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Nonmonosexual Stress and Dimensions of Health: Within-Group Variation by Sexual, Gender, and Racial/Ethnic Identities

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Nonmonosexual individuals (i.e., people with attractions to more than 1 gender) are at heightened risk for numerous negative health outcomes compared to individuals with exclusive attractions to either same-gender or different-gender individuals. This increased risk has been linked to the unique stress nonmonosexual individuals experience due to the stigmatization of nonmonosexuality (i.e., monosexism). However, research with this population has rarely considered multiple intersecting stigmatized identities (e.g., gender, race/ethnicity) and has focused predominately on internalizing symptoms (i.e., anxiety/depression). The current study aimed to expand this research by taking an intersectional approach to examining (a) associations between three nonmonosexual stressors (enacted, internalized, and anticipated monosexism) and 3 dimensions of health (i.e., physical health, internalizing symptoms, substance use and problems); and (b) differences in these associations and rates of nonmonosexual stressors and health problems by sexual, gender, and racial/ethnic identities among a diverse sample of 360 nonmonosexual individuals assigned female at birth. Results indicated that all three nonmonosexual stressors were associated with the 3 dimensions of health for the sample as a whole. There were several notable moderators of these associations. First, enacted monosexism was more strongly associated with physical health and substance use/problems for gender minorities compared to cisgender women. Second, several interactions indicated that nonmonosexual stressors were associated with poorer health for White, but not Black or Latinx, individuals. These findings highlight the importance of attending to within-group heterogeneity to understand and address the range of health disparities affecting nonmonosexual individuals.

Public Significance Statement

This study advances our understanding of the influence of stigma on the health of nonmonosexual individuals (i.e., people with attractions to more than one gender). While all types of nonmonosexual stressors were associated with worse health outcomes, experiences of bias had a stronger impact on the health of transgender individuals compared to cisgender women, and people of color appeared to be more resilient in the face of bias than their White peers. These findings highlight the importance of attending to multiple stigmatized identities in order to understand the health disparities affecting marginalized populations.

Keywords: bisexual, nonmonosexual, minority stress, physical health, intersectionality

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als), including poor physical health (Dyar et al., 2018), anxiety and depression (Bostwick, Boyd, Hughes, & McCabe, 2010; Ross et al., 2017), and substance use and related problems (McCabe, Hughes, Bostwick, West, & Boyd, 2009). Due to the stigmatization of multigender attractions, nonmonosexual individuals experience unique stressors, referred to as nonmonosexual stressors (Brewster & Moradi, 2010; Mohr & Rochlen, 1999). Research suggests that nonmonosexual stressors may explain the health disparities affecting nonmonosexual populations (Dyar & London, 2018; Katz-Wise, Mereish, & Woulfe, 2017; Molina et al., 2015), establishing an important foundation for research on nonmonosexual stress and health.

However, existing research has focused almost exclusively on one set of health outcomes—anxiety and depression (i.e., internalizing) symptoms—and very few studies have examined associations between nonmonosexual stressors and physical health or substance use. Additionally, research has rarely utilized samples that are large and diverse enough to examine within-group variation in associations between nonmonosexual stressors and health. The current study aimed to expand research in this area by using an intersectional approach to examine: (a) within-group differences in rates of nonmonosexual stressors and three dimensions of health (physical health, internalizing symptoms, substance use and related problems) by sexual, gender, and racial/ethnic identities; (b) associations between nonmonosexual stressors and health; and (c) within-group variation in these associations in a diverse sample of nonmonosexual individuals assigned female at birth (including cisgender women, transgender men, and nonbinary individuals).

Nonmonosexual Stressors and Health

While all sexual minority individuals are at risk for experiencing chronic stressors due to the stigmatization of nonheterosexuality (Meyer, 2003), research indicates that the stigmatization of nonmonosexuality and resulting stressors are qualitatively distinct. Although both types of stigma include hostility toward the stigmatized group (sexual minority or nonmonosexual individuals), nonmonosexual stigma also includes two unique stereotypes (Brewster & Moradi, 2010; Mohr & Rochlen, 1999). Specifically, nonmonosexual individuals are stereotyped as uncertain about their sexual identities (e.g., experimenting with their sexuality, transitioning to a lesbian/gay identity) as well as sexually irresponsible (e.g., obsessed with sex, likely to cheat in relationships; Brewster & Moradi, 2010; Mohr & Rochlen, 1999). Additionally, nonmonosexual stigma is present in both heterosexual and lesbian/gay populations, whereas stigma against sexual minority individuals is generally understood to be single-sourced, coming from heterosexual individuals (Brewster & Moradi, 2010; Mohr & Rochlen, 1999).

A growing body of evidence indicates that nonmonosexual stressors are associated with internalizing symptoms. This research has predominately focused on enacted monosexism (i.e., biased treatment by others due to the stigmatization of nonmonosexuality), demonstrating that greater enacted monosexism is associated with more internalizing symptoms (e.g., Dyar, Feinstein, & Davila, 2019; Lambe, Cerezo, & O'Shaughnessy, 2017; MacLeod, Bauer, Robinson, MacKay, & Ross, 2015; Paul, Smith, Mohr, & Ross, 2014). While fewer studies have examined other nonmonosexual stressors, such as the internalization and anticipation of monosex-

ism, they have also been linked to internalizing symptoms (Brewster, Moradi, Deblaere, & Velez, 2013; Dyar & London, 2018; Lambe et al., 2017; Paul et al., 2014). While some of the samples included in these studies have been diverse in sex, gender, and the specific sexual identity labels used by participants (e.g., Brewster et al., 2013; Dyar et al., 2019), others have focused exclusively on cisgender women or people who specifically identify as bisexual (e.g., Dyar & London, 2018; Paul et al., 2014). Further, these samples have had limited racial/ethnic diversity (e.g., Brewster et al., 2013; Dyar et al., 2019; Dyar & London, 2018; Lambe et al., 2017; MacLeod et al., 2015; Paul et al., 2014). Thus, it is important to examine the impact of nonmonosexual stressors on mental health among racially/ethnically diverse samples to build a more comprehensive understanding of these associations.

The associations between nonmonosexual stressors and substance use and physical health have received substantially less attention. The limited research on nonmonosexual stressors and substance use has focused on alcohol and cannabis use/problems and results have been mixed. In a sample of cisgender women who identified as bisexual, Molina et al. (2015) found that enacted monosexism was associated with more binge drinking and alcohol use problems, while internalized monosexism was only associated with alcohol use problems. In contrast, Robinson, Sanches, and MacLeod (2016) did not find significant associations between enacted or internalized monosexism and cannabis use in a sample of nonmonosexual cisgender women. Research on associations between nonmonosexual stressors and physical health is even sparser. Katz-Wise et al. (2017) demonstrated that experiencing more enacted monosexism was associated with poorer physical health in a sample of nonmonosexual cisgender men, cisgender women, and gender minority individuals, but we are not aware of any published studies examining associations between internalized or anticipated monosexism and physical health. Additionally, Smith, Mohr, and Ross (2018) found that among bisexual men, experiencing more enacted monosexism, internalized monosexism, and anticipated monosexism was associated with more sexual compulsivity—a pattern of excessive sexual behaviors and cognitions that impair functioning and is associated with an increased risk for sexually transmitted infections. Given the limited literature in this area, further research is needed to clarify the associations between nonmonosexual stressors and diverse health outcomes, including substance use/problems and physical health.

