigmatized identities, alcohol, additive minority stress, college students, belonging, drinking to cope

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Introduction

Excessive alcohol use in college poses a significant public health concern that can lead to increases in memory loss and higher risks for injury or assault (White & Hingson, 2013). Importantly, college students holding stigmatized identities, that is, culturally

devalued social identities (Crocker, Major, & Steele, 1998), report greater problematic alcohol use (Hatzenbuehler et al., 2011). Furthermore, individuals who identify with more than one stigmatized group (“multiply-stigmatized” individuals) (Remedios & Snyder, 2018), report experiencing more minority stressors (Remedios & Snyder,

2018), and greater problematic alcohol use than their singly-stigmatized peers (i.e., those identifying with only one stigmatized identity) (Cerezo & Ramirez, 2021). A second study among college students showed that compared to women experiencing no discrimination, women experiencing heterosexism and racism reported greater alcohol use (Vu et al., 2019). Therefore, it is important to understand the underlying factors that explain the relationship between intersectional minority stress and problematic alcohol use.

Minority stress (Meyer, 2003), psychological mediation (Hatzenbuehler, 2009), and intersectionality (Crenshaw, 1991) frameworks can help explain relationships between intersectional minority stress and problematic alcohol use. These models suggest individuals exposed to stigma (e.g., disadvantages due to having culturally devalued social identities) experience minority stress, or unique additional stressors associated with exposure to oppression at the structural, interpersonal, and intrapersonal level. Minority stressors are defined as overt or covert forms of oppression that are either at the distal (e.g., structural and interpersonal discrimination) or proximal (e.g., internally perceived experiences of discrimination) level. Multiple stigmatized individuals are exposed to further additional *intersecting* forms of oppression given the interconnected nature of social identities. Following the work of Remedios and Snyder (2018), proximal intersectional minority stressors evaluated in the present study include experiences of perceived discrimination, felt invisibility, and stereotype concern. Hatzenbuehler's mediation model (2009) expands on Meyer's (2003) minority stress theory to characterize how minority stressors require individuals to expend resources to adapt or respond to hostile environments, and therein, exposes them to elevated negative psychological processes (drinking to cope,

lower belongingness) that ultimately result in poorer health, including problematic alcohol use. Although the aforementioned models by Meyer (2003) and Hatzenbuehler (2009) were developed with a focus on sexual minorities, the fundamental model was created following a long history of work theorizing the experiences of individuals holding a variety of stigmatized identities, including on the basis of race, gender, class, to name a few.

Given much of the existing research on the oppression-health link focuses on a single form of oppression (racism or sexism), the generalizability to the real-world experiences of people who identify with more than one stigmatized group is limited (Cole, 2009). Thus, it is less clear how minority stress tied to intersectional oppression is associated with problematic alcohol use.

In this study, we aimed to integrate the three aforementioned models to examine additive intersectional minority stress processes and problematic alcohol use among multiply stigmatized students. Consistent with those frameworks, we sought to identify the psychological processes that are (1) established factors that drive alcohol-related problems, and (2) uniquely arise from the additional harms experienced because of oppression (Hatzenbuehler et al., 2011; Meyer, 2003) among students who identify with a range of stigmatized identities (Cole, 2009). Extant literature provides support for two established mediators of minority stress, and problematic alcohol use: (1) a lack of belonging, (Lewis et al., 2017; Napoli et al., 2003; Rostosky et al., 2003) and (2) drinking to cope (Hatzenbuehler et al., 2011; Lewis et al., 2016). What follows is a review of intersectional frameworks, hypothesized pathways through belonging and coping, and alcohol use among multiply-stigmatized individuals.

Intersectional Frameworks

The Combahee River Collective (1977/1995), a group of Black feminist scholar-activists, were first to highlight problems associated with only accounting for oppression that Black women face through racism *or* sexism, but not racist sexism. That work, later popularized as intersectionality theory by Kimberlé Crenshaw (1991), explicitly called for an examination of the unique forms of oppression experienced by individuals when subjected to oppression across multiple stigmatized identities. That said, quantitative psychological research of intersectionality is continuously evolving (Bauer et al., 2021). Some scholars approach intersectional experiences through the additive (versus interactive) lens of multiple oppressed identities, such that a person who identifies with stigmatized identities across both race and gender would experience double the stress as someone who is stigmatized on the basis of only race or gender (Remedios & Snyder, 2018). Examining multiple identities in this manner is also referred to as the double-disadvantage hypothesis, or double-jeopardy hypothesis (Beale, 1970; Dowd & Bengtson, 1978). These approaches aim to capture the multiple forms of harm, disadvantage, and stress that multiply-stigmatized individuals experience compared to those holding single or non-stigmatized identities, and therein serve as one attempt at approaching intersectionality.

Belongingness

Belongingness, or the sense that one is an integral part of their surrounding systems, is considered a fundamental human need that predicts numerous mental, behavioral, and social outcomes (Allen et al., 2021; Hamilton & Dehart, 2019). Stigmatized students are exposed to greater threats to belonging in mainstream cultures, like the United States

(U.S.), which is built on their systematic exclusion (Murdock-Perriera et al., 2019). Such contexts can be threatening because they communicate to those students that they are devalued, not accepted, and thus, result in feeling as though they do not fit in their university (Allen et al., 2021). Indeed, first-year racial-ethnic minority and first-generation college students at four-year (but not two-year) institutions reported lower belonging than majority peers, which predicted lower mental health (Gopalan & Brady, 2020). Similar mediation patterns emerge among lesbian, gay bisexual, and asexual college students, who report higher anxiety and depression, and lower happiness via lower belonging and safety compared to heterosexual peers (Wilson & Liss, 2022).

