Motivations for sexual identity concealment and their associations with mental health among bisexual, pansexual, queer, and fluid (bi+) individuals

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Abstract

Bisexual and other non-monosexual (bi+) people are at increased risk for depression and anxiety compared to both heterosexual and gay/lesbian people. Bi+ people are also more likely to conceal their sexual orientation than gay/lesbian people are, and concealment is generally associated with negative mental health outcomes. Despite evidence that concealment is a particularly salient stressor for bi+ people, there has been a lack of attention to their motivations for concealment. As such, the goal of the current study was to examine the associations among concealment, motivations for concealment, and depression and generalized anxiety symptoms in a sample of 715 bi+ people who completed an online survey. Nearly half of participants endorsed purposely trying to conceal their bi+ identity in their day-to-day life, and concealment was significantly associated with higher levels of depression and generalized anxiety. Using exploratory factor analysis, we identified two motivations for concealment: intrapersonal motivations (e.g., one's bi+ identity not being a central part of one's overall identity, not being comfortable with being bi+) and interpersonal motivations (e.g., concern about being judged or treated negatively, concern about putting oneself at risk of physical harm). Interpersonal motivations were significantly associated with higher levels of depression and generalized anxiety, whereas intrapersonal motivations were not. In sum, while concealment may generally be associated with negative mental health outcomes, this may only be the case for those who conceal out of concern for discrimination and victimization. These findings highlight the importance of examining bi+ people's motivations for concealing their sexual orientation in order to understand the extent to which they experience negative mental health outcomes.

Keywords

bisexual; pansexual; queer; non-monosexual; concealment; depression; anxiety

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Studies have consistently demonstrated that bisexual people are at increased risk for depression and anxiety compared to heterosexual people and often compared to gay and

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lesbian people as well (for meta-analyses, see Ross et al., 2018; Salway et al., 2019). Further, people who use other identity labels to reflect their attractions to more than one gender/sex (e.g., pansexual, queer) are also at increased risk for depression and anxiety (e.g., Borgogna, McDermott, Aita, & Kridel, 2019; McNair & Bush, 2016). These disparities are due, in part, to the unique stressors that bisexual and other non-monosexual (bi+) people face, such as stereotypes about bi+ identities (e.g., that they are not legitimate or stable) and discrimination from both heterosexual and gay/lesbian people (for a review, see Feinstein & Dyar, 2017). In addition to these unique stressors, bi+ people are also less likely to be open about and more likely to conceal their sexual orientation than gay and lesbian people (e.g., Balsam & Mohr, 2007; Mohr, Jackson, & Sheets, 2017; van der Star, Pachankis, & Bränström, 2019), and sexual orientation concealment is generally associated with negative mental health outcomes (e.g., Meyer, 2003; Pachankis, 2007). Despite evidence that concealment is a particularly salient stressor for bi+ people, there has been a lack of empirical attention to their motivations for concealing their sexual orientation. As such, the goal of the current study was to examine the associations among concealment, motivations for concealment, and depression and generalized anxiety symptoms among bi+ individuals.

Minority stress theory suggests that sexual minorities (including, but not limited to, bi+ people) are exposed to unique stressors related to their stigmatized social status, and these unique stressors explain why they are at increased risk for negative mental health outcomes such as depression and anxiety (Meyer, 2003). Sexual orientation concealment is one of these unique stressors (in addition to discrimination, internalized stigma, and expectations of rejection; Meyer, 2003) and, as noted, concealment is particularly common among bi+ people. Scholars have proposed that the process of concealing a stigmatized identity is a source of psychological stress with negative consequences (e.g., preoccupation with one's stigmatized identity, engagement in impression management behaviors, symptoms of anxiety and depression; Pachankis, 2007). Consistent with this model as well as minority stress theory, several studies have demonstrated that sexual orientation concealment is, in fact, associated with negative mental health outcomes (e.g., Frost et al., 2007; Jackson & Mohr, 2016; Mohr & Kendra, 2011; Ullrich et al., 2003). While most of these studies have broadly focused on sexual minority individuals, there is also evidence that sexual orientation concealment is associated with negative mental health outcomes specifically among bisexual individuals (Schrimshaw et al., 2013). Still, very few studies have examined people's motivations for concealing their sexual orientation and the extent to which different motivations are associated with these negative mental health outcomes.