Intersectionality: Within-Group Diversity Among Nonmonosexual Individuals

An intersectional framework is critical to developing a nuanced understanding of the experiences of diverse sexual minority populations. Intersectionality theory arose from the work of Black feminist scholars and activists (Bowleg, 2012; Crenshaw, 1994) to describe the ways in which multiple social identities interact to shape individuals' experiences and how holding multiple marginalized identities impacts individuals' experiences of discrimination and stigmatization (Bowleg, 2012; Crenshaw, 1994). That said, intersectionality theory offers competing hypotheses related to whether holding multiple marginalized identities confers greater risk or resilience. The greater risk perspective posits that experiencing stigma based on multiple marginalized identities can overburden individuals' coping resources, placing them at heightened

risk for poor health and amplifying the impact of stressors on health (e.g., Greene, 1997; King, 2016). In contrast, the greater resilience perspective posits that individuals with multiple stigmatized identities have unique resources and resilience for coping with stigma, which may reduce the impact of stressors on health and lead to similar or better health outcomes compared to those with a single stigmatized identity (see Moradi et al., 2010). There are a number of marginalized identities that could interact to affect the experiences of nonmonosexual individuals. In this study, we focus on race/ethnicity and gender identity.

We are not aware of any studies that have specifically examined differences in the experiences of nonmonosexual individuals by race/ethnicity. However, research examining the experiences of sexual minority people of color (POC) has provided more support for the greater resilience perspective than for the greater risk perspective. Studies have generally found similar or lower rates of alcohol and illicit substance use among sexual minority POC compared with White sexual minority individuals (e.g., Balsam et al., 2015; Drabble et al., 2018; Hughes et al., 2006; Kertzner, Meyer, Frost, & Stirratt, 2009; Newcomb, Birkett, Corliss, & Mustanski, 2014; Talley, Hughes, Aranda, Birkett, & Marshal, 2014), with few exceptions (e.g., Mereish & Bradford, 2014). Research also generally indicates that sexual minority POC experience similar or lower levels of internalizing symptoms compared to White sexual minority individuals (Balsam, Lehavot, Beadnell, & Circo, 2010; Balsam et al., 2015; Bostwick, Hughes, & Johnson, 2005; Burns, Ryan, Garofalo, Newcomb, & Mustanski, 2015; Kertzner et al., 2009; Marshal et al., 2012; Meyer, Dietrich, & Schwartz, 2008), with a few exceptions (Kim & Fredriksen-Goldsen, 2012; Ryan, Huebner, Diaz, & Sanchez, 2009). Very few studies have examined racial/ethnic differences in associations between sexual minority stigma and health. However, at least one study found that associations of enacted and internalized stigma with internalizing symptoms were similar for White and POC sexual minority individuals (e.g., Velez, Watson, Cox, & Flores, 2017), which contradicts the greater risk perspective. Given the dearth of research on within-group differences among nonmonosexual individuals by race/ethnicity, additional research is needed to test the greater risk and resilience perspectives among nonmonosexual individuals.

Limited research has examined differences by gender identity among nonmonosexual individuals. Two studies comparing nonmonosexual cisgender women and gender minorities found somewhat mixed results. Both found that cisgender women and gender minorities experienced more enacted monosexism compared with cisgender men (Dyar et al., 2019; Katz-Wise et al., 2017). However, one found similar levels of enacted monosexism for cisgender women and gender minorities (Katz-Wise et al., 2017), while the other found that gender minorities experienced more enacted monosexism than cisgender women (Dyar et al., 2019). Findings related to differences in health between nonmonosexual gender minorities and cisgender individuals have also been somewhat mixed. Katz-Wise and colleagues (2017) found that nonmonosexual gender minorities experienced poorer physical health compared with nonmonosexual cisgender men and women, while Bauer, Flanders, MacLeod, and Ross (2016) did not find gender differences in nonmonosexual individuals' likelihood of having comorbid mental health and substance use problems. The only study of which we are aware that has examined differences in the

association between nonmonosexual stressors and health outcomes by gender identity found that experiencing more enacted monosexism was associated with poorer physical health for both nonmonosexual cisgender women and gender minorities, but the association was stronger for gender minorities (Katz-Wise et al., 2017). Overall, these results provide slightly more support for the greater risk perspective than the greater resilience perspective, but the limited number of studies and their mixed findings highlight the need for additional research.

Another potential source of within-group variation in the experiences of nonmonosexual individuals is the specific label they use to describe their sexual identity. Nonmonosexual individuals identify in a variety of ways, including as bisexual, pansexual, queer, and with other sexual identity labels (Galupo, Mitchell, & Davis, 2015; Mitchell, Davis, & Galupo, 2014), and nonmonosexual individuals may be treated differently based on how they self-identify (Mitchell et al., 2014). Recent research has begun to investigate whether nonmonosexual stressors and health differ by sexual identity and findings have been mixed. Some studies have found that bisexual-identified individuals experience more enacted monosexism (particularly from lesbian/gay individuals; Mitchell et al., 2014) and have a higher burden of comorbid mental health and substance use problems (Bauer et al., 2016) than nonmonosexual individuals who identify in other ways. However, at least one study did not find differences in the frequency of enacted monosexism by sexual identity in a sample of nonmonosexual individuals (Dyar et al., 2019). Research has yet to examine differences in internalized and anticipated monosexism or associations between nonmonosexual stressors and health by sexual identity. Further research is needed to advance our understanding of how self-identification may affect the experiences of nonmonosexual individuals.

Current Study

The current study aimed to expand our understanding of nonmonosexual stress and health by taking an intersectional approach to examining associations between three nonmonosexual stressors (enacted, internalized, anticipated monosexism) and three dimensions of health (internalizing symptoms, substance use and problems, physical health) among a diverse sample of nonmonosexual individuals assigned female at birth. To accomplish this goal, we examined: (a) associations among nonmonosexual stressors and health in our full sample; (b) differences in levels of nonmonosexual stressors and health by sexual, gender, and racial/ethnic identity; and (c) moderation of associations between nonmonosexual stressors and health by sexual, gender, and racial/ethnic identity. We utilized a latent variable approach to modeling the three dimensions of health, which enabled us to conduct more parsimonious analyses that accounted for the shared variance among individual measures of related health domains (Kline, 2015). Given limited and often mixed evidence for within-group differences in nonmonosexual stress and health by sexual, gender, and racial/ethnic identities, and the existence of two competing perspectives on intersectionality (i.e., greater risk vs. greater resilience), we did not make specific hypotheses about the directionality of differences in levels of nonmonosexual stressors and health or associations between nonmonosexual stressors and health.

Method

Participants and Procedure

FAB400 is an ongoing cohort study of 488 young sexual and gender minorities assigned female at birth (SGM-AFAB), focused on their health, development, and intimate relationships. FAB400 employs a merged cohort accelerated longitudinal design (Galbraith, Bowden, & Mander, 2017) and includes two cohorts: (a) a late adolescent cohort recruited for FAB400 in 2016–2017 ($N = 400$; 16- to 20-years-old at baseline); and (b) a young adult cohort comprised of SGM-AFAB participants from Project Q2, a longitudinal study of SGM youth that began in 2007 ($N = 88$; 23- to 32-years-old at the FAB400 baseline assessment; Mustanski, Garofalo, & Emerson, 2010). Inclusion criteria for both projects were identical, requiring participants to be 16- to 20-years-old when they enrolled, speak English, live in the Chicago area, and either identify with a sexual or gender minority label, report same-sex attractions, or report lifetime same-sex sexual behavior. To enroll in FAB400, participants were also required to be female-assigned at birth. Each cohort was recruited using an incentivized respondent-driven sampling approach, in which participants were recruited directly (45% of the sample) from various venues (e.g., SGM community organizations) and online social media advertisements, and then those enrolled participants could refer up to five peers to the study (55% of the sample). Participants were paid \$10 for each peer they recruited into the cohort.