Threats to one's fundamental need to belong are also associated with increased use of alcohol. Among Native American adolescents, students who reported lower belonging in school reported higher lifetime and current use of alcohol, among other substances (Napoli et al., 2003). Decreases in school belonging was associated with an increased odds of alcohol use, and sexual minority youth, specifically, reported lower school belonging than their heterosexual peers (Rostosky et al., 2003). Among lesbian women, social isolation, a distinct but related concept to belongingness (Asher & Weeks, 2013), mediated the link between higher stigma-related stress, coping motives, and alcohol-related problems (Lewis et al., 2017). These studies underscore that stigmatized individuals report belonging, which may be a specific pathway for greater problematic alcohol use.

Coping Motives

Coping motives, or the strategic use of drinking to modulate, escape, or avoid negative emotions (Cooper et al., 1995), is an established risk factor for alcohol-related

problems (Martens et al., 2008). Drinking to cope is a mediator of the relationship between perceived discrimination, a form of minority stress, and alcohol-related problems among several minoritized groups including women, people of color, and gay, lesbian, and bisexual individuals (Hatzenbuehler et al., 2011; Lewis et al., 2016). Research with sexual minority, gender expansive women of color offers additional depth of understanding on how coping with multiple forms of oppression may relate to alcohol-related outcomes. For instance, a qualitative analysis among Latine and African-American sexual minority, gender expansive women revealed that drinking to cope as a result of discrimination-related stress was one of five major patterns of alcohol use (Cerezo et al., 2020). Furthermore, among Black lesbian women, sequential mediators of rumination, psychological distress and drinking to cope explained problematic alcohol use (Lewis et al., 2016). Across these studies, coping motives linked minority stressors and alcohol use; however, more research on associations between drinking to cope with minority stressors more broadly (perceived discrimination, stereotype concerns, and felt invisibility) and alcohol-related problems is needed.

Alcohol Use among Multiply-Stigmatized Groups

College students holding multiple stigmatized identities perceive more unfair treatment, feel more invisible, and have more concerns about being stereotyped than those with zero or one stigmatized identity (Remedios & Snyder, 2018). Experiencing more forms of discrimination via multiple stigmatized identities is associated with a greater likelihood of experiencing major depression and poorer physical health (Grollman, 2014). Higher intersectional minority stress (i.e., more sexism,

heterosexism, and racism) also predicts past year substance use in bivariate correlations (Cerezo & Ramirez, 2021). There are similar longitudinal effects among Black, Latino, and multiracial gay and bisexual men (English et al., 2018). Namely, the interaction of gay rejection sensitivity and racial discrimination associates with multiplicatively higher emotion regulation difficulties, which in turn, predicts future heavy drinking. Those findings highlight the importance of intersectional approaches to capture multiply-stigmatized people's experiences.

Conceptual Model

We extend previous literature through two primary ways. First, we examine whether the additive intersectional minority stress associated with multiple stigmatized identities confers greater problematic alcohol use (i.e., risky and problem drinking) among college students one year later. Second, we examine whether that link can be explained by (1) lower belongingness and (2) greater drinking to cope motives. First, we aim to replicate previous findings (Remedios & Snyder, 2018), and hypothesize that holding a greater number of stigmatized identities will be associated with higher minority stress (perceived discrimination, stereotype concerns, and felt invisibility). Second, we test the mediation pathway through belongingness, and hypothesize that higher minority stress will be correlated with lowered belongingness, which will in turn, predict greater future risky drinking (i.e., higher peak number of drinks consumed in one setting) and problem drinking (i.e., higher negative consequences from alcohol use). Last, we test the pathway through coping motives, and hypothesize that minority stress will link to higher drinking to cope motives, which will predict greater future problematic alcohol use. Taken

together, the three sets of hypotheses will serve to demonstrate a link between a greater number of stigmatized identities and problematic alcohol use longitudinally over a one-year period, consistent with intersectional minority stress theories.

Methods

Procedure and Participants

Full-time students at a mid-sized U.S. midwestern university were invited to participate in an annual university student health survey via Qualtrics collected at two timepoints: fall 2020 and fall 2021 (18.1% and 16.9% response, respectively). Although the survey was designed as a cross-sectional study, the present analyses included students with complete data on relevant measures in both 2020 and 2021 surveys ($n = 427$). Upon completion at each timepoint, participants received a \$3 gift card.

Measures

Demographic Variables

Participants selected their current gender identity and their current sexual orientation. For gender identity, options included Woman/Female, Man/Male, or Gender Expansive. For sexual orientation, options included: Heterosexual/straight, Bisexual, Gay/lesbian, Asexual, Questioning, or not listed. For race/ethnicity, participants could choose all that apply from the following identities: European American or White, Asian or Asian American, Hispanic or Latino/a, Black or African American, Native American or Alaskan Native, Hawaiian or Pacific Islander. Finally, participant Pell grant eligibility status was merged into the data prior to analysis.

Stigmatized Identities

Following Remedios and Snyder (2018), we calculated a sum score of the number of stigmatized identities (range 0-5) that the participant reported on the bases of gender (Man/Male = 0, Woman/Female = 1, Gender Expansive = 2), sexual orientation (Heterosexual/straight = 1, Bisexual, Gay/lesbian, Asexual, Questioning, or not listed = 2), racial/ethnic identity (European American or White = 0, at least one of the following identities: Asian or Asian American, Hispanic or Latino/a, Black or African American, Native American or Alaskan Native, Hawaiian or Pacific Islander), and social class (Pell Grant, not eligible = 0, eligible = 1). Eligibility for the Pell Grant was operationalized as an indicator of stigma on the basis of social class due to the awards being granted to students from low-income households. Although four categories of stigmatized identities were measured, students identifying as gender expansive were coded with a score of 2 in an attempt to delineate from experiences of students identifying as Woman/Female.

Minority Stress

We used three items from Remedios and Snyder (2018) to measure minority stress. Participants selected how much they agreed with three statements using a 7-point Likert-scale from *Strongly disagree* (1) to *Strongly agree* (7). An example item is “I feel invisible because of my identities (race/ethnicity, gender, weight, sexual orientation, social class).

Belonging

Belonging was measured with single item adapted from the Perceived Cohesion Scale (Bollen & Hoyle, 1990). Participants reported their level of agreement to the

statement: “I feel a sense of belonging – that I “fit in” at [University name]” on a 6-point Likert-scale from *Strongly disagree* (1) to *Strongly agree* (6).

