DO ROMANTIC RELATIONSHIP FACTORS BUFFER THE NEGATIVE EFFECT OF BINEGATIVE STRESS ON MENTAL HEALTH AMONG BISEXUAL WOMEN?

by

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Abstract

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Do Romantic Relationship Factors Buffer the Negative Effect of Binegative Stress on Mental Health Among Bisexual Women?

Thesis directed by Professor Mark A. Whisman

People who are attracted to individuals of multiple genders (i.e., bi+ people) experience unique minority stressors (i.e., binegative events) that increase their risk for depression and anxiety. Prior research suggests that these associations are mediated by the internalization of negative thoughts, feelings, and stigma about one's bi+ identity (i.e., internalized binegativity). However, little is known about factors that may protect bi+ individuals against the detrimental effects of binegative events on mental health. This study examined romantic relationship factors as moderators of the association between binegative events and mental health in a sample of cisgender bi+ women using a 28-day diary study and a longitudinal panel design. Cisgender bi+ women in a married or cohabiting romantic relationship ($N = 155$) completed daily measures of sad and fearful affect, binegative events, event severity, disclosure of events to their partner, and partner's responsiveness to event disclosures, and completed measures of relationship adjustment, internalized binegativity, and internalizing symptoms (i.e., depressive and anxiety symptoms) at baseline, day 21, and day 28. We used linear mixed models to examine the degree to which disclosure and perceived partner responsiveness buffered the same-day associations between binegative event severity and sad and fearful affect, and used multiple regression and nonparametric bootstrapping to examine the degree to which internalized binegativity at day 21 accounted for the hypothesized interaction between baseline relationship adjustment and

binegative events on internalizing symptoms at day 28. Results indicated that participants reported higher sad and fearful affect when they experienced more binegative events throughout the study, and higher than their average sad affect on days that they experienced a binegative event. Among participants who reported any binegative events, reporting higher average event severity was associated with higher average sadness and fear, but within-person associations between event severity and sadness and fear were not significant. Neither disclosure of binegative events to one's partner nor perceived partner responsiveness to the disclosure were found to moderate any of these associations. Baseline relationship adjustment did not moderate the association between binegative events and internalizing symptoms in the panel study.

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Chapter 1: Introduction

People who are attracted to individuals of more than one gender (e.g., bisexual, pansexual, and queer people; collectively termed as "bi+") are at increased risk for mental health problems relative to heterosexual, gay, and lesbian individuals (for a review, see Feinstein & Dyar, 2017). Specifically, studies have found that bi+ individuals exhibit heightened risk for depression (Bostwick et al., 2010; Ross et al., 2018), anxiety (Bostwick et al., 2010; Ross et al., 2018), substance use (McCabe et al., 2010), and suicide ideation and suicide attempts (Salway et al., 2019). Several studies have suggested that among bi+ people, negative mental health outcomes are predicted by anti-bisexual experiences (i.e., binegative events), such as stigma, discrimination, and bias related to one's bi+ identity (e.g., Brewster & Moradi, 2010; Dyar & London, 2018; MacLeod et al., 2015). Research has further suggested that the internalization of negative thoughts, feelings, and stigma about one's bi+ identity (i.e., internalized binegativity) may mediate the association between binegative events and mental health outcomes (Brewster & Moradi, 2010; Dyar et al., 2017; Dyar & London, 2018). Despite a body of research suggesting that binegative events and internalized binegativity may play an influential role on mental health outcomes for bi+ people, there has been very little focus on factors that may protect against the negative impact of these stressors on mental health outcomes. In response to this gap in the literature, researchers have recently published calls to action to identify factors that promote bi+ mental health and to develop therapeutic interventions for the prevention and treatment of psychopathology among bi+ people (Feinstein et al., 2019; National Institutes of Health, 2019; Taylor, 2018).

One factor that has been shown to be closely entwined with mental health and well-being among heterosexual and sexual minority individuals is romantic relationship functioning (e.g.,

Whisman & Baucom, 2012). For instance, greater relationship quality may buffer or weaken the association between stress and psychopathology (e.g., S. R. H. Beach et al., 2019; Cohen & Wills, 1985). The present study examined the degree to which several facets of romantic relationship functioning serve as moderators of the association between binegative events and internalizing symptoms among cisgender bi+ women, as well as the degree to which this process is mediated by individuals' level of internalized binegativity.

Binegative Stressors and Mental Health

The most well-supported theory to explain higher rates of mental health difficulties among sexual minority individuals is minority stress theory (Meyer, 2003), which proposes that sexual minority individuals experience heightened risk of psychopathology symptoms and disorders due to the additional stress (i.e., minority stress) that they experience as a result of their stigmatized identities. These stressors fall into two broad categories: distal stressors, which include experiences that are external to the individual, such as discrimination and stigma, and proximal stressors, which are the internal negative feelings and thoughts that sexual minority individuals may hold as a result of holding a stigmatized sexual orientation (Meyer, 2003).