In 2016–2017, all 488 participants completed the FAB400 baseline assessment, which was followed by a subsequent assessment 6 months later (completed by 471 participants; 96.5% retention). Participants were paid \$50 for each assessment, which included self-report measures using computer-assisted self-interview. The study protocol was approved by the Institutional Review Board (IRB) at Northwestern University with a waiver of parental permission for participants under 18 years of age under 45 CFR 46, 408(c). Participants provided written informed consent and mechanisms to safeguard participant confidentiality were used (i.e., a federal certificate of confidentiality). For additional detail about the study design, see Whitton, Dyar, Mustanski, and Newcomb (2019).

The current analyses used cross-sectional data from the 6-month follow-up assessment. Baseline data were not included because nonmonosexual stressors were not assessed at baseline. The analytic sample included all participants who reported attractions to men and women and/or self-identified as bisexual or pansexual ($n = 360$). All participants reported attractions to men and women, with the exception of three participants who reported that they were not physically attracted to anyone and self-identified as bisexual or pansexual. Demographic information about the analytic sample ($n = 360$) is presented in Table 1. It was comprised predominately of cisgender women, with a sizable subsample of gender minority individuals assigned female at birth. Nearly half of the sample identified as bisexual and the sample was racially/ethnically diverse.

Measures

Demographics.

Sexual identity. Participants were asked, “Which of the following commonly used terms best describes your sexual orienta-

Table 1
Demographics of Analytic Sample ($N = 360$)

Demographic variable	<i>n</i>	%
Cohort		
Late adolescent cohort	312	86.7%
Young adult cohort	48	13.3%
Race/Ethnicity		
White	99	27.5%
Black	115	31.9%
Latinx	92	25.6%
Asian	18	5.0%
Multiracial	34	9.4%
Other Race/Ethnicity	2	.5%
Gender identity		
Cisgender women	257	71.4%
Transgender or male	32	8.9%
Genderqueer/Nonbinary	71	19.7%
Sexual identity		
Bisexual	170	47.2%
Queer	71	19.7%
Pansexual	73	20.3%
Other sexual identity	46	13.8%
Age (<i>M, SD</i>)	20.20 (3.33)	

tion?” with the options: gay, lesbian, bisexual, queer, unsure/questioning, straight/heterosexual, pansexual, asexual, and not listed (please specify). For mean difference analyses, sexual identity was recoded into four categories: bisexual, queer, pansexual, and other identities. To provide adequate power for moderation analyses, sexual identity was recoded into bisexual (47.2%) and other identity (52.8%) as in previous research (Dyar et al., 2019; Mitchell et al., 2014).

Gender identity. Participants responded to the question “What is your current gender identity?” with the following options: male, female, transgender, gender nonconforming, genderqueer, nonbinary, and not listed (please specify). Gender identity was used to assign participants to one of two groups: cisgender women (self-identified as female) and gender minorities (identified with any other gender identity).

Race/ethnicity. Participants were asked to select the category that best described their race: American Indian or Alaskan Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, or Other (please specify); they could select more than one response. Participants also indicated whether they identified as Hispanic or Latino/Latina/Latinx, defined as “a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.” As recommended by the National Institutes of Health (2001), responses to these two items were used to categorize participants by race/ethnicity. All those who selected a Latinx ethnicity were classified as Latinx regardless of selected race. All others were classified based on the race they selected: Black, White, or Other. White was used as the reference group in subsequent analyses to allow for the testing of hypothesized differences/similarities between individuals from marginalized racial/ethnic groups and those with unmarginalized racial/ethnic identities (i.e., non-Latinx White participants).

Nonmonosexual stressors. Prior to assessing nonmonosexual stressors, a definition of the term nonmonosexual was provided: “Nonmonosexual is a broad term that describes all individuals who

report being physically and/or romantically attracted to individuals of more than one gender, including individuals who identify with various identity labels (e.g., bisexual, pansexual, polysexual, omnisequal).” For these and all subsequent measures (with the exception of internalizing symptoms), participants were asked to answer questions thinking about their experiences over the past 6 months. To enhance recall, participants were asked to report a specific event that occurred 6 months previously at the beginning of the survey and this event was piped into the instructions for measures asking about the past 6 months. For example, participants were asked to answer questions thinking about “the past 6 months, the time period between today and [date 6 months ago], or around [event that occurred 6 months ago].”

Enacted monosexism was assessed using the Brief Antibisexual Experiences Scale (Brewster & Moradi, 2010; Dyar et al., 2019). This is an eight-item measure that assesses three types of monosexist experiences, including those arising from perceptions that nonmonosexuality is not a stable sexual orientation (e.g., “People have not taken my sexual orientation seriously because I am nonmonosexual”; three items), stereotypes that nonmonosexual individuals are promiscuous (e.g., “People have treated me as if I am obsessed with sex because I am nonmonosexual”; two items), and hostility toward nonmonosexual individuals (e.g., “Others have acted uncomfortable around me because of my nonmonosexuality”; three items) from both heterosexual and lesbian/gay individuals. The word “bisexual” was replaced with “nonmonosexual” throughout, a psychometrically validated modification (Dyar et al., 2019). Participants were asked to indicate how frequently they experienced each type of enacted monosexism from heterosexual individuals and from lesbian/gay individuals on a scale of 1 (*never*) to 6 (*almost all of the time*). A not applicable option was provided for participants to use if no heterosexual or lesbian/gay individuals knew about their nonmonosexuality. A total score was calculated by averaging responses to all items (excluding not applicable responses; $\alpha = .90$).

Internalized monosexism and *anticipated monosexism* were measured using two subscales of the Bisexual Identity Inventory (Paul et al., 2014). Each subscale is comprised of five items and demonstrated acceptable internal consistency ($\alpha = .70-.81$). Example items for the internalized and anticipated monosexism scales are, respectively, “My life would be better if I were not nonmonosexual” and “People probably do not take me seriously when I tell them I’m nonmonosexual.” Participants respond to items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*) and items were averaged to create subscale scores. The word “bisexual” was replaced with “nonmonosexual” throughout, a psychometrically validated modification (Dyar et al., 2019).

Physical health. The Patient-Reported Outcomes Measurement Information System (PROMIS) global health–physical health subscale (four items; Hays, Bjorner, Revicki, Spritzer, & Cella, 2009) was used to assess global physical health. This subscale includes items assessing physical functioning, fatigue, pain, and self-reported physical health. Response options differed across items. For example, the item “How would you rate your physical health?” is measured on a scale of 1 (*poor*) to 5 (*excellent*). Items were summed ($\alpha = .66$). This measure was developed using the rigorous psychometric methods instituted by PROMIS and has demonstrated strong internal consistency ($\alpha = .81$) and validity (e.g., high correlations with other established measures of physical

health, like the SF-36) in a large sample with demographics matching the 2000 U.S. census (Cella et al., 2010; Hays et al., 2009).