Drinking to Cope

The 5-item Coping Motives subscale of the Cooper’s (1994) Revised Drinking Motives Questionnaire assesses how often someone drinks to reduce negative emotions. Participants were asked to rate the frequency they engaged a variety of coping motives on a 5-point Likert-scale from *Almost never/never* (1) to *Almost always/Always* (5).

Problematic Alcohol Use

Risky Drinking. Participants were provided with the definition of a standard drink. They indicated the number of standard drinks that they consumed on their highest drinking occasion in the past 30 days, which was operationalized as risky drinking.

Problem Drinking. The 23-item Rutgers Alcohol Problem Index (RAPI) (White & Labouvie, 1989) assesses the frequency of 23 negative consequences that can result from alcohol use over the past year. Example of consequence include: “Got into fights, acted bad, or did mean things,” “Not able to do your homework or study for a test,” “Had withdrawal symptoms, that is, felt sick because you stopped or cut down on drinking.” Participants were asked to choose how frequently they experienced problems on a scale from *Never* (1) to *More than 10 times* (4).

Data Analysis

Before fitting the structural equation model, preliminary procedures were taken to examine the data. Specifically, patterns of missingness (Little’s MCAR) and correlations between variables were inspected, revealing patterns consistent with that of missing at random or due to planned missingness (i.e., due to the length of the survey not every participant got every measure) Outside of planned missingness, 1.2% or less was missing on each variable. The model was run using full information maximum likelihood to estimate missing values in MPlus v8.6. (Muthén & Muthén, 1998). The following criteria were used to examine the model: (1) theoretical relevance, (2) global fit indices (chi-square, CFI, and TLI), (3) microfit indices (RMSEA), and (4) parsimony. A non-statistically significant chi-square indicates that the data do not significantly differ from the hypotheses represented by the model. However, large sample sizes rarely are able to achieve non-significant chi-squares (Kenny, 2015). For CFI and TLI, fit indices of above .90 indicated a well-fitting model (Hu & Bentler, 1999). Browne and Cudeck (1992) suggest a RMSEA of less than .05 suggests a well-fitting model.

Results

Table 1 presents the bivariate correlations, mean, standard deviation, and Cronbach’s alpha for measures.

Table 1
Correlations, descriptive statistics, and reliability

	1.	2.	3.	4.	5.	6.
1. Number of Stigmatized Identities	-					
2. Minority Stress	.49***	-				
3. Drinking to Cope	.05	-.05	-			
4. Belongingness	-.26***	-.34***	.07	-		
5. Risky Drinking	-.26***	-.29***	.38***	.16**	-	
6. Alcohol Problems	-.05	-.02	.33***	.04	.37***	-
Mean	1.44	2.32	1.68	3.88	3.84	3.63
SD	.97	1.42	.82	1.32	4.05	6.53
Cronbach's Alpha	-	.82	.87	-	-	.85

*** $p < .001$; ** $p < .01$; * $p < .05$.

Sample Characteristics

Table 2 shows participant characteristics on each of the coded identities, and Table 3 for specific intersectional identities represented in the sample. On average, participants reported 1.44 ($SD = .97$) stigmatized identities. For the total number of stigmatized identities, which was the main predictor variable, we summed across the four categories (gender, race, sexual orientation, and class) with codes ranging from 0 to 5. In sum, 14.3% of participants ($n = 61$) were coded as having zero stigmatized identities, 44.3% ($n = 189$) coded as one; 30.2% ($n = 129$) coded as two; 9.8% ($n = 42$) coded as three; and 1.6% ($n = 7$) coded as four or five stigmatized identities.

Structural Equation Model

The full model examined the relationship between stigmatized identities, minority stress, belongingness, drinking to cope, risky drinking, and problem drinking (Figure 1), and demonstrated good fit to the data, $X^2(n = 427, 45) = 128.04$, $RMSEA = .066$, $CFI = .96$, $TLI = .94$. Most pathways were statistically significant and in the predicted direction. Consistent with expectations, bivariate correlation and structural path model revealed identifying with more stigmatized identities was associated with higher minority stress.

Table 2
Participant characteristics

Characteristic	N (%)
Age	20.84 (SD = 5.12)
Gender	
Woman/Female	316 (74.0%)
Man/Male	96 (22.5%)
Gender-expansive ^a	15 (3.5%)
Race/Ethnicity ^b	
American White or Caucasian	380 (89.0%)
Asian or Asian American	41 (9.6%)
Hispanic or Latino/a	24 (5.6%)
Black or African American	18 (4.2%)
Native American or Alaskan Native	8 (1.9%)
Hawaiian or Pacific Islander	7 (1.6%)
Sexual Orientation	
Heterosexual/straight	314 (73.5%)
Bisexual	57 (13.3%)
Gay/lesbian	21 (4.9%)
Asexual	11 (2.6%)
Questioning	5 (1.2%)
Not listed	10 (2.3%)
Pell Grant Status	
Eligible	59 (13.8%)
Ineligible	368 (86.2%)

Note. ^a Gender-expansive identities include any of the following identities: transwoman; transman; genderqueer/gender non-conforming; intersex; a gender not listed here.