Previous quantitative studies have revealed that sexual orientation concealment is associated with higher levels of internalized stigma, acceptance concerns, and rejection sensitivity (Jackson & Mohr, 2016; Meidlinger & Hope, 2014) as well as lower levels of identity centrality, affirmation, and strength (Jackson & Mohr, 2016; Mohr & Kendra, 2011). These findings suggest that there may be stigma-related motivations for concealing one's sexual orientation as well as and non-stigma-related motivations for doing so. Further, in previous qualitative studies, gay and bisexual men have described diverse motivations for not disclosing their sexual orientation. It is important to note that not disclosing one's sexual orientation is not the same as concealing, or actively attempting to prevent others from knowing, one's sexual orientation (Jackson & Mohr, 2016; Meidlinger & Hope, 2014).

Despite this important difference, non-disclosure and concealment are related constructs, conceptualized as components of the broader construct of outness (i.e., openness about one's sexual orientation; Meidlinger & Hope, 2014). As such, previous research on motivations for non-disclosure can still shed light on potential motivations for concealment. For example, in one study, gay and bisexual men reported that they had not disclosed their sexual orientation to their mother because they had pessimistic expectations about her reaction, they did not want to burden or upset her, they were not ready, they did not think she needed to know, and their relationship was distant (Boon & Miller, 1999). However, that study only included two bisexual men and it focused specifically on reasons for not disclosing one's sexual orientation to one's mother. In more recent studies, behaviorally bisexual men have also described diverse motivations for not disclosing their sexual orientation, such as to avoid stigmatizing reactions and rejection and because it is personal information that other people do not need to know (Benoit & Koken, 2012; Dodge et al., 2012; Malebranche et al., 2010; Schrimshaw et al., 2014; Schrimshaw et al., 2018). Of note, motivations for concealing one's sexual orientation may depend on other aspects of one's identity (e.g., race/ethnicity). For example, bi+ people of color face unique challenges related to having multiple marginalized identities (e.g., a lack of belonging, invalidation related to one's sexual orientation and one's race/ethnicity; Ghabrial, 2019). Given these unique experiences, bi+ people of color may be motivated to conceal their sexual orientation for different reasons than white bi+ people, although this remains an empirical question.

While these studies provide a foundation for understanding bi+ people's motivations for concealment, they have not examined whether different motivations have different consequences for mental health. The consequences of concealing a stigmatized identity depend on an individual's perception of risk in a given situation (Pachankis, 2007). For example, if an individual believes that the discovery of their concealable stigmatized identity could lead to rejection, discrimination, or violence, then they are likely to experience distress in that situation or to avoid that situation altogether. Relatedly, if an individual is motivated to conceal their sexual orientation to avoid these stigma-related experiences, then doing so may contribute to negative mental health outcomes. In contrast, if an individual conceals their sexual orientation for non-stigma-related reasons (e.g., because it is not an important part of their identity), then doing so may not influence mental health. In sum, it is possible that an individual's motivation for concealing their sexual orientation could influence the extent to which they experience negative mental health consequences, but this remains an empirical question.

The current study

To address this gap in the literature, we examined the associations among concealment, motivations for concealment, and depression and generalized anxiety symptoms in a sample of bi+ individuals. Of note, in order to examine these associations, we first had to create a set of items to measure motivations for concealment because there were no pre-existing measures. As such, prior to testing our substantive research questions, we developed a measure of motivations for concealment. Specifically, we created an initial set of items, subjected them to pilot testing in a small sample, and tested their factor structure in our larger sample (described in detail in the Methods and Results). In regard to our substantive

research questions, we hypothesized that concealment would generally be associated with higher levels of depression and generalized anxiety symptoms. Further, we hypothesized that stigma-related motivations for concealment would be associated with higher levels of depression and generalized anxiety symptoms, but that non-stigma-related motivations for concealment would not be associated with these mental health outcomes.

