The Association Between Bi+ Stigma and Problematic Cannabis Use: Testing Coping Motives as an Underlying Mechanism

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ABSTRACT. Objective: Bi+ individuals (i.e., people with attractions to more than one gender) are at heightened risk for cannabis use disorders compared with heterosexual and lesbian/gay individuals, and their heightened risk has been attributed to the unique stressors that they experience as bi+ individuals. Limited research has quantitatively examined the association between enacted bi+ stigma (i.e., biased treatment by others based on one's bi+ identity/attractions) and cannabis use problems among bi+ individuals. Existing studies have been limited by their cross-sectional designs and their lack of attention to potential mechanisms underlying this association. **Method:** We used four waves of data (6 months between waves) from 317 bi+ individuals assigned female at birth who reported cannabis use. The goals of our analyses were to examine (a) the prospective association between enacted bi+ stigma and problematic cannabis use; and (b) coping motives (i.e., motivations to use cannabis to cope with negative emotions) as a mediator of this association. **Results:** At the within-person level, when participants experienced more enacted bi+ stigma than usual at a given wave (time t-2), they experienced a subsequent increase in their motivation to use cannabis to cope (time t-1), which in turn, predicted a subsequent increase in problematic cannabis use (time t). This within-person indirect effect was significant. **Conclusions:** These findings suggest that enacted bi+ stigma contributes to problematic cannabis use by increasing motivations to use cannabis to cope with negative emotions. As such, coping motives may be an important treatment target to reduce problematic cannabis use among bi+ individuals. (*J. Stud. Alcohol Drugs, 83,* 126–133, 2022)

SEXUAL MINORITY POPULATIONS (i.e., lesbian/gay, bisexual, other non-heterosexual individuals) are at heightened risk for problematic cannabis use (i.e., use associated with physical, psychological, and social consequences) and cannabis use disorders compared with heterosexual populations (Boyd et al., 2020; Krueger et al., 2020). Rates of cannabis use disorders are most pronounced for bisexual women, with 8.6% of bisexual women experiencing a cannabis use disorder in the past year compared with 1.2% of heterosexual women and 6.8% of lesbian women (Krueger et al., 2020; Schuler & Collins, 2020). Given that at least 40% of the lesbian, gay, and bisexual population identify as bisexual (Copen et al., 2016; Pew Research Center, 2013), understanding bisexual individuals' heightened risk for cannabis use disorders is crucial for understanding disparities affecting the sexual minority population as a whole. Researchers have theorized that bi+ individuals (i.e., people with attractions to more than one gender or regardless of gender) have higher rates of substance use disorders compared with both heterosexual and lesbian/gay individuals as a result of the unique stressors that bi+ individuals experience due to the stigmatization of bisexuality (Feinstein & Dyar, 2017). However, very few studies have directly examined associations between bi+ stressors and cannabis use (for exceptions, see Dyar et al., 2020; Robinson et al., 2016). Furthermore, the few studies that have examined this association have been cross-sectional and have not examined potential mechanisms through which bi+ stressors may prospectively contribute to cannabis use problems. The current study aims to address these limitations by examining prospective associations between experiences of bi+ stressors and problematic cannabis use and by testing coping motives (i.e., using cannabis to cope with negative emotions) as a potential mechanism underlying this association in a sample of bi+ individuals assigned female at birth, a population with high rates of problematic cannabis use.

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Bi+ stressors and cannabis use

Although all sexual minorities are at risk for experiencing sexual minority stress because of the stigmatization of non-heterosexuality (Meyer, 2003), bi+ individuals experience

additional stressors as a result of the unique ways in which bi+ identities (e.g., bisexual, pansexual) and attractions are stigmatized (Brewster & Moradi, 2010; Feinstein & Dyar, 2017). These stressors include enacted bi+ stigma (i.e., biased treatment by others because of stigma against bi+ individuals), which is rooted in stereotypes that portray bi+ identities and attractions as unstable (e.g., having one's bi+ identity questioned by others) and stereotypes that portray bi+ individuals as hypersexual (e.g., experiencing unwanted sexual attention; Brewster & Moradi, 2010; Friedman et al., 2014; Mohr & Rochlen, 1999). Of note, bi+ individuals experience this bias and marginalization from heterosexual and lesbian/gay individuals (Brewster & Moradi, 2010; Dyar et al., 2019), reducing their access to supportive communities and potential sources of resilience.