^b N does not equal to total sample (427), as participants were instructed to select all that apply, and such would be double counted

Table 3
Number of stigmatized identities

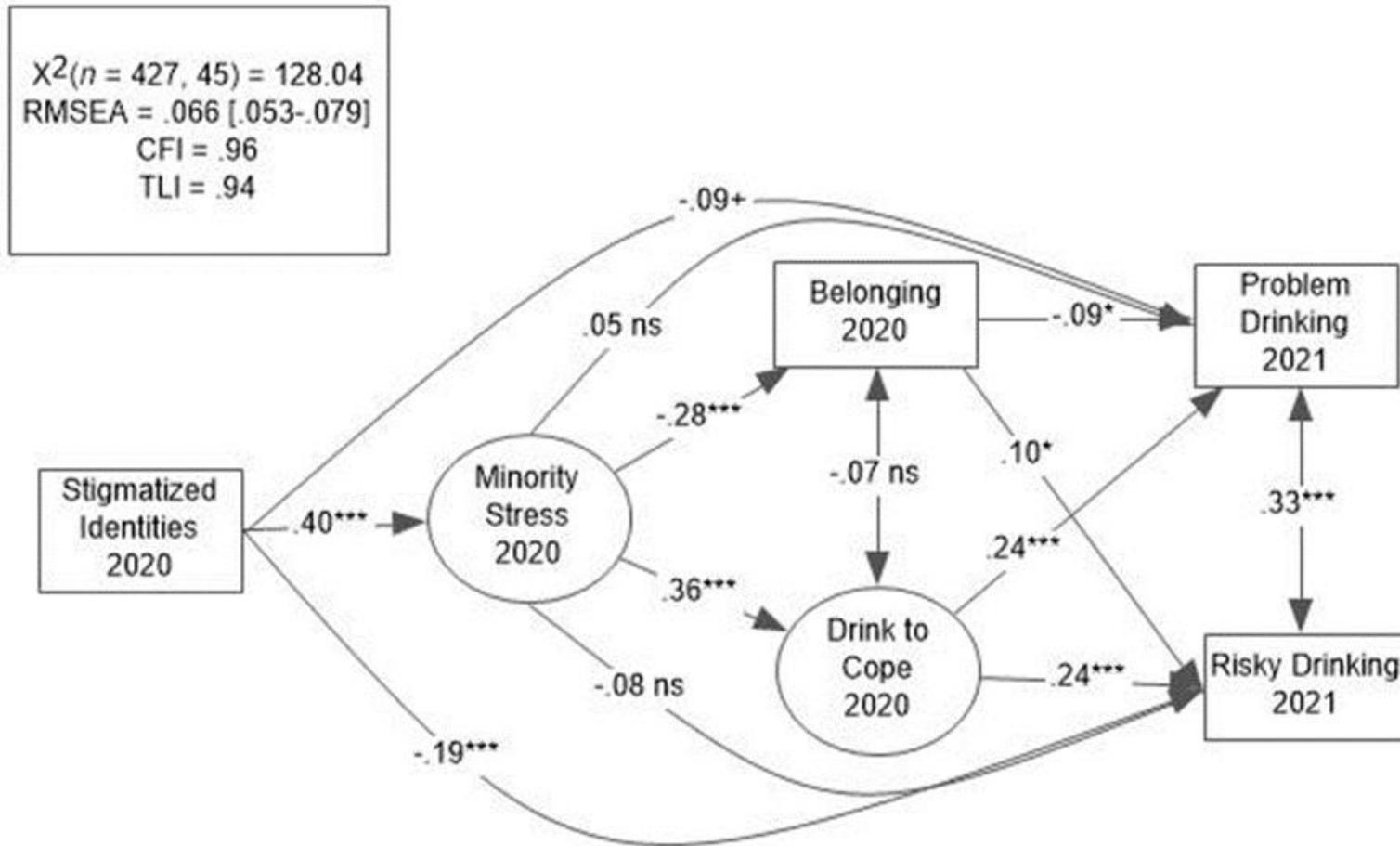
Intersections	N = 427 (100%)		
0 SID	61 (14.1%)		
1 SID	189 (44.3%)		
	N	% SID	% Total
Gender (Women)	160	86.7%	37.5%
Race/Ethnicity (REM)	12	6.3%	2.81%
Sexual Orientation (LGBTQ+)	9	4.8%	2.11%
Pell Grant (Awarded grant)	8	4.2%	1.87%
2 SIDs	129 (30.2%)		
	N	% SID	% Total
Gender X Race/Ethnicity	47	36.4%	11.01%
Gender X sexual orientation	56	43.4%	13.11%
Gender X Pell grant	18	14.0%	4.22%
Race/Ethnicity X sexual orientation	3	2.3%	0.70%
Race/Ethnicity X Pell grant	2	1.6%	0.47%
Sexual orientation X Pell grant	2	1.6%	0.47%
3 SIDs	42 (9.8%)		
	N	% SID	% Total
Gender X race X sexual orientation	15	31.8%	3.51%
Gender X race X Pell grant	6	14.3%	1.40%
Gender X sexual orientation X Pell grant	21	50%	4.92%
4 SIDs	7 (1.6%)		

Note.

SID = stigmatized identity; REM = Racial/Ethnic Minority; LGBTQ+ = Lesbian, Gay, Bisexual, Trans, Queer, and sexual minority identities. Participants were coded as holding a stigmatized gender identity if they identified as woman/female (code = 1) or one of the following gender-expansive identities: transwoman; transman; genderqueer/gender non-conforming; intersex; a gender not listed here (code = 2). Participants were coded as having a stigmatized identity on the basis of sexual orientation (code = 1) if they selected any identity other than heterosexual/straight. Participants were coded as having a stigmatized racial/ethnic identity (code = 1) if they selected at least one racial/ethnic category other than White (i.e., indicated biracial status). As a proxy for a stigmatized social class identity, participants eligible for Pell grants were coded as one, as these awards are granted to students from low-income households.

Figure 1

Structural equation model of variables of interest



Problematic Alcohol Use

A majority of participants reported having had an alcoholic beverage at baseline ($n = 365, 85.5\%$). On their peak drinking occasion in the past 30 days, participants reported an average of 3.84 ($SD = 4.05$) standard drinks. Bivariate correlations were in expected negative direction between number of stigmatized identities, minority stress, belonging, and drinking to cope motives.

Meditation Pathway through Belonging

As hypothesized, bivariate correlation and structural model path indicated identifying with more stigmatized identities and higher minority stress was associated with lowered belonging, which in turn, explained higher problem drinking one year later. However, unexpectedly, future risky drinking was positively related to belonging, and negatively related to minority stress and number of stigmatized identities.