Method

We used data from a larger project focused on how bi+ people make their sexual orientation visible to others and how these experiences relate to minority stress and health (Davila, Feinstein, Dyar, & Jabbour, 2020; Feinstein, Dyar, Milstone, Jabbour, & Davila, in press). Of note, the current study's focus on concealment and motivations for concealment has not been a focus of previous publications from this project.

Pilot study

To our knowledge, there are no existing measures of motivations for concealment. As such, we created a measure for the current study. To do so, we generated a list of seven items reflecting stigma- and non-stigma-related motivations for concealment that have been described in previous studies. Given the range of identity labels that people can use to describe attractions to people of more than one gender or regardless of gender (e.g., bisexual, pansexual, queer, fluid), the instructions and items included the term "bi+," which was defined at the beginning of the pilot study. The items were preceded by the following prompt: "There may be times when you want to hide or conceal your bi+ identity from others in your day-to-day life. Please rate the extent to which you do so for the following reasons." The seven items included: (1) It is not a central part of my identity; (2) It is not anyone else's business; (3) I am not comfortable with having others know that I am bi+; (4) I am not comfortable with being bi+; (5) I am concerned about being judged or treated negatively; (6) I am concerned that others would reject me; and (7) I am concerned that I would be putting myself at risk of physical harm. The response scale ranged from 1 ("not at all") to 5 ("very much").

We pilot tested the items with 27 bi+ individuals who ranged in age from 20–59 ($M = 31.2$, $SD = 9.7$) and who were diverse in gender identity (44% men, 41% women, and 15% non-binary). Of note, most of the pilot participants were white (89%) and specifically identified as bisexual (89%), limiting our representation of people of color and people who use other labels to describe attractions to more than one gender/sex (e.g., pansexual, queer). The pilot participants were presented with the measure and asked to respond to three questions: (1) Were any of the questions unclear or confusing? If so, which one(s) and why? (2) Were any of the questions written in a way that offended you? If so, which one(s) and why? (3) Do you have any suggestions for additional questions that we should consider asking?

Participants' responses indicated that most of the items were clear and did not offend them. However, one participant suggested adding an item to assess concealment motivated by concern about upsetting people, and one participant suggested clarifying the response options. Based on their feedback, we added an eighth item ("I am concerned that it would upset people who matter to me") and we revised the anchors on the response scale (we

changed "not at all" to "not at all a reason for concealment" and we changed "very much" to "very much a reason for concealment").

Primary study

Procedure—For the larger project, participants completed an online survey focused on bi+ identity, minority stress, and health. Participants were recruited using paid advertisements on Facebook and Instagram, which directed potential participants to an eligibility survey. Eligibility criteria included: (1) at least 18 years old; (2) lived in the United States; and (3) attracted to people of more than one gender or regardless of gender. Those who met the eligibility criteria were automatically directed to the consent form. If they consented to participate, then they were automatically directed to the survey. Participants were compensated with a $10 Amazon gift card.

Participants—A total of 777 participants completed the survey, but 62 were excluded from the analytic sample because: (1) they had duplicate IP addresses, suggesting that the same person may have completed the survey twice ($n = 14$); (2) they failed more than one attention check ($n = 25$); or (3) they did not report a bi+ identity despite reporting that they were attracted to people of more than one gender or regardless of gender ($n = 23$). As such, the analytic sample included 715 participants. Most participants primarily identified as bisexual (49.8%), pansexual (24.6%), or queer (19.2%), while 6.4% reported other identities (e.g., fluid). Most participants reported that they used more than one term to describe their sexual identity (56.9%). The sample included cisgender women (31.6%), cisgender men (27.0%), transgender women (8.7%), transgender men (3.9%), and non-binary individuals (28.8%). Most identified as White (83.1%), while smaller proportions identified as multiracial (8.5%), Black (3.6%), Asian (2.8%), Native American (1.7%), or a different race (0.3%). In regard to ethnicity, 11.9% identified as Latinx. Finally, most participants had completed some college or a college degree (84.1%).