Participants were also provided with a list of *physical health conditions* and asked to indicate which conditions they had experienced in the past 6 months. This list included: headaches or migraines, insomnia, gastrointestinal problems, skin conditions, gynecological disorders, asthma, and allergies. The specific conditions included were derived from the National Epidemiologic Study of Alcohol and Related Conditions Wave 2 (El-Gabalawy, Katz, & Sareen, 2010) and the annual Swedish National Institute of Public Health Survey (Bränström, Hatzenbuehler, & Pachankis, 2016).

Experiences with *acute infections* were also assessed using the item: “During the past 6 months, how many days have you had cold or flu-like symptoms, such as a sore throat, runny nose, cough, vomiting, nausea, or fever.” Responses could range from 0 to 180 days. This item was adapted from Wave 4 of the National Longitudinal Study of Adolescent Health by changing the time-frame of the original question from the past 2 weeks to the past 6 months and changing the responses from yes/no to number of days.

Internalizing symptoms. Symptoms of anxiety and depression were measured by the PROMIS Anxiety and Depression Short Forms 8a (Pilkonis et al., 2011). Each scale includes eight items (e.g., “I felt fearful” and “I felt worthless” respectively; $\alpha = .94-.95$) measured on a scale of 1 (*never*) to 5 (*always*). These measures were developed using rigorous psychometric methodology and have demonstrated strong internal consistency ($\alpha = .93-.95$) and content validity (e.g., high correlations with other established measures of symptoms of anxiety and depression).

Substance use and related problems. The Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) was used to assess alcohol use problems in the past six months. The AUDIT includes 10 items that are rated on different scales. For example, the item “How often do you have a drink containing alcohol?” was rated on a 5-point scale (1 = *never*, 5 = *4 or more times a week*). Responses were summed ($\alpha = .77$).

The Cannabis Use Disorders Identification Test—Revised (CUDIT-R; Adamson et al., 2010) was used to assess marijuana misuse and problems in the past 6 months. The CUDIT-R includes eight items that are rated on different scales. For example, the item “How often do you use marijuana?” was rated on a 5-point scale (1 = *never*, 5 = *4 or more times a week*). Responses were summed ($\alpha = .75$).

Participants were asked to select all of the *nonmarijuana illicit substances* they used in the past 6 months including: cocaine, crack, heroin, methamphetamines, GHB, ketamine, poppers, inhalants, hallucinogens, and ecstasy. Given low rates of endorsement for specific categories of nonmarijuana illicit drugs, a single binary nonmarijuana illicit drug use variable was created. Participants who reported using any of these substances received a code of 1 and those who reported not having used any of these substances received a code of 0.

Participants were also asked about their use of prescription stimulants, painkillers, and depressants over the past 6 months (e.g., “In the past 6 months, have you used any type of prescription depressant or tranquilizer such as Ativan, Klonopin, Librium, Valium, or Xanax?”) and whether these substances were used

without a prescription (“You said that you have used prescription depressants or tranquilizers in the past 6 months. Were these prescribed to you by a health care provider?”). Participants who indicated having used any of these substances without a prescription received a code of 1 on the *prescription misuse* variable, whereas those who indicated that they had not used any of these substances or had only used them with a prescription received a code of 0.

Analytic Plan

Analyses were conducted in Mplus Version 8 using robust maximum likelihood estimation. Less than 1% of data were missing and were handled using full information maximum likelihood.

Testing for nonindependence due to respondent driven sampling (RDS). Because participants within a given recruitment chain (i.e., the set of individuals who were recruited by the same study participant) are potentially more similar to each other than to other participants, we calculated design effects for all variables included in current analyses to determine if it was necessary to account for clustering due to recruitment chain. The design effect quantifies the extent to which the sampling error deviates from what would be expected if individuals were randomly assigned to clusters. All design effects were below the recommended cutoff of 2.0 (Muthen & Satorra, 1995), indicating that the small amount of nonindependence present due to recruitment chain would have a negligible effect on the Type I error rate if clustering is not taken into account in analyses. Given this result, it was not necessary to use multilevel modeling to account for clustering due to recruitment chain.

Confirmatory factor analysis of health. Prior to testing our hypotheses, we utilized a confirmatory factor analysis (CFA) to examine a three-factor model of health problems (i.e., physical health problems, internalizing symptoms, and substance use/problems). Numerical integration was required because indicator variables (variables loading on latent factors) included count and binary variables. Absolute indicators of model fit (e.g., chi-squared goodness of fit, comparative fit index [CFI], root mean squared error of approximation [RMSEA]) are not available with numerical integration. We examined how well each indicator loaded on a latent variable using standardized factors loadings for continuous and binary indicators (using a probit link). Standardized factor loadings greater than .5 are considered strong (Comrey & Lee, 1992) and indicators with factors loadings less than .5 were dropped from the analytic model. As there is not an established approach to estimating the effect size of factor loadings for count indicators, we considered factor loadings for count indicators that were significant at $p < .001$ to load well on the latent factor. To avoid local underidentification (i.e., having too few degrees of freedom to estimate a factor loading), factor loadings for the two indicators of internalizing symptoms (anxiety and depression) were set to equality (Kline, 2015). The three-factor model of health included: physical health problems indicated by seven physical health conditions (i.e., headaches/migraines, insomnia, gastrointestinal problems, skin conditions, gynecological disorders, asthma, allergies), number of days of acute illness, and a global measure of physical health; internalizing symptoms indicated by anxiety and depression; and substance use/problems indicated by

alcohol and marijuana use problems, nonmarijuana illicit drug use, and prescription drug misuse.

Demographic differences in health and nonmonosexual stressors. Next, demographic variables were added as simultaneous predictors of the three latent health variables. This allowed for testing hypotheses about within-group differences in health among nonmonosexual individuals by age and sexual, gender, and racial/ethnic identities. A separate set of linear regressions was conducted to examine differences in nonmonosexual stressors by demographic characteristics. In these analyses, all four demographic characteristics were entered as simultaneous predictors of each nonmonosexual stressor.

Unmoderated associations between nonmonosexual stressors and health. To test hypotheses about associations between nonmonosexual stressors and health, we added nonmonosexual stressors as predictors of the three latent health outcomes. Three separate models were used to examine associations between health outcomes and nonmonosexual stressors—one for each stressor. Age, sexual identity, gender identity, and race/ethnicity were controlled for in all models. To provide standardized associations, nonmonosexual stressors were standardized and latent variable means and standard deviations were set to 0 and 1, respectively, in this and all subsequent models.

Moderated associations between nonmonosexual stressors and health. To test hypotheses about differences in associations between nonmonosexual stressors and health, we examined models with sexual identity (bisexual vs. other identity), gender identity (cisgender women vs. gender minorities), and race/ethnicity (White, Black, Latinx, and other race/ethnicity) as moderators. To limit the number of interactions examined in a single model, each stressor and moderator combination was examined separately. Age was controlled for in all models, and models examining one moderator (e.g., sexual identity) controlled for the other two moderators (e.g., gender identity and race/ethnicity).