Mediation Pathway through Coping Motives

Bivariate correlation and the structural model path indicated, as expected, coping motives and minority stress are negatively related, and coping motives is positively related to risky drinking and problem drinking one year later. In other words, as expected, higher minority stress predicted higher drinking to cope motives, which in turn, explained more problem drinking, and risky drinking.

Discussion

The present work extends the literature on problematic alcohol use among multiply-stigmatized individuals by testing an additive intersectional approach among individuals facing multiple forms of oppression (Beale,

1970; Grollman, 2014). Problematic alcohol use in the present study was characterized as engaging in risky drinking and problem drinking. Risky drinking was measured as the peak number of drinks consumed in one setting, wherein a large amount of alcohol was consumed (i.e., higher negative consequences from alcohol use). Specifically, we tested whether greater risky and problem drinking among multiply-stigmatized students was associated with greater reported minority stressors, indirectly through lower belongingness, and greater drinking to cope motives. A key strength of the study is that it accounts for the experience of individuals who identify with multiple stigmatized identities, replicating previous work on additive intersectional stressors and support for the double-disadvantage hypothesis (Beale, 1970; Grollman, 2014). Taking an additive approach to the intersections of multiple stigmatized identities offers an initial step towards understanding how exposure to multiple forms of discrimination influences coping motives, belonging, and problematic alcohol use. Thus, the present study extends the literature on potential mechanisms explaining problem drinking behaviors and risky drinking in college students facing disproportionate exposure to discrimination. A second strength is the longitudinal design to test the mediation of several general and unique stressors on future problematic alcohol use over one year, consistent with minority stress theory and the psychological mediation model. We found partial support for our three main hypotheses.

First, consistent with expectations, those with more stigmatized identities reported higher minority stress in bivariate correlations and the structural model. This relationship replicates previous findings (Remedios & Snyder, 2018) that individuals who identify with multiple (versus zero or single) stigmatized identities report higher

levels of discrimination, stereotype threat, and felt invisibility.

Second, we found partial support for our hypothesized mediation pathway through belongingness on risky and problem drinking. First, consistent with Murdock-Perriera et al.'s (2019) work suggesting that those holding (multiple) stigmatized identities may experience greater threats to their belonging, we found higher minority stress associated with lowered belonging. However, mixed results between belonging and risky and problem drinking emerged. For problem drinking, in the structural model, as hypothesized, lowered belonging predicted greater problem drinking one year later, yet we failed to find a bivariate correlation. Notably, given we did find the expected negative relationship between belonging and problem drinking in the model, it may be the case that when accounting for stigmatized identities *and* minority stress, students experiencing less belonging because of oppressive environments, are also more likely to drink with consequences. This finding is consistent with Hatzenbuehler's (2009) mediation framework of minority stress, wherein minority stress is associated with greater problem drinking, indirectly via decreased belonging.

However, for risky drinking, or the number of peak drinks consumed, we found an unexpected, *positive* relation with belongingness across both the model and bivariate correlations. Although surprising, it is possible that the positive relationship may reflect norms of collegiate drinking. Becoming involved in the drinking culture may feel like a primary means to bolster social capital and belonging (Gambles et al., 2022; Olmstead et al., 2019). Indeed, Hodgkins (2015) found drinkers versus non-drinkers report greater social inclusion and, in turn, life satisfaction. Further, Reid and Hsu (2012) found (1) binge drinkers versus non-binge drinkers report greater social

satisfaction, and (2) members from stigmatized groups (women, racially minoritized, low income) report equivalent levels of social satisfaction as high-status peers if they engaged in binge drinking than if they did not. This suggests binge drinking attenuated consequences of lower social status on collegiate social satisfaction and provides indirect evidence that drinking may serve as a way through which social status and belonging can be achieved. Thus, it is possible that the belonging-alcohol pathway may differ depending on the alcohol-related behavior: (1) lowered belonging may serve as an additional stressor and thus is a way in which "stigma gets under the skin;" or (2) greater threats to belonging may encourage drinking as a way to "fit" in with others, thereby lending to riskier drinking but increased belonging. Future research should explore those relations further. Specifically, greater understanding of drinking cultures on social activities and belonging for students who identify with stigmatized identities is needed.

Last, we found partial support for our final mediation pathway through drinking to cope. As expected, higher minority stress predicts higher drinking to cope in the model, but this association was not significant in bivariate correlations. The discrepant finding may suggest that when accounting for multiple factors as in the model, the relationship between increased minority stress and coping to drink emerges. However, consistent with previous research (Hatzenbuehler et al., 2011), higher drinking to cope motives predicted greater problem and risky drinking across models. Importantly, similar to belonging, direct associations between minority stress, future risky and problem drinking failed to reach significance, thereby suggesting that among students who identify with stigmatized identities, drinking to cope is another specific mechanism through which

stigmatized students may be vulnerable to problematic alcohol use.

Of important note, when examining direct relationships between minority stress and alcohol consumption and problems, additional mixed patterns emerge. Contrary to expectations, higher minority stress correlated with *less* risky drinking (i.e., fewer peak number of drinks) in bivariate associations, did not reach statistical significance in the model, and was not associated with problem drinking in either analysis. This relationship also was observed when examining the associations with the number of stigmatized identities. These findings are surprising in light of Hatzenbuehler's mediation framework theory, which posits increased minority stress may exacerbate psychological processes associated with problematic alcohol use.

Examples of possibilities relevant to the specific context of this sample may help to explain our findings. First, negative and non-significant associations may be confounded by our majority White, woman sample (Table 3). Indeed, although Lewis et al. (2016) found that among Black lesbian women drinking to cope explained problematic alcohol use, those findings did not replicate among non-Hispanic White women. Second, students sampled in the present study experienced more social isolation than they have in the past due to the COVID-19 pandemic. Consistent with the present findings, there is a negative association between substance use and discrimination in spring 2020 among racially stigmatized students (Hicks et al., 2022). Third, it is possible that students experiencing minority stress on campus may fear harsher punishment for risky drinking, and as such may reduce risky, problem drinking. Last, another possibility is tied to the somewhat unexpected *positive* bivariate relations between belongingness, risky drinking, and alcohol-related problems. As previously

mentioned, the positive relationship between belonging and drinking may reflect an influence of a drinking culture. It is possible that students who are experiencing greater minority stress, associated with less belonging, may not seek out or feel included in social interactions involving alcohol. Thus, they may both be more aware of the negative consequences of risky drinking and thus do not engage in social drinking.