Measures—Similar to the pilot study, all of the instructions and questions/items included the term "bi+," which was defined at the beginning of the study.

<u>**Demographics.:**</u> Participants were asked to report their age, race, ethnicity, gender identity, and sex assigned at birth. In regard to sexual identity, they were asked to report the term that best describes their sexual orientation ("primary sexual identity") and whether they use any other labels to describe their sexual orientation ("multiple label use"). For analyses, race/ethnicity was dichotomized (0 = white, 1 = person of color). Gender identity and sex assigned at birth were combined into a single "gender/sex" variable with five categories: cisgender men, cisgender women, transgender men, transgender women, and non-binary individuals. If a participant reported a gender identity that was different from their sex assigned at birth, then they were included in one of the transgender categories along with participants who specifically identified as transgender. In regard to sexual identity, "primary sexual identity" had four categories (bisexual, pansexual, queer, and any other identity) and "multiple label use" was dichotomous (0 = no, 1 = yes).

Concealment.: Participants were asked a single question about concealment: "Do you ever purposely try to conceal your bi+ identity in your day-to-day life?" (0 = no, 1 = yes)

Motivations for concealment.: The final measure began with the following prompt: "There may be times when you want to hide or conceal your bi+ identity from others in your day-to-day life. Please rate the extent to which you do so for the following reasons." The prompt was followed by eight items: (1) It is not a central part of my identity; (2) It is not anyone else's business; (3) I am not comfortable with having others know that I am bi+; (4) I am not comfortable with being bi+; (5) I am concerned about being judged or treated negatively; (6) I am concerned that others would reject me; (7) I am concerned that I would be putting myself at risk of physical harm; and (8) I am concerned that it would upset people who matter to me. Each item was rated on a 5-point scale (1 = not at all a reason for concealment, 5 = very much a reason for concealment). We used exploratory factor analysis (EFA) to examine the factor structure of the eight motivations for concealment (see Data Analysis and Results).

Depression.: The Patient Health Questionnaire – 8-item version (PHQ-8; Kroenke et al., 2009) was used to assess depression symptoms over the past two weeks (e.g., "Feeling down, depressed, or hopeless"). Each item was rated on a 4-point scale (1 = not at all, 4 = nearly every day) and responses were averaged to create a total score (α = .89). Higher scores reflect greater levels of depression symptoms.

Generalized anxiety.: The Generalized Anxiety Disorder Scale (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006) was used to assess generalized anxiety symptoms over the past two weeks (e.g., "Feeling nervous, anxious, or on edge"). Each item was rated on a 4-point scale (1 = not at all, 4 = nearly every day) and responses were averaged to create a total score (α = .92). Higher scores reflect greater levels of generalized anxiety symptoms.

Data analysis

Analyses were conducted using Mplus version 8.1. Full information maximum likelihood was used to handle missing date (6.0%). First, we used EFA with geomin rotation to examine the factor structure of the eight motivations for concealment. We used model fit, factor loadings, parallel analyses, and factor interpretability to determine the number of factors. The comparative fit index (CFI), root-mean-squared error of approximation (RMSEA), and standardized root-mean-square residual (SRMR) were used to evaluate model fit, with good model fit indicated by CFI values   .90 and RMSEA and SRMR values < .08 (Brown & Cudeck, 1993; Hu & Bentler, 1999). Second, we used logistic regression to examine the associations between demographic characteristics (age, race/ethnicity, gender/sex, primary sexual identity, and multiple label use) and concealment (yes/no). Race/ethnicity, gender/sex, primary sexual identity, and multiple label use were dummy-coded for analyses; white was the reference group for race/ethnicity, cisgender women was the reference group for gender/sex, bisexual was the reference group for primary sexual identity, and "no" was the reference group for multiple label use. Third, we used linear regression to examine the associations between concealment (yes/no) and depression and generalized anxiety symptoms; these analyses controlled for the aforementioned demographic

characteristics. Fourth, we used linear regression to examine the associations between the aforementioned demographic characteristics and the motivations for concealment. Finally, we used linear regression to examine the associations between the motivations for concealment and depression and generalized anxiety symptoms, again controlling for the aforementioned demographic characteristics.