Although most sexual minority individuals experience distal minority stressors to some degree, there is a body of research suggesting that bi+ individuals experience unique binegative minority stressors. These unique binegative minority stressors are postulated to account for higher rates of psychopathology among bi+ individuals relative to lesbian and gay individuals. For example, acceptance of same-sex couples and homosexuality has increased in recent years (Pew Research Center, 2019), yet bisexuality remains stigmatized (e.g., Dodge et al., 2016). One study found that North Americans' attitudes toward bi+ individuals were more negative than attitudes toward any other group, including religious groups, ethnic groups, and political groups,

with the only exception being injecting drug users (Herek, 2002). Unique messages that bi+ people receive from others include the notions that bisexuality is illegitimate, that bi+ individuals are uncertain about their sexual orientation, and that bi+ people are sexually irresponsible or unable to have a monogamous relationship (Feinstein & Dyar, 2017). Monosexual individuals (i.e., individuals who are attracted to only one gender) may refuse to date bi+ people due to the fear that they will be cheated on, or may pressure a bi+ person to "choose a side" (L. Beach et al., 2019). Bi+ people are also more likely to experience a sense of invisibility or invalidity of their sexual orientation than people of other sexual orientations, and monosexual individuals often make the assumption that bi+ people are lesbian/gay or heterosexual depending on the gender of their partner (Hequembourg & Brallier, 2009).

Furthermore, bi+ people experience stigma from both heterosexual and lesbian/gay individuals (Dodge et al., 2016; Dworkin, 2002; McLean, 2008a), whereas lesbian and gay individuals generally experience stigma only from heterosexual individuals. Negative beliefs about bi+ orientations that some lesbian and gay individuals may endorse include the notion that bi+ individuals are sexually irresponsible (Dodge et al., 2016; Israel & Mohr, 2004), are unable to commit to monogamous relationships (McLean, 2008b), and that bi+ people are actually gay or lesbian but are ashamed to endorse these identities (Roberts et al., 2015), which leads some bi+ individuals to feel excluded from LGBTQ+ community spaces (McLean, 2008a). This "double discrimination" from heterosexual individuals and lesbian/gay individuals may result in bi+ individuals struggling to find community or support around their bi+ identity (L. Beach et al., 2019; Dworkin, 2002; McLean, 2008a)

Consistent with minority stress theory, experiences of distal binegative stress (i.e., binegative events) have been shown to be associated with higher rates of psychopathology

among bi+ people in cross-sectional studies (Brewster et al., 2013; Brewster & Moradi, 2010; Hequembourg & Brallier, 2009; MacLeod et al., 2015). Additionally, one daily diary study found that bi+ people experience an average of 1.3 microaggressions (i.e., subtle forms of discrimination) per day, and that frequency of microaggressions was associated with anxiety symptoms within-subjects (Flanders, 2015); another daily diary study found that frequency of microaggressions was associated with depressive symptoms within-subjects in a sample of bi+ women (Salim et al., 2019). Binegative events were similarly associated with depressive and anxiety symptoms within-subjects in an additional daily diary study of bi+ people (Feinstein et al., 2022). Further, a longitudinal study of bi+ cisgender women found that binegative events were associated with increases in internalized binegativity, and that increases in internalized binegativity were associated with increases in anxiety and depression (Dyar & London, 2018). Other studies have also found that heightened internalized binegativity may mediate the association between binegative events and mental health (e.g. Brewster & Moradi, 2010; Dyar et al., 2017; Dyar, Feinstein, Sarno, et al., 2021), suggesting that the experience of binegative events may lead to negative thoughts, feelings, and perceptions regarding one's own bisexuality, which are then associated with greater symptoms of psychopathology.

Although bi+ individuals exhibit greater symptoms of psychopathology in general than gay and lesbian individuals, some studies have found that these health disparities may be greater for bi+ cisgender women than for bi+ cisgender men. For example, one study found that 59% of bi+ women had a lifetime history of an anxiety disorder, compared to 41% of lesbian and 31% of heterosexual women (Bostwick et al., 2010). The same study found that 59% of bi+ women had a lifetime history of any mood disorder, compared to 44% of lesbian and 31% of heterosexual women. Additionally, compared to heterosexual women, bi+ women were 2.1 times more likely

to meet criteria for any past-year mood disorder and 2.2 times more likely to meet criteria for any past-year anxiety disorder. By contrast, lesbian women were 1.6 and 1.7 times more likely to meet criteria for any past-year mood or past-year anxiety disorder, respectively, compared to heterosexual women (Bostwick et al., 2010). Further, one meta-analysis found that bi+ individuals had an elevated risk of suicide ideation and intent than lesbian/gay individuals, and that this disparity was larger for women than for men (Salway et al., 2019).