Sexual identity and gender identity interactions were adequately powered ($> .80$) to detect moderate differences in slopes between groups (i.e., difference in slope of $r = .30$) but these analyses were underpowered to detect small to moderate differences in slopes (i.e., difference in slope of $r = .20$). Power was somewhat low for moderate differences in slopes between White and Black or Latinx groups ($\sim .60$). To balance this lower power to detect moderate interactions in this group, we noted interactions that were marginally significant with a $p < .10$, increasing power to .72 for moderation by race/ethnicity.

Results

Descriptive data for observed variables are presented in Table 2. Bivariate associations among nonmonosexual stressors and between demographic variables and nonmonosexual stressors are presented in Table 3. Nonmonosexual stressors were moderately to strongly associated with one another. There were few demographic differences in nonmonosexual stressors. White participants reported more experiences of enacted monosexism than those who identified with a race/ethnicity other than White, Black, or Latinx. Individuals who identified as bisexual reported lower internalized monosexism than those who did not identify as bisexual. As this effect was in the opposite direction as expected, we conducted a follow-up analysis to determine whether bisexual individuals dif-

Table 2
Descriptive Data for Observed Variables

Continuous variables	<i>M (SD)</i>	Range	α
Enacted monosexism	1.86 (.70)	1–5	.90
Internalized monosexism	2.33 (1.16)	1–7	.81
Anticipated monosexism	3.82 (1.24)	1–7	.70
Rarely sick	3.28 (1.16)	1–5	—
Illness recovery	3.27 (1.11)	1–5	—
PROMIS physical health	15.17 (2.26)	4–20	.66
Anxiety	19.24 (7.73)	8–40	.94
Depression	17.56 (7.79)	8–40	.95
Count variables	<i>M (SD)</i>	Range	
Days of acute illness	11.80 (15.67)	0–120	—
Alcohol use problems	3.85 (4.04)	0–40	.77
Marijuana use problems	4.92 (5.63)	0–32	.75
Endorsement			
Binary variables	<i>N</i>	%	
Headache/Migraine	245	68.1%	—
Insomnia	155	43.1%	—
Gastrointestinal problems	144	40.0%	—
Skin conditions	165	45.8%	—
Gynecological disorder	126	35.0%	—
Asthma	59	16.4%	—
Allergies	141	39.2%	—
Illicit drug use	57	15.8%	—
Prescription drug misuse	43	11.9%	—

Note. PROMIS = Patient-Reported Outcomes Measurement Information System. Cronbach's α s are presented only for measures with multiple items.

ferred from all or a subset of other-identified individuals. Results indicated that bisexual identified individuals did not differ from individuals who identified as pansexual ($b = -.16$, $SE = .11$, $p = .13$), but reported lower internalized monosexism than those who identified as queer ($b = .27$, $SE = .14$, $p = .04$) and those who identified with labels other than bisexual, queer, or pansexual ($b = .93$, $SE = .19$, $p < .001$).

Confirmatory Factor Analysis of Health

First, we tested a three-factor model of health. Two physical health conditions, allergies and asthma, were dropped from the model because they had standardized factor loadings less than .5, indicating that they did not load well on the physical health latent variable. Factor loadings for the final model are presented in Table 4. Correlations among latent health variables were in the expected direction, with physical and mental health strongly correlated, $r = .58$, $p < .001$ and substance use/problems moderately correlated with physical, $r = .36$, $p < .001$ and mental health, $r = .26$, $p < .001$.

Demographic Differences in Health

Next, we tested for demographic differences in the latent health variables (see Table 5). There were differences in all three latent health variables by age, with older participants reporting more substance use/problems and fewer physical health problems and internalizing symptoms compared with younger participants. Therefore, age

Table 3
Bivariate Associations Between Demographic Characteristics and Nonmonosexual Stressors

	Enacted monosexism	Internalized monosexism	Anticipated monosexism
Enacted monosexism	—		
Internalized monosexism	.25***	—	
Anticipated monosexism	.29***	.47***	—
Age	.05	-.02	-.11
Sexual identity: Pansexual	-.11	-.16	-.20
Sexual identity: Queer	-.08	.27*	.12
Sexual identity: Other	-.16	.93**	.26
Gender identity	.06	.07	.01
Race: Black	.01	.07	-.21
Race: Latinx	-.08	.15	.18
Race: Other identity	-.26*	.29	.04

Note. Gender identity was coded as (cisgender = 0; gender minority = 1); bisexual is the reference group for sexual identity; White is the reference group for race/ethnicity; the other race group includes individuals who identified with multiple racial/ethnic identities or who identified with labels other than Black, Latinx, or White (e.g., Asian, Pacific Islander, Native America). Age and nonmonosexual stressors were standardized prior to analyses. Given this standardization approach, associations between categorical variables (e.g., sexual identity) and nonmonosexual stressors are equivalent to Cohen's d values using the pooled standard error.

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

was included as a covariate in all subsequent analyses. Additionally, White participants reported more substance use/problems than Black and Latinx individuals.

Associations Between Nonmonosexual Stressors and Health

We then examined unmoderated associations between nonmonosexual stressors and health. Results (see Table 6) indicated

Table 4
Measurement Model of Health

Latent variable	Indicator variable	Factor loading	<i>SE</i>
Physical health problems	Headache/Migraine	.56	.07
	Insomnia	.54	.07
	Gastrointestinal problems	.71	.07
	Skin conditions	.50	.07
	Gynecological disorder	.55	.08
	Days of acute illness	1.53	.08
	PROMIS physical health	-.54	.06
Internalizing symptoms	Anxiety	.88	.03
	Depression	.88	.03
Substance use	Alcohol use problems	2.24	.09
	Marijuana use problems	2.16	.18
	Illicit drug use	.84	.06
	Prescription drug misuse	.90	.04

Note. PROMIS = Patient-Reported Outcomes Measurement Information System. Analyses were conducted using probit regression. Standardized factor loadings are presented for continuous and binary indicators (normal font). Rate ratios from negative binomial regression are presented for count indicators (bolded italics). All factors loadings were significant at $p < .001$.

Table 5
Associations Between Demographic Characteristic and Health

Demographic characteristics	Physical health problems	Internalizing symptoms	Substance use problems
Age	-.21*	-.14*	.14*
Sexual identity	-.07	.10	.10
Gender identity	.24	.10	-.04
Race: Black	-.27	-.28	-.84**
Race: Latinx	.14	-.07	-.47*
Race: Other identity	.07	-.10	-.42

Note. Sexual identity is coded as (bisexual = 0; other identity = 1); gender identity as (cisgender = 0; gender minority = 1); White is the reference group for race/ethnicity. Age, nonmonosexual stressors, and health latent variables were standardized prior to analyses. Given this standardization approach, associations between categorical variables (e.g., sexual identity) and health are equivalent to Cohen's *d* values using the pooled standard error. All demographic characteristics were entered as simultaneous predictors.

* $p < .05$. ** $p < .001$.

that experiencing higher levels of all three nonmonosexual stressors (enacted, internalized, anticipated monosexism) predicted more physical health problems, internalizing symptoms, and substance use and related problems.

Next, we tested whether these associations were moderated by sexual identity. None of the interactions were significant.

Gender identity only moderated associations between enacted monosexism with physical health problems and substance use/problems (see Figure 1). Experiencing more enacted monosexism was associated with more physical health problems ($\beta = .27$, $SE = .10$, $p = .01$) and substance use/problems ($\beta = .25$, $SE = .07$, $p < .001$) for cisgender women, but was more strongly associated with both variables among gender minorities: physical health ($\beta = .64$, $SE = .13$, $p < .001$) and substance use/problems ($\beta = .57$, $SE = .14$, $p < .001$).