Results

Factor structure of motivations for concealment

The EFA of the eight motivations for concealment resulted in the following eigenvalues: 2.58, 1.96, .89, .76, .57, .53, .41, and .30. We conducted a parallel analysis in which an EFA was performed using random data, which produced 95th percentile eigenvalues of 1.32, 1.21, 1.13, 1.06, 1.01, .95, .89, and .83. The first two eigenvalues from our dataset were larger than the first two eigenvalues generated from the random dataset, suggesting that two factors should be extracted. The BIC value for the two-factor model (7875.81) was also lower than the BIC values for the one-factor model (8112.36) and the three-factor model (7882.89), also suggesting that the two-factor model was the best fit to the data. In regard to other model fit indices, model fit was poor for the one-factor model (CFI = .47, RMSEA = .23, SRMR = .18). Most indices of model fit suggested that model fit was acceptable for the two-factor model (CFI = .92, RMSEA = .11, SRMR = .05) and for the three-factor model (CFI = .97, RMSEA = .10, SRMR = .03). The RMSEA values approached, but did not meet, the threshold for good model fit, but the acceptable CFI and SRMR values combined with the relative closeness of the RMSEA values to the threshold suggested that these models likely fit the data reasonably well. Given that the eigenvalues and the BIC values both suggested that the two-factor model was the best fit to the data, we proceeded with two factors.

The factor loadings for the two-factor model are presented in Table 2. We labeled the factors "intrapersonal motivations" (items 1–4) and "interpersonal motivations" (items 5–8). The intrapersonal motivation factor reflected concealing one's bi+ identity because it is not central to one's overall identity and because of not being comfortable with being bi+. The interpersonal motivation factor reflected concealing one's bi+ identity because of concern about being judged or treated negatively, rejected, and putting oneself at risk of physical harm. All of the items had moderate to strong factor loadings on a single factor (.40). Responses to the items on each of the factors were averaged to create subscale scores. Higher subscale scores reflect greater levels of intrapersonal or interpersonal motivations to conceal one's sexual orientation (depending on the subscale). The two subscales were significantly correlated (β = .13, p = .02). A paired-samples t-test indicated that participants endorsed interpersonal motivations (M = 3.45, SD = .96) significantly more than intrapersonal motivations (M = 2.34, SD = .93; t[309] = 15.84, p < .001).

Concealment

Nearly half of participants endorsed purposely trying to conceal their bi+ identity in their day-to-day life (n = 345; 48.3%). Age, gender/sex, and sexual identity were significantly associated with concealment (see Table 1). Younger participants were more likely to report concealment than older participants were, cisgender women were more likely to report

concealment than transgender women were, and participants who identified as bisexual were more likely to report concealment than participants who identified as pansexual. In contrast, race/ethnicity and multiple label use were not significantly associated with concealment. Consistent with hypotheses, concealment was significantly associated with higher levels of depression symptoms ($\beta = .11$, $p = .004$) and generalized anxiety symptoms ($\beta = .16$, $p < .001$).

Motivations for concealment

Gender/sex was significantly associated with interpersonal motivations for concealment, such that non-binary individuals reported higher levels of interpersonal motivations compared to cisgender women (see Table 1). None of the other demographic characteristics were significantly associated with interpersonal motivations, and none were significantly associated with intrapersonal motivations. Finally, we examined the unique associations between the two motivation subscales and depression and generalized anxiety symptoms. We included both subscales in the analyses together in order to account for their significant correlation. Results indicated that interpersonal motivations were significantly associated with higher levels of depression ($\beta = .21$, $p < .001$) and generalized anxiety ($\beta = .21$, $p < .001$). In contrast, intrapersonal motivations were not significantly associated with levels of depression ($\beta = .08$, $p = .12$) or generalized anxiety ($\beta = .08$, $p = .15$).