Limitations

First, whereas the present work is grounded in intersectionality theory with a review of literature at various intersections, we applied an additive approach. As intersectionality theorists have noted that taking an additive rather than an interactive approach can flatten or weaken our understanding of the unique exposure to oppression at intersection of two or more stigmatized experiences. Due to the methods and available data, unique constellations of identities as in the reviewed literature (e.g., black queer women or gay men) were collapsed, and thus, flattened experiences across different forms of oppression. Indeed, students who identify with two stigmatized identities may experience notably different forms of oppression across axes of their identities (gendered racism, or classist heterosexism) that are likely qualitatively different. As a consequence, the results are not able to test explicitly if mechanisms of the oppression-alcohol link differ across specific intersections of stigmatized identities. Despite this limitation, in the current study, we aimed to approach intersectionality as an initial step towards understanding how intersectional oppression may impact problematic alcohol use. Findings support continued research in larger samples on how specific unique intersections of oppression may relate to problematic alcohol use.

Second, although the literature reviewed focused on people with multiple stigmatized identities, especially among racially stigmatized groups, we acknowledge our sample is mostly White women (59.7%), with multiple stigmatized identities across sexual orientation (13%), class (4%), and their intersection (4%). Thus, with a student sample of only 21% identifying as racially stigmatized, we note that nuances of intersectional oppression among racially stigmatized college students are limited. This may have influenced some of our non-significant findings. To address the limitations that prohibit generalizing to the experiences of multiply-stigmatized college students of color, future research with larger samples of stigmatized students is necessary. With a larger sample, generalizability could be tested by examining minority stress processes comparing multiply-stigmatized racially diverse students versus those who are not.

Finally, it is important to contextualize that this study was conducted during the COVID-19 pandemic and a period in which we experienced renewed attention to racism in the U.S. Thus, given the unprecedented changes in the environment, our participants may have been more socially isolated, and issues related to racial minority stress may have been particularly salient. Interestingly, alcohol use was within expected norms for a predominantly female-identified sample, and the overall mean levels in minority stress was slightly lower than in previous studies (Remedios & Snyder, 2018). Nevertheless, because the pandemic resulted in unprecedented changes to the daily lives of college students, replicating these findings is needed to assess whether relationships observed remained the same with the return to campus and less isolation.

Future Directions

More research on the direction of the relationship between belonging and drinking behaviors is needed. Whereas previous research points to negative associations between lowered belonging and problematic alcohol use, the present study's results suggest that there may be differential associations between types of drinking behaviors. That is, lowered belonging may be associated with *less* risky drinking, but *more* alcohol-related problems. The context in which stigmatized college students drink may be related to differing relations between belonging and drinking: risky drinking may be more likely in the context of social settings (e.g., drinking games that require rapid consumption of alcohol within short periods of time), whereas drinking that lends to other forms of alcohol consequences could result from either isolated or social drinking, and thus may associate with lowered belonging. As such, future research should explicitly examine whether the context in which students from different stigmatized groups participate in problematic drinking relates to a sense of belonging. For instance, a daily diary study among college students with various stigmatized identities could examine when and how these students drink and their sense of belonging before and after drinking-related events.

Given oppression exists at the internal, individual, and structural level, future work should consider extending findings to other dimensions of stigma, such as interpersonal and institutional discrimination. Examining the impact of different policies or programs at the university, county, or state level on multiply-stigmatized students would be fruitful. For instance, college campuses with a greater number of policies and resources affirming the inclusion of sexual and gender minorities were shown to be associated directly with lower reported discrimination,

less distress, and higher self-acceptance among LGBTQ students (Woodford et al., 2018). However, student organizations and networks are often based on single stigmatized identities (e.g., women in STEM, LGBTQ groups, and first-generation college students), which only address a single axis of identity (Dennissen et al., 2020). As such, organizations focused on gender or sexuality, for instance, may render students who are exposed to racist heterosexism invisible and unsupported. Given that a primary goal of such organizations is to support belonging and resources for coping with stress, colleges should consider how students exposed to stigma beyond one specific stigmatized identity may need additional supports or unique communities. For instance, extending previous work of Woodford et al. (2018), future research could examine the impact of belonging to student organizations that center students with more than one stigmatized identity (e.g., women of color in STEM) on minority stress and subsequent problematic alcohol use. Given differences found in belongingness among racially stigmatized students in four-year versus two-year universities (Gopalan & Brady, 2020), researchers could also examine whether problematic drinking among multiply-stigmatized students differ depending on the type of university. Specifically examining what initiatives or factors foster belongingness within two-year institutions could also provide valuable insights for supporting belonging among stigmatized students at four-year universities. Doing so could further our understanding of the institutional factors related to belongingness and more adaptive health behaviors among minoritized students.

Implications for Health Behavior Research

We extend the literature by examining the longitudinal relationship between additive minority stress (both general and unique to intersectional oppression) associated with exposure to multiple forms of oppression on problematic drinking among college students. Furthermore, we test whether that link can be explained by lower belongingness, and higher drinking to cope motives. As expected, a greater number of stigmatized identities were associated with higher minority stress (discrimination, stereotype concerns, and invisibility). This finding underscores that the experiences of minority stress vary as students are subjected to multiple forms of oppression. Given the implications of stigma on health behaviors (Pascoe & Richman, 2009), understanding the extent to which health behaviors may differ among multiply-versus singly stigmatized students is critical to supporting adaptive outcomes among our stigmatized students more broadly. Furthermore, as expected, when accounted together, higher coping motives explained the relation between higher minority stress and future risky, problem drinking. The implication of that finding suggests that in order to reduce problematic alcohol use, college administrators and health behavior practitioners should consider mitigating minority stressors on their campuses and introducing alternative coping strategies for students facing stigma. Finally, mediation pathways through belongingness were mixed. Belonging may be an adaptive process for reducing problem drinking, but given the social nature of drinking in colleges, belonging or fitting in that context may lead to riskier drinking. Specifically, given the differential implications of belonging and the type of drinking behavior, it will be important for practitioners to

consider the nuances of how social aspects of drinking may or may not be an adaptive pathway to belonging. Taken together, given these mixed findings, future health behavior researchers should explore how underlying mechanisms may portend different alcohol-related behaviors in the discrimination-health link.