Race/ethnicity also moderated several associations between stressors and health. As noted, given that we had lower power for these analyses, we examined the simple slopes for significant and marginally significant ($p < .10$) interactions (see Figure 2). White participants are the reference group for all comparisons. Experiencing more enacted monosexism was associated with poorer physical health ($\beta = .49$, $SE = .13$, $p < .001$), more internalizing symptoms ($\beta = .43$, $SE = .10$, $p < .001$), and more substance use/problems ($\beta = .44$, $SE = .11$, $p < .001$) for White participants, but was not associated with physical health ($\beta = .18$, $SE = .14$, $p = .22$) or internalizing symptoms for Black participants ($\beta = .14$, $SE = .11$, $p = .21$) or substance use/problems for Latinx participants ($\beta = -.03$, $SE = .14$, $p = .83$). Similarly, higher internalized monosexism was associated with more physical health problems ($\beta = .38$, $SE = .13$, $p = .01$) and internalizing symptoms ($\beta = .45$, $SE = .12$, $p < .001$) for White participants, but was not associated with physical health for Black participants ($\beta = .05$, $SE = .12$, $p = .66$) or with internalizing symptoms for Black ($\beta = .16$, $SE = .11$, $p = .13$) or Latinx participants ($\beta = .13$, $SE = .11$, $p = .25$). Additionally, anticipated monosexism predicted more physical health problems among White participants ($\beta = .42$, $SE = .15$, $p = .004$), but not among Black participants ($\beta = .11$, $SE = .13$, $p = .37$).

Discussion

The current study utilized an intersectional approach to examine associations between nonmonosexual stressors and health and within-group variation in these associations in a diverse sample of nonmonosexual individuals assigned female at birth. We extended previous research by applying an intersectional framework to our analyses and by attending to dimensions of health that have received limited attention in studies of nonmonosexual stress. Overall, we found that experiences of nonmonosexual stress and health were quite similar among the sexual, gender, and racial/ethnic identity subgroups in our sample. Further, all three types of nonmonosexual stress (enacted, internalized, anticipated) were associated with all three health outcomes (physical health, internalizing symptoms, substance use/problems), and these associations were largely consistent across subgroups, with some notable exceptions we detail below.

Group Differences in Nonmonosexual Stress and Health

Experiences of nonmonosexual stress and health were largely similar across sexual, gender, and racial/ethnic identity subgroups. These findings are consistent with and extend the limited previous research in this area, which has also found that experiences of enacted monosexism were similar regardless of sexual identity (Dyar et al., 2019) and gender identity (Katz-Wise et al., 2017). There were only two exceptions to the overall pattern of similarity in levels of nonmonosexual stressors. First, White participants reported more experiences of enacted monosexism than those who identified with a race/ethnicity other than White, Black, or Latinx, although there were no differences between White and Black or Latinx participants. Second, participants who identified as bisexual reported lower internalized monosexism than most other participants (with the exception of those who identified as pansexual). Individuals who have more positive attitudes toward their own multigender attractions may be more comfortable using labels that clearly identify themselves as nonmonosexual (e.g., bisexual). In contrast, those who have more negative attitudes toward their own multigender attractions may choose to use labels that do not explicitly identify themselves as nonmonosexual (e.g., queer) or they may choose to identify as gay, lesbian, or straight. Further research is needed to determine the directionality of this association.

Health outcomes generally did not vary by sexual, gender, or race/ethnicity. In an exception, we found that Black and Latinx participants reported less substance use/problems than White participants. This is consistent with the greater resilience perspective (Della, Wilson, & Miller, 2002; Meyer, Ouellette, Haile, & McFarlane, 2011; Moradi et al., 2010) and accumulating evidence that Black and Latinx sexual minorities tend to use substances at lower rates than White sexual minorities (e.g., Balsam et al., 2015; Drabble et al., 2018; Hughes et al., 2006; Kertzner et al., 2009; Newcomb, Birkett, et al., 2014; Newcomb, Ryan, Greene, Garofalo, & Mustanski, 2014; Talley et al., 2014). Although previous research has found that nonmonosexual gender minorities report worse physical health than nonmonosexual cisgender women (Katz-Wise et al., 2017), we did not find a significant association between gender identity and physical health in our sample. This

Table 6
Associations Among Nonmonosexual Stressors and Health

Model	Predictor	Health outcome		
		Physical health problems	Internalizing symptoms	Substance use
Unmoderated	Enacted monosexism	.36**	.32**	.34**
	Internalized monosexism	.23**	.21*	.24**
	Anticipated monosexism	.29**	.31**	.13*
Sexual identity Moderated	Enacted monosexism			
	Enacted monosexism	.26*	.27*	.35**
	Sexual identity	.02	.16	.20
	Interaction	.21	.09	-.02
	Internalized monosexism			
	Internalized monosexism	.36**	.29*	.25*
	Sexual identity	-.09	.07	.10
	Interaction	-.22	-.14	-.02
	Anticipated monosexism			
	Anticipated monosexism	.37	.38*	.32
	Sexual identity	-.01	.06	.17
	Interaction	-.14	-.13	-.31
	Gender identity			
	Enacted monosexism			
	Enacted monosexism	.27*	.35**	.25**
Gender identity Moderated	Gender identity	.20	.05	-.13
	Interaction	.36*	-.12	.32*
	Internalized monosexism			
	Internalized monosexism	.13	.27**	.20*
	Gender identity	.27	.13	-.03
	Interaction	.30	-.18	.12
	Anticipated monosexism			
	Anticipated monosexism	.23*	.32**	.17*
	Gender identity	.28	.12	-.01
	Interaction	.18	-.03	-.07
	Race moderated			
	Enacted monosexism			
	Enacted monosexism	.49**	.43**	.44**
	Black	-.14	-.22	-.77**
	Latinx	.32	.01	-.32
Race moderated	Other Race	.49**	.10	-.17
	Stressor * Black	-.31 [†]	-.29 [†]	-.06
	Stressor * Latinx	-.06	-.12	-.47*
	Stressor * Other race	-.03	.15	.16
	Internalized monosexism			
	Internalized monosexism	.38**	.45**	.31*
	Black	-.20	-.28	-.77**
	Latinx	.21	-.07	-.42*
	Other Race	.08	-.11	-.45
	Stressor * Black	-.33 [†]	-.28 [†]	-.20
	Stressor * Latinx	-.09	-.32*	-.04
	Stressor * Other race	-.02	-.32	.09
	Anticipated monosexism			
	Anticipated monosexism	.42**	.37**	.29*
	Black	-.16	-.20	-.71**
	Latinx	.19	-.07	-.36
	Other Race	.16	-.06	-.36
	Stressor * Black	-.31 [†]	-.05	-.24
	Stressor * Latinx	.03	-.09	-.27
	Stressor * Other race	-.26	-.21	.03

Note. Sexual identity is coded as (bisexual = 0; other identity = 1); gender identity as (cisgender = 0; gender minority = 1); White is the reference group for race/ethnicity. Nonmonosexual stressors and health latent variables were standardized prior to analyses. Age, sexual identity, gender identity, and race/ethnicity were controlled for in all analyses.