Exploratory analyses

Although our EFA suggested a two-factor solution, the intrapersonal motivation factor appeared to encompass two constructs: (1) concealing one's bi+ identity because it is not central to one's overall identity and because it is not necessary for other people to know (i.e., "salience motivations"); and (2) concealing one's bi+ identity because of not being comfortable with being bi+ (i.e., "discomfort motivations"). We re-ran our analyses with the three motivation subscales and the pattern of results was the same. Interpersonal motivations were significantly associated with higher levels of depression ($\beta = .22$, $p < .001$) and generalized anxiety ($\beta = .22$, $p < .001$). In contrast, salience motivations were not significantly associated with levels of depression ($\beta = .07$, $p = .20$) or generalized anxiety ($\beta = .10$, $p = .10$). Further, discomfort motivations were also not significantly associated with levels of depression ($\beta = .02$, $p = .68$) or generalized anxiety ($\beta = -.01$, $p = .84$).

Discussion

In order to advance the literature on sexual orientation concealment, we examined the associations among concealment, motivations for concealment, and depression and generalized anxiety symptoms in a sample of bi+ individuals. Nearly half of participants endorsed purposely trying to conceal their bi+ identity in their day-to-day lives. Consistent with previous research (e.g., Schrimshaw et al., 2013), we found that concealment was significantly associated with higher levels of depression and generalized anxiety. Of note, while our findings provide additional support for the negative mental health consequences of sexual orientation concealment, it is important to acknowledge that disclosure can also have negative consequences (e.g., rejection, discrimination, violence). In fact, previous research has found that being more open about one's sexual orientation is associated with

discrimination (Feinstein, Dyar, & London, 2017) and negative mental health consequences (Feinstein, Dyar, Li, Whitton, Newcomb, & Mustanski, 2019) for bisexual people. Bi+ individuals appear to be in a catch-22, such that both concealment and disclosure can jeopardize their wellbeing. As such, it may be particularly important for bi+ individuals to carefully consider the potential risks and benefits of disclosing one's sexual orientation.

We also found that concealment was particularly common among younger participants, cisgender women, and participants who identified as bisexual. These findings suggest that concealment and its consequences are particularly relevant to specific subgroups of bi+ individuals. Given increases in bisexual identification among youth, especially female youth, over the past decade (Phillips et al., 2019), it may be particularly important to equip them with skills for making decisions about sexual orientation disclosure and with skills for coping with the negative emotional consequences of concealment. Still, bi+ identification is particularly common among transgender people (James, Herman, Rankin, Keisling, Mottet, & Anafi, 2016) and other studies have found that men are particularly likely to conceal their bisexual identities (Pew Research Center, 2013). As such, all bi+ people could benefit from these skills.

While concealment was generally associated with depression and generalized anxiety, we also found that some motivations for concealment were associated with these negative mental health consequences, while others were not. Specifically, interpersonal motivations for concealing one's bi+ identity (e.g., concern about being judged or treated negatively, concern about putting oneself at risk of physical harm) were significantly associated with higher levels of depression and generalized anxiety. In contrast, intrapersonal motivations for concealing one's bi+ identity (e.g., one's bi+ identity not being a central part of one's overall identity, not being comfortable with being bi+) were not significantly associated with depression and generalized anxiety. These findings are generally consistent with the notion that the consequences of concealing a stigmatized identity depend on an individual's perception of risk in a given situation (Pachankis, 2007). If a bi+ person believes that the discovery of their sexual orientation could lead to discrimination or victimization, then they are likely to experience distress in that situation. In contrast, if a bi+ person conceals their sexual orientation for a non-stigma-related reason (e.g., because it is not an important part of their identity), then doing so may not influence their mental health. Of note, participants endorsed interpersonal motivations for concealment significantly more than they endorsed intrapersonal motivations for concealment. As such, interpersonal motivations for concealment are both more common and more problematic for bi+ individuals.