Romantic Relationship Functioning as a Stress Buffer

Among heterosexual individuals, the quality of one's intimate or romantic relationship is negatively associated with anxiety (Overbeek et al., 2006; Whisman, 2007), depression (Whisman, 2001, 2007), substance use (Overbeek et al., 2006; Whisman, 2007), and suicide ideation and suicide attempts (Robustelli et al., 2015; Till et al., 2017), and is positively associated with well-being (Proulx et al., 2007). Considerably less research has investigated the association between relationship quality and psychopathology among sexual minority individuals. However, what research does exist similarly indicates that in samples of sexual minority individuals, relationship quality is negatively associated with depressive symptoms (Frost & Meyer, 2009; Gilmour et al., 2019, 2021; Whitton & Kuryluk, 2014), anxiety symptoms, alcohol use, and substance use (Li et al., 2021). Research in samples not recruited for sexual minority status also suggests that improvements in romantic relationship quality may lead to lower levels of psychopathology. For instance, relationship interventions that have been developed to target specific disorders, including depression, indicate that improving relationship functioning may be a viable pathway towards improving mental health (for a meta-analysis, see Barbato & D'Avanzo, 2020). Additionally, interventions that target relationship quality have been shown to be effective in reducing symptoms of psychopathology among individuals not

recruited for the presence of a disorder (e.g., Atkins et al., 2009; Doss et al., 2016).

Romantic relationship functioning may be particularly important in the context of stress. Cohen and Wills' (1985) stress-buffering hypothesis posits that social support from close others mitigates the negative effects of stress directly (e.g., via a romantic partner intervening on, or helping to reduce, the stressor) or indirectly (e.g., via reducing perceptions of stress). Research has supported the stress-buffering hypothesis regarding stressful life events in general, finding that romantic support buffers against the negative effects of stress on physical and mental health outcomes (S. R. H. Beach et al., 2019; Graham & Barnow, 2013; Hostinar, 2015). For instance, one study found that, in a sample of same- and different-gender couples, partner social support moderated the negative association between stressful life events over the past year and well-being, such that higher levels of partner support were associated with a weaker association between stress and well-being (Graham & Barnow, 2013). Less research has examined the stress-buffering hypothesis in the context of discriminatory or stigmatizing events. However, Beach and colleagues (2019) found that among African American young adults, perceived relationship warmth and support moderated the association between contextual stressors (i.e., financial strain, victimization, and racial discrimination) and inflammation, such that greater perceived relationship warmth and support was associated with a weaker association between contextual stressors and inflammation.

Reis and Shaver's (1988) intimacy process model may be a helpful framework in elucidating the process by which relationship quality may buffer the effects of negative events on mental health. This model proposes that disclosing thoughts and feelings about stressful events to one's partner, and receiving a response that communicates support, understanding, acceptance, and validation (i.e., partner responsiveness), builds intimacy and may affect the impact of the

event on mental health and well-being (Reis & Shaver, 1988). Disclosure of stressful events to one's partner and perceived partner responsiveness (PPR) are positively associated with relationship satisfaction (e.g. Laurenceau et al., 2005; Pagani et al., 2019). PPR has also been shown to exhibit associations with several mental health outcomes. For example, greater PPR has been shown to be associated with lower symptoms of depression and anxiety (Selcuk et al., 2017), greater well-being over time (Selcuk et al., 2016), and lower negative affect reactivity (Selcuk et al., 2016). Little research has been conducted on the associations between level or amount of disclosure of negative events to one's partner and mental health; however, disclosure may be expected to exhibit similar associations to health outcomes as partner responsiveness, considering that disclosure may facilitate partner support, validation, understanding, and acceptance (e.g., Laurenceau et al., 2005). Therefore, disclosure and partner responsiveness may be key pathways by which positive relationship functioning, such as high relationship adjustment, serves as a protective factor for mental health in the context of adverse events.

Given the previously described associations between relationship quality and specific facets of relationship functioning (e.g., disclosure, perceived partner responsiveness) and mental health, relationship functioning may be an important protective factor to examine among bi+ individuals. Although relationship functioning been shown to be important for heterosexual and sexual minority individuals alike, bi+ individuals' romantic partners may serve as an especially important source of support, given that bi+ individuals are more likely to feel excluded by both heterosexual and lesbian and gay communities (Dworkin, 2002; McLean, 2008a). Talking with one's partner about binegative events and receiving a supportive, understanding, accepting, and validating response may serve as a buffer against the impact of binegative events on bi+ individuals' mental health, including their level of internalizing symptoms. However, very little

research has examined the degree to which relationship quality, disclosure, and partner responsiveness buffer against the effects of sexual minority stress on mental health among sexual minority individuals in general, and no research that we know of has examined this hypothesis in a sample exclusively composed of bi+ individuals.