Discussion Questions

The present study applied an additive intersectional approach to understand minority stress experiences of multiply-stigmatized college students. How might health behavior researchers use the intersectional approach to address health disparities?

In this study, we found the relationship between belonging differed based on the problematic alcohol use. Specifically, belonging associates with less future problem drinking, but more risky drinking (consuming large amounts of alcohol during a drinking event). Given the social nature of drinking on college campuses, how might belonging explain different types of alcohol use, and how might health behaviorists try to address this?

Ethical Approval

Institutional Review Board (IRB) approval was obtained prior to data collection.

Conflict of Interests

The authors have no competing interests to declare.

References

Allen, K.-A., Kern, M. L., Rozek, C. S., McInerney, D. M., & Slavich, G. M. (2021). Belonging: A review of

conceptual issues, an integrative framework, and directions for future research. *Australian Journal of Psychology*, 73(1), 87-102.

<https://doi.org/10.1080/00049530.2021.1883409>

Asher, S. R., & Weeks, M. S. (2013). Loneliness and belongingness in the college years. In R. J. Coplan & J. C. Bowker (Eds.), *The handbook of solitude* (pp. 283-301). Wiley.
<https://doi.org/10.1002/9781118427378.ch16>

Bauer, G. R., Churchill, S. M., Mahendran, M., Walwyn, C., Lizotte, D., & Villa-Rueda, A. A. (2021). Intersectionality in quantitative research: A systematic review of its emergence and applications of theory and methods. *SSM - Population Health*, 14, 100798.
<https://doi.org/10.1016/j.ssmph.2021.100798>

Beale, F. (1970). Double jeopardy: To be black and female. In T. Cade Bambara, *Black women: An anthology*, (pp. 90-100). New American Library.

Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. *Social Forces*, 69(2), 479.
<https://doi.org/10.2307/2579670>

Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *SAGE Journals*,
<https://doi.org/10.1177/0049124192021002005>

Cerezo, A., & Ramirez, A. (2021). Perceived discrimination, alcohol use disorder and alcohol-related problems in sexual minority women of color. *Journal of Social Service Research*, 47(1), 33-46.
<https://doi.org/10.1080/01488376.2019.1710657>

Cerezo, A., Williams, C., Cummings, M., Ching, D., & Holmes, M. (2020). Minority stress and drinking: Connecting

- race, gender identity and sexual orientation. *Counseling Psychologist*, 48(2), 277-303.
<https://doi.org/10.1177/0011000019887493>
- Cole, E. R. (2009). Intersectionality and research in psychology. *American Psychologist*, 64(3), 170-180.
<https://doi.org/10.1037/a0014564>
- Combahee River Collective. (1995). Combahee River Collective statement. In B. Guy-Sheftall, *Words of fire: An anthology of African-American feminist thought* (pp. 232-240). New York: New Press. (Original work published 1977)
- Cooper, M. L. (1994). Motivations for alcohol use among adolescents: Development and validation of a four-factor model. *Psychological Assessment*, 6(2), 117-128.
<https://doi.org/10.1037/1040-3590.6.2.117>
- Cooper, M. L., Frone, M. R., Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. *Journal of Personality and Social Psychology*, 69(5), 990-1005.
<https://doi.org/10.1037/0022-3514.69.5.990>
- Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, 43(6), 1241-1299.
<https://doi.org/10.2307/1229039>
- Crocker, J., Major, B., & Steele, C. (1998). Social stigma. In S. Fiske, D. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (Vol 2, pp. 504-553). New York, NY: Wiley.
- Dennissen, M., Benschop, Y., & van den Brink, M. (2020). Rethinking diversity management: An intersectional analysis of diversity networks. *Organization Studies*, 41(2), 219-240.
<https://doi.org/10.1177/0170840618800103>
- Dowd, J. J., & Bengtson, V. L. (1978). Aging in minority populations: An examination of the double jeopardy hypothesis. *Journal of Gerontology*, 33(3), 427-436.
<https://doi.org/10.1093/geronj/33.3.427>
- English, D., Rendina, H. J., & Parsons, J. T. (2018). The effects of intersecting stigma: A longitudinal examination of minority stress, mental health, and substance use among black, Latino, and multiracial gay and bisexual men. *Psychology of Violence*, 8(6), 669-679.
<https://doi.org/10.1037/vio0000218>
- Gambles, N., Porcellato, L., Fleming, K. M., & Quigg, Z. (2022). "If you don't drink at university, you're going to struggle to make friends:" Prospective students' perceptions around alcohol use at universities in the United Kingdom. *Substance Use & Misuse*, 57(2), 249-255.
<https://doi.org/10.1080/10826084.2021.2002902>
- Gopalan, M., & Brady, S. T. (2020). College students' sense of belonging: A national perspective. *Educational Researcher*, 49(2), 134-137.
<https://doi.org/10.3102/0013189X19897622>
- Grollman, E. A. (2014). Multiple disadvantaged statuses and health: The role of multiple forms of discrimination. *Journal of Health and Social Behavior*, 55(1), 3-19.
<https://doi.org/10.1177/0022146514521215>
- Hamilton, H. R., & Dehart, T. (2019). Needs and norms: Testing the effects of negative interpersonal interactions, the need to belong, and perceived norms on alcohol consumption. *Journal of Studies on Alcohol and Drugs*, 80(3), 340-348.
<https://doi.org/10.15288/jsad.2019.80.340>