Of note, we also found that gender non-binary individuals reported higher levels of interpersonal motivations for concealing one's bi+ identity than cisgender women. Gender non-binary individuals face unique challenges related to invisibility, having their gender misperceived by others, and exclusion from binary transgender communities (Fiani & Han, 2019; Matsuno & Budge, 2017). These challenges are similar to the experiences of bi+ individuals, who also experience invisibility, having their sexual orientation misperceived by others, and exclusion from gay/lesbian communities (Feinstein & Dyar, 2017). Given that individuals who identify as both gender non-binary and bi+ can experience challenges related to both of their non-binary identities, they may be particularly motivated to conceal

their bi+ identity (and possibly their gender non-binary identity as well) because of concerns about being judged or treated negatively, rejected, or putting oneself at risk of physical harm. It will be important for future research to examine whether motivations for concealing one's bi+ identity differ from motivations for concealing one's gender non-binary identity among individuals who identify as both gender non-binary and bi+. Further, given that all transgender and gender non-binary individuals make decisions about whether to disclose or conceal their gender identity, it will be important for future research to examine the extent to which concealment of multiple stigmatized identities (e.g., transgender or non-binary identity, bi+ identity) influences the mental health of individuals who identify as both transgender or non-binary and bi+.

It is important to acknowledge that the items on our interpersonal motivation factor appeared to reflect a more unitary construct than the items on our intrapersonal motivation factor. Specifically, all of the items on the interpersonal motivation factor reflected concealment motivated by the desire to avoid stigma. In contrast, the items on the intrapersonal motivation factor appeared to reflect concealment motivated by low identity centrality as well as concealment motivated by discomfort with one's bi+ identity. As such, it is possible that our intrapersonal motivation factor was not significantly associated with depression and generalized anxiety because it may reflect two constructs with different consequence for mental health. However, our EFA suggested that our two-factor solution was a better fit to our data than a three-factor solution, and supplemental analyses revealed that separating our intrapersonal motivation factor into two factors did not change the results. As such, our findings suggest that interpersonal motivations for concealment are particularly likely to contribute to negative mental health outcomes.

The current study was the first to examine the extent to which different motivations for concealing one's bi+ identity were associated with depression and generalized anxiety symptoms. Further, we addressed our novel research questions in a large sample of bi+ individuals that was diverse in terms of gender/sex. Transgender and non-binary individuals were well represented in our sample, which is critical for research on bi+ people's experiences given that transgender and non-binary individuals are particularly likely to identify as bi+ (James et al., 2016). However, it had a number of limitations. First, all of our participants were recruited online, and the majority of them identified as White and had completed some college or a college degree. Second, given the lack of validated measures of motivations for sexual orientation concealment, we developed a set of items specifically for this study, and it will be important to continue to examine the reliability and validity of our measure in other samples. Further, although we pilot tested our measure with a small sample of bi+ individuals, the majority of them were white and specifically identified as bisexual (as opposed to pansexual or queer) and the measure may not have captured the full range of possible motivations for concealment. As such, it will also be important to continue to examine bi+ people's motivations for concealing their sexual orientation in future qualitative research with larger, more diverse samples. If additional motivations are identified, then additional items could be created and added to the measure. In order to understand the factors driving motivations for concealment, it will also be important to examine the influence of minority stress (e.g., discrimination, internalized stigma) on these motivations. Finally, although we observed significant positive associations between concealment and

negative mental health outcomes (depression and generalized anxiety), it is possible that an unobserved variable (e.g., living in an unsafe environment) could be contributing to both. As such, it will be important for future research on the negative mental health consequences of concealment to account for potential confounding variables.

Despite these limitations, our study advances our understanding of sexual orientation concealment by highlighting the importance of considering people's motivations for concealing their bi+ identity. Furthermore, the findings have implications for clinicians working with bi+ individuals who may be dealing with the challenges of identity concealment. In such cases, clinicians can help bi+ individuals to evaluate the potential risks and benefits of disclosing their bi+ identity in different contexts. They can also teach bi+ individuals skills for coping with the negative emotional consequences of concealment. These coping skills can also be useful if a bi+ individual decides to disclose their identity and they experience discrimination or rejection. Finally, in working with bi+ individuals, clinicians should be careful not to assume that concealment is always motivated by concerns about stigma or that concealment will always result in negative consequences. Clinicians should carefully assess motivations for concealment and intervene accordingly.