A few studies have cross-sectionally linked enacted bi+ stigma to symptoms of anxiety and depression (e.g., Dyar et al., 2019, 2020; Lambe et al., 2017; Paul et al., 2014). However, research examining the associations between enacted bi+ stigma and substance use has been extremely limited, and results have been somewhat mixed. In a sample of bi+ individuals assigned female at birth, one cross-sectional study demonstrated that enacted bi+ stigma was associated with more problematic substance use (Dyar et al., 2020). Other studies have also demonstrated links between enacted bi+ stigma and problematic use of alcohol and other non-cannabis substances (Ehlke, 2020; Feinstein et al., 2017; Molina et al., 2015). However, Robinson et al. (2016) did not find an association between enacted bi+ stigma and the likelihood of current cannabis use. Given the lack of longitudinal research on bi+ stigma and cannabis use, and the high prevalence of problematic cannabis use among bi+ populations, additional research is needed to examine the directionality and temporality of the association between bi+ stigma and problematic cannabis use.

Using substances to cope

People use cannabis for various reasons, including to reduce or avoid negative emotion (i.e., using to cope), and different motives for substance use have been linked with unique patterns of substance use and problems (Cooper et al., 2016; Cox & Klinger, 1988; Kuntsche et al., 2016). Hatzenbuehler (2009) and Talley & Littlefield (2014) proposed that sexual minority stress depletes sexual minority individuals' coping resources. This coping depletion is theorized to increase the use of substances (including cannabis) to cope with negative emotions. In turn, using substances to cope has been linked with more problematic substance use (Bresin & Mekawi, 2019; Kuntsche et al., 2016). Using cannabis to cope with negative emotions is theorized to lead to more frequent and problematic use by creating a cycle of negative reinforcement that increases cannabis use. This avoidant approach to coping may also lead to other stressors, such as missing obligations because of cannabis use, which can exacerbate the negative emotions that the person is trying to avoid through the use of substances to cope (Bresin & Mekawi, 2019; Kuntsche et al., 2016).

Very few studies have examined coping motives as a mechanism driving the association between sexual minority stress and substance use, and the few that have were exclusively cross-sectional (Feinstein & Newcomb, 2016; Kalb et al., 2018). Research on coping motives in the context of cannabis use is even less common—we are aware of only one study to specifically examine whether using cannabis to cope mediates the association between sexual minority stress and problematic cannabis use. In a sample of sexual minority men, Feinstein and Newcomb (2016) found that using cannabis to cope mediated the association between enacted sexual minority stigma and problematic cannabis use. Although Feinstein and Newcomb (2016) did not find evidence that drinking to cope mediated the association between enacted sexual minority stigma and problematic alcohol use, Kalb et al. (2018) found that drinking to cope did mediate the association. Despite this preliminary support for coping motives as a potential mechanism underlying the association between sexual minority stress and substance use, longitudinal research is needed to examine the directionality and temporality of this association. In addition, although one qualitative study has suggested that bisexual women use cannabis to cope with negative emotions, including those arising from bisexual-specific stigma (Robinson, 2015), we are not aware of any quantitative studies that have tested the role of coping motives in associations between enacted bi+ stigma and problematic cannabis use (or any type of substance use).

Longitudinal research has several advantages over cross-sectional research that are particularly important for the examination of potential mechanistic processes. Cross-sectional research can only determine whether individuals who tend to experience more bi+ stigma also tend to use cannabis to cope and have more problematic cannabis use than those who tend to experience less bi+ stigma. In contrast, longitudinal research examining within-person associations uses each individual as their own control and can test the directionality of effects (Bolger & Laurenceau, 2013). Specifically, prospective within-person associations can test whether an individual's level of bi+ stigma at one wave is associated with changes in their use of cannabis to cope at the next wave, which, in turn, are associated with changes in their problematic use at the following wave. As such, they can determine whether an increase in bi+ stigma precedes an increase in using to cope, which in turn, precedes an increase in problematic cannabis use (i.e., the theorized mechanistic process). This represents a significant contribution to the literature on mechanisms explaining problematic cannabis use among bi+ populations as the majority of studies are cross-sectional and thus cannot test two fundamental aspects

of mechanistic processes—the directionality and temporality of effects.