[†] $p < .10$ (noted for underpowered race interactions only). * $p < .05$. ** $p < .001$.

discrepant finding may reflect differences in our operationalizations of physical health or differences in sample composition. We utilized a latent approach to modeling physical health, while Katz-Wise and colleagues (2017) used a general measure of physical

health (SF-36). Additionally, our sample was younger (mean age = 20.2 vs. 28.4), included a larger proportion of gender (29.6% vs. 12.5%) and racial/ethnic minorities (72.5% vs. 19.7%), and only included individuals assigned female at birth (whereas

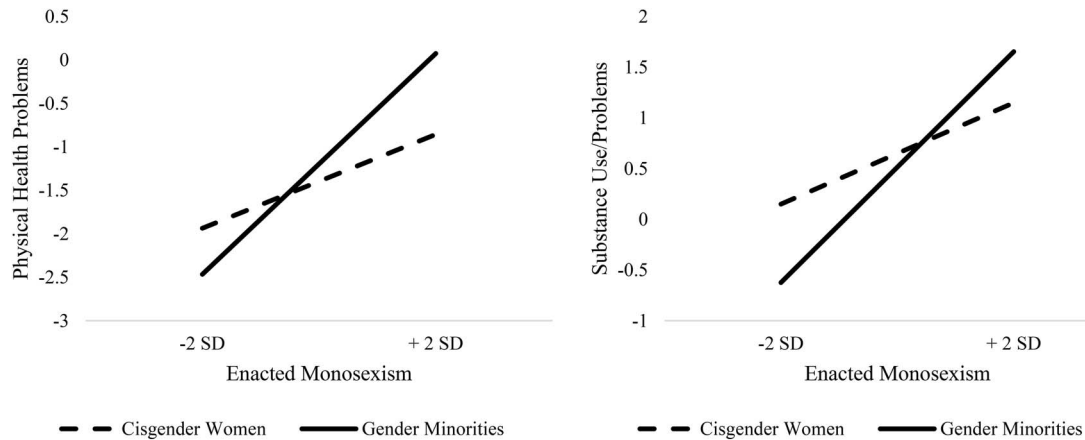


Figure 1. Simple slopes for significant interactions between gender identity and enacted monosexism predicting physical health and substance use/problems. Experiencing more enacted monosexism was associated with more physical health problems ($\beta = .27$, $SE = .10$, $p = .01$) and substance use/problems ($\beta = .25$, $SE = .07$, $p < .001$) for cisgender women, but was more strongly associated with both variables among gender minorities: physical health ($\beta = .64$, $SE = .13$, $p < .001$) and substance use/problems ($\beta = .57$, $SE = .14$, $p < .001$).

their sample included individuals assigned male or female at birth). Given the limited number of studies focused on the physical health of nonmonosexual individuals, more research is needed to understand how these sample differences may underlie these different findings. For example, the added stress that gender minority nonmonosexual individuals experience due to their gender minority status may not have had a detectable cumulative effect on physical health in our relatively young sample, but the effects of this additional burden may have been detectable among Katz-Wise and colleagues' (2017) older sample.

Associations Between Nonmonosexual Stressors and Health

As expected, higher enacted, internalized, and anticipated monosexism were each associated with poorer physical health, more internalizing symptoms, and more substance use/problems. These findings are consistent with previous research on nonmonosexual stress and internalizing symptoms (Brewster et al., 2013; Dyar et al., 2019; Dyar & London, 2018; Lambe et al., 2017; MacLeod et al., 2015; Paul et al., 2014) and extend previous findings to additional health outcomes. Specifically, while previous research has found that enacted and internalized monosexism are associated with alcohol use (Molina et al., 2015) and marijuana use (Robinson et al., 2016), our findings suggest that nonmonosexual stress (including enacted, internalized, anticipated monosexism) is associated with multiple types of substance use and related problems (including alcohol, marijuana, and other illicit drugs). Further, while one study has found that enacted nonmonosexual stress was associated with poorer physical health (Katz-Wise et al., 2017), our findings suggest that all three types of nonmonosexual stress were moderately associated with poorer physical health. These findings are particularly striking considering that our sample was comprised of young people. Research with heterosexual samples indicates that the effect of stress on physical health increases substantially as individuals age (e.g., Segerstrom & Miller, 2004; Steptoe, Hamer, & Chida, 2007), which suggests that the already large asso-

ciation (r s of .25 to .38) between stress and physical health is likely to be even stronger among older nonmonosexual individuals. This highlights the need for additional research on the impact of nonmonosexual stress on physical health across the life span.

While nonmonosexual stress was generally associated with negative health outcomes across all non-monosexual individuals, there were two group differences observed in these data. First, enacted monosexism was associated with physical health and substance use/problems for both gender minorities and cisgender women, but the associations were stronger for gender minorities. These findings are consistent with the greater risk theory (e.g., Greene, 1997), which suggests that stigma will have a greater influence on the health of individuals with multiple marginalized identities. Nonmonosexual gender minorities can experience stigma based on both of their marginalized identities and, in turn, this can deplete their resources for coping with stress. Second, while nonmonosexual stress was generally associated with poorer health for White participants, many of these associations were not significant for Black and Latinx participants. These findings are consistent with the greater resilience perspective, which suggests that sexual minority POC possess unique resources and strengths that provide resilience and empowerment in the face of minority stress (Della et al., 2002; Meyer et al., 2011; Moradi et al., 2010). For example, sexual minority POC may learn skills for coping with stigma related to their marginalized racial/ethnic identity as they grow up (Greene, 1994; Saleebey, 1996), which they may adapt and use to cope with stigma related to their sexual orientation later in life (Bowleg, Huang, Brooks, Black, & Burkholder, 2003; Meyer, 2015; Moore, 2010). Future research identifying factors that buffer the effects of stigma on health among racial/ethnic minority nonmonosexual individuals may help to inform the development of interventions to reduce the impact of nonmonosexual stress on health.

Clinical Implications

Nonmonosexual stressors were robustly associated with three major areas of health in the current study, highlighting the impor-