Acknowledgements:

Author Bios

Dr. Brian Feinstein received his PhD in Clinical Psychology from Stony Brook University in 2015. He is currently a Research Assistant Professor at the Institute for Sexual and Gender Minority Health and Wellbeing (ISGMH) at Northwestern University. His program of research focuses on understanding and reducing the health disparities affecting sexual and gender minority (SGM) populations, especially bisexual and other non-monosexual individuals. He is interested in understanding how different types of stress (e.g., discrimination, internalized stigma, rejection sensitivity) influence mental health, substance use, sexual risk behavior, and relationship functioning among SGM individuals and couples. He is also interested in developing and testing interventions to improve health and relationships in these populations. Dr. Feinstein is also a licensed clinical psychologist in the state of Illinois.

Dr. Casey Xavier Hall is a postdoctoral research fellow at the Institute for Sexual and Gender Minority Health and Wellbeing at Northwestern University. He received his Ph.D. in Behavioral Sciences and Health Education and his MPH in Global Health from the Rollins School of Public Health at Emory University. His research focuses on social influences on sexual health, violence, and substance use disparities.

Dr. Christina Dyar received her PhD in Social and Health Psychology from Stony Brook University in 2016. She is currently a research assistant professors at the Institute for Sexual

and Gender Minority Health and Wellbeing. Her research broadly focuses on understanding and reducing health disparities affecting sexual and gender minority populations, especially sexual minority women and bisexual individuals. She is particularly interested in understanding mechanisms through which minority stressors (e.g., discrimination, internalized stigma) impact mental health and substance use and how these processes differ for bisexual compared to lesbian/gay individuals and among other subgroups of sexual and gender minorities.

Dr. Joanne Davila is a Professor of Psychology at Stony Brook University. She received her PhD in Psychology from UCLA. Dr. Davila's expertise is in the area of romantic relationships and mental health in adolescents and adults of all sexual and gender orientations, and she has published widely in these areas. Her current research focuses on romantic competence among youth and emerging adults, the development of relationship education programs, and well-being and relationship functioning among lesbian, gay, and bisexual+ individuals. Dr. Davila also is a licensed clinical psychologist who specializes in evidence-based interventions for relationship problems, depression, and anxiety.

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Table 1

Demographic differences in concealment and motivations for concealment

Predictor	Concealment		Intrapersonal motivations		Interpersonal motivations	
	OR	p	β	p	β	p
Age	.97	<.001	.02	.74	−.01	.93
Primary sexual identity						
Bisexual	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Pansexual	.58	.01	−.05	.35	−.05	.41
Queer	.81	.32	−.04	.53	−.09	.16
Other identity	.71	.29	.07	.28	−.08	.20
Race/ethnicity						
White	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
People of color	1.12	.54	.04	.54	.05	.29
Gender/sex						
Cisgender women	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Cisgender men	1.35	.14	.10	.14	−.05	.44
Transgender women	.54	.05	.01	.90	−.001	.99
Transgender men	.46	.08	−.01	.84	−.03	.62
Non-binary individuals	1.09	.67	−.11	.10	.17	.02
Multiple label use						
No	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Yes	1.21	.22	.05	.41	−.04	.51

Note. Race/ethnicity, gender/sex, sexual identity, and multiple label use were dummy-coded for analyses; white was the reference group for race/ethnicity, cisgender women was the reference group for gender/sex, bisexual was the reference group for primary sexual identity, and "no" was the reference group for multiple label use.

Table 2

Factor loadings for the motivation for concealment items

Item	Intrapersonal motivations	Interpersonal motivations
It is not a central part of my identity.	**.59**	−.15
It is not anyone else's business.	**.64**	−.10
I am not comfortable with having others know that I am bi+.	**.65**	.20
I am not comfortable with being bi+.	**.69**	.02
I am concerned about being judged or treated negatively.	.03	**.76**
I am concerned that others would reject me.	−.01	**.84**
I am concerned that it would upset people who matter to me.	.20	**.46**
I am concerned that I would be putting myself at risk of physical harm.	.22	**.43**

Bold font indicates factor loadings that were greater than .40.