Current study

The current study aimed to address gaps in the existing literature by examining (a) prospective association between enacted bi+ stigma and problematic cannabis use; and (b) coping motives as a mediator of this association. We used data from a sample of bi+ individuals assigned female at birth, a group that experiences disparities in cannabis use disorders that are more pronounced than those experienced by bi+ individuals assigned male at birth (Krueger et al., 2020; Schuler & Collins, 2020). At the within-person level, we hypothesized that experiencing more enacted bi+ stigma than usual at a given wave (time *t*-2) would prospectively predict increases in using cannabis to cope with negative emotions (time *t*-1), which in turn, would predict subsequent increases in problematic cannabis use (time *t*). Furthermore, we expected this prospective indirect effect to be significant.

Method

Participants and procedures

The current analyses used data from an ongoing longitudinal cohort study of young sexual and gender minorities assigned female at birth (SGM-AFAB), referred to as FAB400. Data collection began in November 2016 and is ongoing. To achieve a multiple cohort, accelerated longitudinal design, SGM-AFAB from a prior cohort study of SGM (originally recruited in 2007) and a new cohort of SGM-AFAB were both recruited in 2016–2017 using venue-based recruitment, social media, and incentivized snowball sampling. At the time of enrollment for the original cohorts, participants were 16–20 years old, assigned female at birth, and identified with a sexual or gender minority label or reported same-sex attractions or sexual behavior. Participants completed study visits at 6-month intervals and were paid $50 for each visit. The study protocol was approved by the Institutional Review Board at Northwestern University. See Whitton et al. (2019) for further details about the study design.

The current analyses use data from the 12-, 18-, 24-, and 30-month follow-up assessments (Waves 3–6) because cannabis use motives were not assessed during prior waves. Retention rates for Waves 3–6 were between 90.5% and 94.7%. Participants were included in the analytic sample if they (a) self-identified as bisexual or pansexual and/or reported attractions to men and women during one or more of Waves 3–6 and (b) reported cannabis use during one or more of Waves 3–6. Only participants who reported using cannabis at least once were included in analyses because motives for use are only relevant to individuals who use substances and were only asked when participants indicated cannabis use. Similarly, data on bi+ stressors were only collected during waves when the participant identified as bi+ or as attracted to men and women. This resulted in a final analytic sample of 317 participants. Only observations during which participants met both criteria were included in analyses (n = 930 observations included; 350 observations excluded).

Table 1. Demographics of analytic sample at Wave 3 (N = 317)

Demographic variable	*n*	%
Cohort		
2016 Cohort	284	89.6%
2007 Cohort	33	10.4%
Race/ethnicity		
White	89	28.1%
Black	93	29.3%
Latinx	84	26.5%
Asian	15	4.7%
Multiracial	33	10.4%
Other race/ethnicity	3	0.9%
Gender identity		
Cisgender women	221	69.7%
Transgender or male	31	9.8%
Genderqueer/non-binary	65	20.5%
Sexual identity		
Bisexual	134	42.3%
Queer	66	20.8%
Pansexual	70	22.1%
Lesbian/gay	28	8.8%
Unsure/questioning	10	3.2%
Other sexual identity	9	2.9%
Age, *M* (*SD*)	20.42 (3.03)	

Demographic information about the analytic sample from the Wave 3 assessment is presented in Table 1. The sample predominantly comprised cisgender women (69.7%), with a sizeable subsample of gender minority individuals (e.g., gender non-binary, transgender men; 30.3%). The sample was diverse in race/ethnicity (only 28.1% non-Latinx White) and participants were ages 17–32 at the time of Wave 3.