- Hatzenbuehler, M. L. (2009). How does sexual minority stigma “get under the skin”? A psychological mediation framework. *Psychological Bulletin*, *135*(5), 707-730.
<https://doi.org/10.1037/a0016441>
- Hatzenbuehler, M. L., Corbin, W. R., & Fromme, K. (2011). Discrimination and alcohol-related problems among college students: A prospective examination of mediating effects. *Drug and Alcohol Dependence*, *115*(3), 213-220.
<https://doi.org/10.1016/j.drugalcdep.2010.11.002>
- Hicks, T. A., Chartier, K. G., Buckley, T. D., Reese, D., Working Group, T. S. F. S., Vassileva, J., ... & Moreno, O. (2022). Divergent changes: abstinence and higher-frequency substance use increase among racial/ethnic minority young adults during the COVID-19 global pandemic. *American Journal of Drug and Alcohol Abuse*, *48*(1), 88-99.
<https://doi.org/10.1080/00952990.2021.1995401>
- Hodgkins, M. B. (2015). *The importance of fitting in: Drinker status, social inclusion, and well-being in college students* [Colby College].
<https://digitalcommons.colby.edu/honorsthesis/788>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1-55.
<https://doi.org/10.1080/10705519909540118>
- Kenny, D. (2015). SEM: *Measuring model fit*.
<http://www.davidakenny.net/cm/fit.htm>.
- Lewis, R. J., Mason, T. B., Winstead, B. A., Gaskins, M., & Irons, L. B. (2016). Pathways to hazardous drinking among racially and socioeconomically diverse lesbian women: Sexual minority stress, rumination, social isolation, and drinking to cope. *Psychology of Women Quarterly*, *40*(4), 564-581.
<https://doi.org/10.1177/0361684316662603>
- Lewis, R. J., Winstead, B. A., Lau-Barraco, C., & Mason, T. B. (2017). Social factors linking stigma-related stress with alcohol use among lesbians. *Journal of Social Issues*, *73*(3), 545-562.
<https://doi.org/10.1111/josi.12231>
- Martens, M. P., Neighbors, C., Lewis, M. A., Lee, C. M., Oster-Aaland, L., & Larimer, M. E. (2008). The roles of negative affect and coping motives in the relationship between alcohol use and alcohol-related problems among college students. *Journal of Studies on Alcohol and Drugs*, *69*(3), 412-419.
<https://doi.org/10.15288/jsad.2008.69.412>
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*(5), 674-697.
<https://doi.org/10.1037/0033-2909.129.5.674>
- Murdock-Perriera, L. A., Boucher, K. L., Carter, E. R., & Murphy, M. C. (2019). Places of belonging: Person- and place-focused interventions to support belonging in college. In M. B. Paulsen & L. W. Perna (Eds.), *Higher education: Handbook of theory and research* (Vol. 34, pp. 291-323). Springer International Publishing. https://doi.org/10.1007/978-3-030-03457-3_7
- Muthén, L. K., & Muthén, B. O. (1998). *Mplus user's guide* (7th ed.). Muthén & Muthén.
- Napoli, M., Marsiglia, F. F., & Kulis, S. (2003). Sense of belonging in school as a protective factor against drug abuse among Native American urban adolescents. *Journal of Social Work*

- Practice in the Addictions*, 3(2), 25-41.
https://doi.org/10.1300/J160v03n02_03
- Olmstead, S., Anders, K., Clemmons, D., & Davis, K. (2019). First-semester college students' perceptions of and expectations for involvement in the college drinking culture. *Journal of The First-Year Experience & Students in Transition*, 31(1), 51-67.
- Pascoe, E. A., & Richman, L. S., (2009). Perceived discrimination and health: a meta-analytic review. *Psychological Bulletin*, 135(4), 531.
<https://doi.org/10.1037/a0016059>.
- Reid, L. D., & Hsu, C. L. (2012). Social status, binge drinking, and social satisfaction Among college students. American Sociological Association Annual Meeting, Denver, CO.
http://image.guardian.co.uk/sys-files/Guardian/documents/2012/08/20/A_M_2012_Hsu_Study.pdf
- Remedios, J., & Snyder, S. (2018). Intersectional oppression: Multiple stigmatized identities and perceptions of invisibility, discrimination, and stereotyping. *Journal of Social Issues*, 74, 265-281.
<https://doi.org/10.1111/josi.12268>
- Rostosky, S. S., Owens, G. P., Zimmerman, R. S., & Riggle, E. D. B. (2003). Associations among sexual attraction status, school belonging, and alcohol and marijuana use in rural high school students. *Journal of Adolescence*, 26(6), 741-751.
<https://doi.org/10.1016/j.adolescence.2003.09.002>
- Vu, M., Li, J., Haardörfer, R., Windle, M., & Berg, C. J. (2019). Mental health and substance use among women and men at the intersections of identities and experiences of discrimination: Insights from the intersectionality framework. *BMC Public Health*, 19(1), 1-13.
<https://doi.org/10.1186/s12889-019-6430-0>
- Wilson, L. C., & Liss, M. (2022). Safety and belonging as explanations for mental health disparities among sexual minority college students. *Psychology of Sexual Orientation and Gender Diversity*, 9(1), 110. <https://doi.org/10.1037/sgd0000421>.
- White, A., & Hingson, R. (2013). The burden of alcohol use: Excessive alcohol consumption and related consequences among college students. *Alcohol Research: Current Reviews*, 35(2), 201-218.
- White, H. R., & Labouvie, E. W. (1989). Towards the assessment of adolescent problem drinking. *Journal of Studies on Alcohol*, 50(1), 30-37.
<https://doi.org/10.15288/jsa.1989.50.30>
- Woodford, M. R., Kulick, A., Garvey, J. C., Sinco, B. R., & Hong, J. S. (2018). LGBTQ policies and resources on campus and the experiences and psychological well-being of sexual minority college students: Advancing research on structural inclusion. *Psychology of Sexual Orientation and Gender Diversity*, 5(4), 445-456.
<https://doi.org/10.1037/sgd0000289>