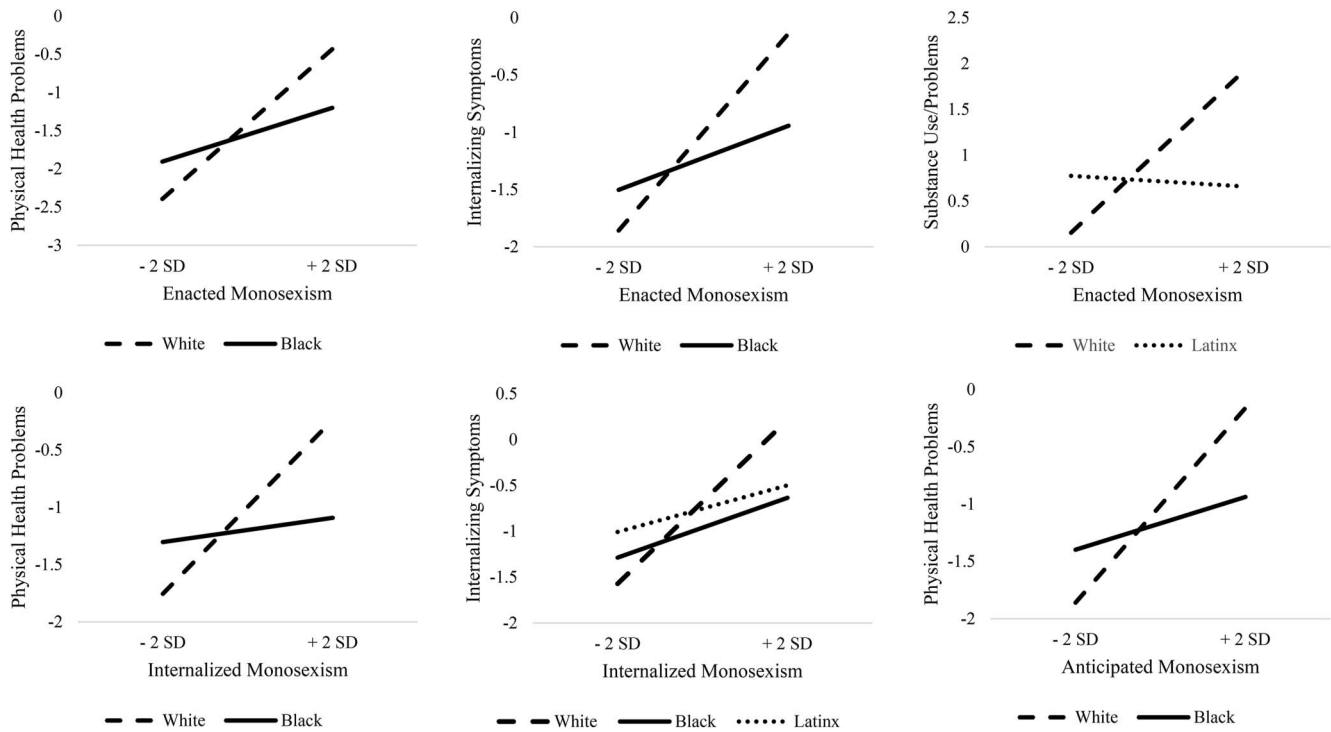


Figure 2. Simple slopes for significant and marginally significant interactions between race/ethnicity and nonmonosexual stressors predicting health. Experiencing more enacted monosexism was associated with poorer physical health ($\beta = .49$, $SE = .13$, $p < .001$), more internalizing symptoms ($\beta = .43$, $SE = .10$, $p < .001$), and more substance use/problems ($\beta = .44$, $SE = .11$, $p < .001$) for White participants, but was not associated with physical health ($\beta = .18$, $SE = .14$, $p = .22$) or internalizing symptoms for Black participants ($\beta = .14$, $SE = .11$, $p = .21$) or substance use/problems for Latinx participants ($\beta = -.03$, $SE = .14$, $p = .83$). Similarly, higher internalized monosexism was associated with more physical health problems ($\beta = .38$, $SE = .13$, $p = .01$) and internalizing symptoms ($\beta = .45$, $SE = .12$, $p < .001$) for White participants, but was not associated with physical health for Black participants ($\beta = .05$, $SE = .12$, $p = .66$) or with internalizing symptoms for Black ($\beta = .16$, $SE = .11$, $p = .13$) or Latinx participants ($\beta = .13$, $SE = .11$, $p = .25$). Additionally, anticipated monosexism predicted more physical health problems among White participants ($\beta = .42$, $SE = .15$, $p = .004$), but not among Black participants ($\beta = .11$, $SE = .13$, $p = .37$).

tance of developing interventions that reduce the impact of nonmonosexual stress on health. Given that nonmonosexual stressors were associated with three broad dimensions of health, such interventions are likely to have broad health benefits for this high risk population. Despite the unique stressors and health disparities affecting nonmonosexual individuals, few interventions have been specifically designed for this population. Scholars have described the critical need for such interventions as well as strategies that can be used to reduce mental health and substance use problems among nonmonosexual individuals (e.g., Choi & Israel, 2019; Feinstein, Dyar, & Pachankis, 2017). In an exception, Israel et al. (2018) recently developed an online intervention to reduce internalized monosexism (referred as internalized binegativity in their study) by guiding participants to reevaluate and challenge negative stereotypes about bisexuality, to externalize negative messages they may have received about bisexuality, and to adopt affirming attitudes toward bisexuality. Compared with participants in the control condition, participants in the intervention condition reported lower posttest levels of internalized and anticipated binegativity. Although they did not test whether their intervention im-

proved mental and physical health, it is likely that reducing nonmonosexual stress will improve mental and physical health, given positive associations between these stressor and health in the current study. Finally, despite the lack of interventions specifically designed for nonmonosexual individuals, a number of interventions have been developed to reduce sexual minority stigma and its consequences (see Chaudoir, Wang, & Pachankis, 2017). Given the range of health disparities affecting nonmonosexual individuals, they may benefit from an intervention that does not focus on improving one specific health problem (i.e., a transdiagnostic intervention). Pachankis (2014) developed a transdiagnostic, cognitive-behavioral intervention (ESTEEM) to reduce mental and behavioral health problems among young gay and bisexual men by targeting minority stress and universal risk factors, and demonstrated support for its efficacy in a randomized controlled trial (Pachankis, Hatzenbuehler, Rendina, Safren, & Parsons, 2015). Although the ESTEEM intervention was not specifically designed for nonmonosexual individuals, its transdiagnostic approach and its focus on sexual minority stress make it well-suited to the needs of nonmonosexual individuals.

Limitations

This study should be considered in light of its limitations. First, data were cross-sectional and therefore the directionality of associations between nonmonosexual stressors and health cannot be determined. Future research should examine these associations using longitudinal data. Second, this sample included only individuals who were assigned female at birth. Thus, we were not able to examine differences by sex assigned at birth and it is unclear whether the results generalize to nonmonosexual individuals assigned male at birth. Given that the limited existing research has found some differences in the experiences of nonmonosexual individuals by sex assigned at birth (e.g., cisgender women experience more enacted monosexism than cisgender men; Dyar et al., 2019; Mitchell et al., 2014), future research should examine sex assigned at birth as a moderator of associations between nonmonosexual stressors and health. Third, our moderation analyses examining differences by race/ethnicity were underpowered. Although we reported marginally significant effects ($p < .10$) in an effort to increase our power, this increased the likelihood that a small number of these marginal effects were spurious. Given that significant and marginally significant race moderations followed a consistent pattern (i.e., were in the same direction, demonstrated the same pattern of simple slopes, and were of similar size), we believe that reporting marginally significant effects for this set of analyses was useful as it provided a broader understanding of this pattern. However, future research with larger samples should examine these associations to determine if any significant differences in associations may not have been detectable in the current sample and to replicate marginally significant interactions.

Conclusion

Despite its limitations, the current study substantially advances our understanding of associations between nonmonosexual stressors and health as well as intersectional differences in these associations. This is one of a very small number of studies to examine associations between felt monosexism and health outcomes and may be the first to do so with physical health. Additionally, this is one of the first studies to take an intersectional approach and examine differences in the strength of these associations by sexual, gender, and racial/ethnic identities. While the overall pattern of results indicated that nonmonosexual stressors were associated with poorer health for all nonmonosexual individuals assigned female at birth, two notable exceptions emerged. Specifically, Black and Latinx nonmonosexual individuals appear to display resilience in the face of stigma. The mechanisms behind this resilience deserve attention in future research. Gender minority individuals appear to be more strongly impacted by enacted monosexism than cisgender women, likely as a result of the substantial stigmatization they experience due to their marginalized gender and sexual identities. These results highlight the need for further intersectional research on nonmonosexual stress and health.

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