Measures

Enacted bi+ stigma was assessed using the Brief Antibisexual Experiences Scale (Brewster & Moradi, 2010; Dyar et al., 2019). This is an eight-item measure that assesses enacted bi+ stigma (e.g., "People have not taken my sexual orientation seriously because I am non-monosexual") from both heterosexual and lesbian/gay individuals. The original Antibisexual Experiences Scale (Brewster & Moradi, 2010) used the term "bisexual" instead of "non-monosexual," but this was changed in the development of the brief version of the measure in order to be inclusive of the range of the bi+ identities (e.g., bisexual, pansexual, queer) (Dyar et al., 2019). Before assessing enacted bi+ stigma, a definition of the term *non-monosexual* (which we used instead of bi+ in study materials) was provided: "Non-monosexual 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, omnisexual)." Participants were asked to indicate how frequently they experienced enacted bi+ stigma from heterosexual individuals and from lesbian/gay individuals in the past 6 months 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 bi+ identity or attractions. A total score was calculated by averaging responses to all items (excluding "not applicable" responses; $\alpha = .92–.95$).

Using cannabis to cope was measured using the five-item coping motives subscale of the Marijuana Motives Measure (Simons et al., 1998). These five items assess how frequently participants used cannabis to cope with negative emotions (e.g., "to forget your worries"; $\alpha = .85–.86$) on a scale of 0 (*almost never/never*) to 4 (*almost always/always*). Responses are summed across items. Although the Marijuana Motives Measure instructions did not specify a time frame, this measure followed the Cannabis Use Disorder Identification Test, Revised version (CUDIT-R), which asked participants to report their cannabis use behaviors over the past 6 months.

Problematic cannabis use. The CUDIT-R (Saunders et al., 1993) assessed cannabis use and related problems in the past 6 months. The CUDIT-R includes eight items rated on different scales ($\alpha = .76–.81$ across waves). For example, the item, "How often during the past 6 months did you fail to do what was normally expected from you because of using marijuana?" was rated from 0 (*never*) to 4 (*daily or almost daily*). Responses are summed across items. For sensitivity analyses, two subscale scores were created: consumption (sum of Items 1 and 2; "How often do you use marijuana?" and "How many hours were you 'stoned' on a typical day when you had been using marijuana?") and consequences (sum of Items 3–8; e.g., see first example item).

Data analysis

Analyses were conducted in Mplus version 8.4. There were 930 observations from 4 waves and 317 participants. A total of 4.2% of the data were missing, which was handled using Bayesian methods, which produce results similar to full information maximum likelihood (Asparouhov & Muthén, 2010). Following procedures outlined by Preacher et al. (2010), we estimated the full indirect effects model at the within- and between-person levels to disaggregate effects. In this model, enacted bi+ stigma at time *t*-2 predicted using to cope at time *t*-1 and problematic cannabis use at time *t*. In addition, using to cope at time *t*-1 predicted problematic cannabis use at time *t*. Autocorrelations for enacted bi+ stigma, using to cope, and problematic cannabis use were included and modeled as random. Autocorrelations followed an AR1 structure and included the association between the variable at time *t* and time *t*-1. This controls for the prior time point for the mediator and the outcome in all of the associations. The linear association between within-person age and problematic cannabis use was included to control for developmental changes and was modeled as random. Age at Wave 3, sexual identity, race/ethnicity, and gender were controlled for at the between-persons level.

Table 2. Correlations and descriptive statistics

Variable	Enacted Bi+ stigma	Using to cope	CUDIT
Enacted Bi+ stigma	–	.06	.10*
Using to cope	.29*	–	.20*
CUDIT	.14*	.51*	–
M	1.74	1.50	7.41
SD	0.71	0.98	4.64
ICC	.75	.68	.69

Notes: Correlations above the diagonal are within-person correlations, whereas those below the diagonal are between-person correlations. For all measures, higher scores indicate higher levels of the construct. CUDIT = Cannabis Use Disorder Identification Test; ICC = intraclass correlation.
*$p < .05$.

Multilevel structural equation modeling with a Bayesian estimator and the default of diffuse (non-informative) priors was used. We used Markov Chain Monte Carlo algorithms to generate a series of 20,000 random draws from the multivariate posterior distribution of our sample for the model. Trace plots and the Gelman–Rubin potential scaling reduction were used to determine whether convergence was achieved (Depaoli & Clifton, 2015; Muthén, 2010). The confidence/credible interval for the indirect effect was calculated within the context of the model using Bayesian estimation, as bootstrapping is not necessary when Bayesian estimation is used (Yuan & MacKinnon, 2009).

Results

See Table 2 for correlations, means, standard deviations, and intraclass correlations (ICCs). Participants had scores on the CUDIT-R of 8 or above, indicative of hazardous use, on 41.6% of observations and scores of 12 or above, indicative of a potential cannabis use disorder, on 21.3% of observations (Adamson et al., 2010). ICCs were between .68 and .75, indicating that although more than half of the variance in enacted bi+ stigma, using to cope, and problematic cannabis use was between-persons (68%–75%), there was also a substantial amount of variance within individuals over time (25%–32%).

In regard to the indirect effects model (Table 3; Figure 1), at the within-person level, enacted bi+ stigma predicted using to cope, which in turn predicted problematic cannabis use. Specifically, when participants experienced more enacted bi+ stigma than usual at a given wave (time *t*-2), they experienced a subsequent increase in their motivation to use cannabis to cope (time *t*-1). In turn, this increase in using to cope predicted a subsequent increase in problematic cannabis use (time *t*). The within-person indirect effect of

Table 3. Indirect effects model

Within-person associations	Association		*b*	[95% CI]	*p*
Autocorrelations	Enacted bi+ stigma (*t*-1) → Enacted bi+ stigma (*t*)		0.34	[0.26, 0.41]	<.001
	Using to cope (*t*-1) → Using to cope (*t*)		0.58	[0.45, 0.68]	<.001
	CUDIT (*t*-1) → CUDIT (*t*)		0.29	[0.16, 0.39]	<.001
Prospective associations	Enacted bi+ stigma (*t*-2) → Using to cope (*t*-1)		0.06	[0.03, 0.11]	<.001
	Using to cope (*t*-1) → CUDIT (*t*)		0.14	[0.02, 0.27]	.02
	Enacted bi+ stigma (*t*-2) → CUDIT (*t*)		0.05	[-0.04, 0.14]	.26
Between-person associations	Outcome	Predictor	*b*	[95% CI]	*p*
	CUDIT	Enacted bi+ stigma	-0.44	[-2.17, 0.40]	.36
		Using to cope	1.04	[-0.24, 3.15]	.08
		Age at Wave 3	-0.05	[-0.69, 0.24]	.74
		Gender minority	0.02	[-0.19, 0.37]	.86
		Lesbian/gay	0.10	[-0.35, 0.35]	.46
		Queer	0.22	[-0.03, 0.61]	.06
		Pansexual	0.08	[-0.14, 0.32]	.42
		Other sexual identity	0.29	[-0.02, 0.77]	.06
		Black	-0.18	[-0.98, 0.27]	.44
		Latinx	-0.04	[-0.48, 0.19]	.79
		Other race/ethnicity	-0.06	[-0.52, 0.19]	.61
	Using to cope	Enacted bi+ stigma	0.21	[-0.62, 0.80]	.67
		Age at Wave 3	0.19	[-0.07, 0.46]	.14
		Gender minority	-0.10	[-0.42, 0.10]	.44
		Lesbian/gay	-0.002	[-0.27, 0.30]	.98
		Queer	-0.15	[-0.44, 0.07]	.17
		Pansexual	0.001	[-0.21, 0.24]	.99
		Other sexual identity	-0.27	[-0.47, -0.08]	.01
		Black	0.35	[0.07, 0.61]	.02
		Latinx	0.11	[-0.15, 0.35]	.39
		Other race/ethnicity	0.14	[-0.11, 0.37]	.16

Notes: Reference groups for categorical predictors are cisgender women (gender identity); bisexual (sexual identity); non-Latinx White (race/ethnicity). CI = confidence interval; CUDIT = Cannabis Use Disorder Identification Test.

enacted bi+ stigma on problematic cannabis use via using to cope was significant (indirect effect = .08, 95% CI [.01, .20], $p = .02$). Between-person associations and associations between demographic covariates and variables of interest are presented in Table 3 but are not discussed in text for brevity.

Sensitivity analyses

Because the CUDIT-R includes items assessing consumption (frequency of use and number of hours of intoxication on a typical use day) and consequences of use (e.g., social and psychological consequences, symptoms of dependence), we conducted sensitivity analyses in which the single CUDIT-R score was split into two subscale scores. Results of indirect effects models using these subscale scores produced similar results, with both models producing significant positive indirect effects similar to that produced by the model that used the single total score for the CUDIT-R.

Discussion

To the best of our knowledge, the current study is the first to examine the longitudinal association between enacted bi+ stigma and problematic cannabis use, as well as the first to examine the mediating role of coping motives. Consistent with hypotheses, our results indicated that when bi+ individuals experienced more enacted bi+ stigma than usual, they experienced a subsequent increase in their motivation to use cannabis to cope with negative emotions, which in turn predicted a subsequent increase in problematic cannabis use. Based on these findings, bi+ stigma appears to contribute to problematic cannabis use among bi+ individuals in part because it increases their motivation to use cannabis to cope.

These findings provide support for Hatzenbuehler's (2009) psychological mediation framework and are consistent with the motivational model of substance use (Cox & Klinger, 1988; Kuntsche et al., 2016). Very few studies have tested the role of coping motives (Feinstein & Newcomb, 2016; Kalb et al., 2018) or related constructs (e.g., emotion dysregulation; Fitzpatrick et al., 2020; Rogers et al., 2017; Villarreal et al., 2021) in the associations between sexual minority stress and substance use, and those that have examined the mediating role of coping motives have been limited by their cross-sectional designs. By demonstrating that using cannabis to cope mediates the association between enacted bi+ stigma and problematic cannabis use via a prospective indirect effect, the current study was able to demonstrate the directionality of these associations, providing support for changes in bi+ stigma preceding changes in coping motives, which in turn preceded changes in problematic cannabis use. This is a major advantage over the use of cross-sectional mediation analyses, which are unable to test the directional-

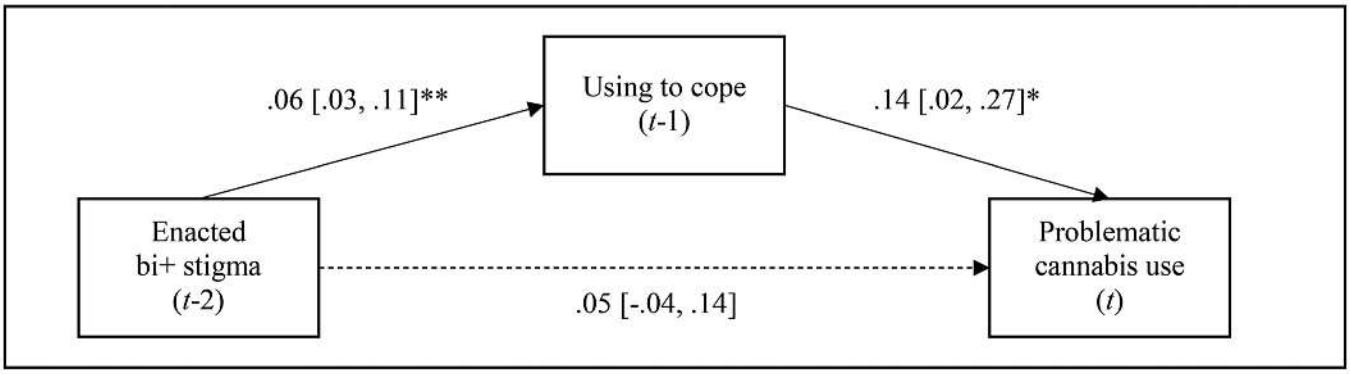

FIGURE 1. Within-person associations in the indirect effects model. Autocorrelations between each within-person variable at one time point (*t*) and the previous time point (*t*-1) are included in the model but not in the figure: autocorrelation for enacted bi+ stigma ($b = 0.34$, 95% CI [0.26, 0.41]), using to cope ($b = 0.58$, 95% CI [0.45, 0.68]), and problematic cannabis use ($b = 0.29$, 95% CI [0.16, 0.39]). Between-person associations are not presented in figure for simplicity. See Table 3 for between-person associations.
*$p < .05$; **$p < .01$.

ity or temporality of associations—aspects that are critical to understanding and testing mechanistic theories. As such, the current findings substantially extend our understanding of the role of using to cope in the link between bi+ stigma and problematic cannabis use.

Clinical implications

The current findings have several clinical implications. First, to reduce problematic cannabis use among bi+ individuals, it may be important for clinicians to assess enacted bi+ stigma and coping motives among bi+ clients. Then, for those who endorse using cannabis to cope, this may be an important treatment target. Using cannabis to cope is theorized to create a cycle of negative reinforcement that increases cannabis use and leads to other stressors, such as missing obligations as a result of cannabis use, which can exacerbate the negative emotions that the person is trying to avoid through the use of substances to cope (Bresin & Mekawi, 2019; Kuntsche et al., 2016). Clinicians could help bi+ clients to understand how their experiences of bi+ stigma contribute to their cannabis use, to increase their awareness of their motivations for using cannabis in specific instances, to consider replacing cannabis use with different coping strategies when their use is motivated by a desire to reduce negative emotions, and to help clients break cycles of negative reinforcement that may involve using cannabis to cope.

Previous research has found that interventions targeting substance use motives are efficacious at reducing substance use and consequences, although they have typically focused on alcohol use (e.g., Blevins & Stephens, 2016; LaBrie et al., 2008) and haven't been tested among bi+ individuals. For example, one study found that a group motivational enhancement intervention, which partly focused on drinking motives, was associated with drinking less and fewer alcohol-related consequences (LaBrie et al., 2008). In another study, a brief intervention targeting drinking motives (i.e., providing education and feedback on drinking to cope and alternative coping strategies) was associated with reductions in drinking to cope as well as alcohol use and consequences (Blevins & Stephens, 2016). Last, in regard to cannabis use, participation in cognitive-behavioral therapy and motivational enhancement therapy has been associated with decreases in coping motives, cannabis use, and consequences (Banes et al., 2014). Thus, interventions designed to reduce coping motives could be adapted for bi+ individuals to address the role of bi+ stigma in substance use motivations and substance use behavior. Although it is important to help bi+ individuals to be able to cope with bi+ stigma in effective ways, there is a critical need for population- and system-level interventions to reduce bi+ stigma and to promote equity for people of all sexual orientations.

Limitations

The current findings should be considered in light of the following limitations. First, the sample only included bi+ individuals assigned female at birth and therefore did not allow us to examine whether these associations differed by sex assigned at birth. Second, our non-probability sample limits the generalizability of our findings. Many participants were recruited from SGM community events and social media links to SGM-relevant pages. Therefore, this sample may be more out and more connected to the SGM community than the average bi+ individual. In addition, all participants were recruited from Chicago and their experiences may not reflect bi+ individuals' experiences in other areas. Further, as data on motives for cannabis use were not collected during observations when participants reported no cannabis use, it is possible that the association between enacted bi+ stigma and problematic cannabis use may have been affected. Therefore, these findings may not generalize to times when participants do not use cannabis or to individuals who are not regular cannabis users.

As we only examined coping motives for cannabis use, further research is needed to determine the roles of other motives for cannabis use and the unique effects of coping motives for cannabis use when other motives are controlled for. Although we did not test other motives, prior research has established that coping motives are most strongly associated with substance use problems (Bresin & Mekawi, 2019). Further, although our focus was specifically on bi+ stigma, it will be useful for future research to examine the relative effects of different types of stress (e.g., general vs. sexual orientation–specific) on coping motives and cannabis use problems among bi+ individuals. Possession of small amounts of cannabis was decriminalized in Chicago when Waves 3–5 of data were collected, and recreational use was legalized in Illinois during the sixth wave of data collection. As such, these changes may have influenced participants' reports of cannabis use, and our findings may not be generalizable to individuals living in cities and states where cannabis use remains illegal/criminalized. Last, although these analyses contribute to our understanding of the temporality and directionality of associations, even longitudinal analyses cannot establish causality.

Conclusions

The current study substantially extends our understanding of a process through which enacted bi+ stigma may affect problematic cannabis use. Findings provide robust evidence of the directionality of the associations among enacted bi+ stigma, coping motives, and problematic cannabis use, suggesting that using cannabis to cope may be one mechanism through which enacted bi+ stigma contributes to increases in problematic cannabis use. Our findings suggest that interventions designed to reduce problematic cannabis use among bi+ individuals should attend to their experiences of bi+ stigma and their motivations for using cannabis and teach alternative skills for coping with bi+ stigma.

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