One study of same-sex couples found that receiving empathy and understanding from one's partner (i.e., supportive coping, a construct similar to partner responsiveness) following a sexual orientation discrimination event moderated the association between sexual orientation discrimination and depressive symptoms in a sample of same-sex couples (Randall, Tao, et al., 2017). Specifically, the authors found that there was a positive association between sexual orientation discrimination stress and depressive symptoms among individuals who perceived low (-1 standard deviation) supportive coping from their partner, whereas there was no association between sexual orientation discrimination stress and depressive symptoms among individuals who perceived high (+1 standard deviation) supportive coping from their partner. Further, in another study, supportive coping was found to be a marginally significant (p = .076) buffer of the association between workplace sexual minority stress and symptoms of anxiety in a sample of women in same-sex relationships, such that the association between workplace sexual minority stress and anxiety symptoms was weaker at higher levels of supportive coping (Randall, Totenhagen, et al., 2017). Finally, a study of 387 male same-sex couples found that joint dyadic coping (i.e., joint efforts by both partners to cope with stress) moderated the association between heterosexist microaggressions and internalizing symptoms (i.e., depressive and anxiety symptoms), such that there the positive association between heterosexist microaggressions and internalizing symptoms was weaker for individuals who engaged in greater levels of joint dyadic coping (Sarno et al., 2021). Research is needed to examine whether similar buffering effects of

relationship adjustment, disclosure, and PPR are found among bi+ individuals experiencing binegative stress. Further, to our knowledge, no research has examined the degree to which internalized binegativity may mediate this buffering effect. It is possible that among bi+ people, greater relationship functioning will limit the impact that binegative events have on internalized binegativity, therefore decreasing the impact of binegative events on internalizing symptoms.

The Present Study

The overarching goal of this study was to evaluate the degree to which relationship functioning buffers against the effects of binegative events on several indicators of internalizing symptoms in a sample of bi+ cisgender women, as well as the degree to which individuals' level of internalized binegativity accounts for this association.

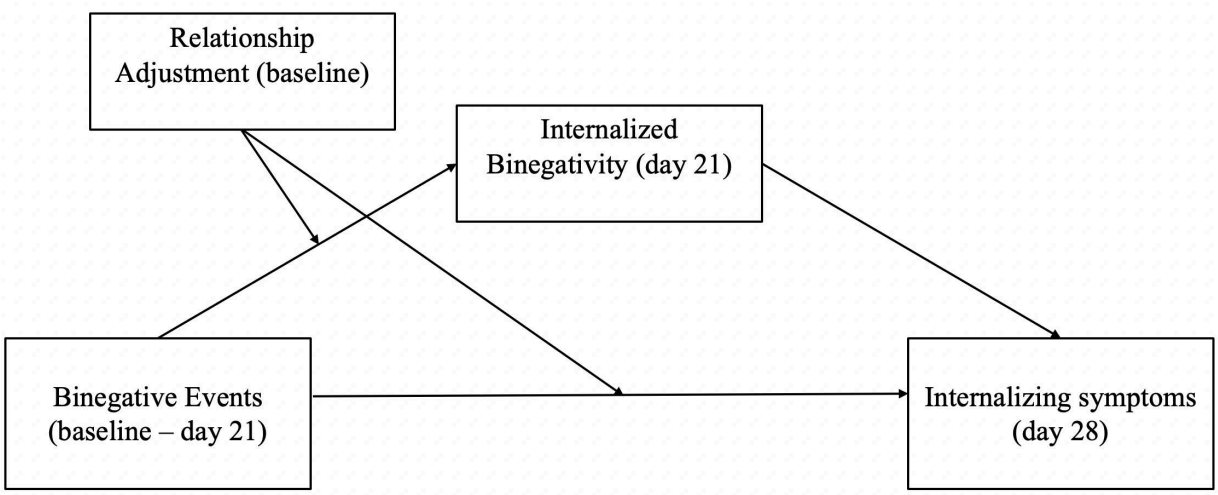
First, the present study examined the degree to which level of disclosure about a binegative event to one's partner and perceived partner responsiveness toward the disclosure (i.e., how understood, validated, accepted, and cared for by their partner the bi+ individual felt following the disclosure) moderated the associations between the severity of binegative events and sad and fearful affect. To achieve this goal, the study utilized a 28-day daily diary design. Daily diary methodology is more accurate than retrospective data collection because it does not rely on memory of prior events (Bolger & Laurenceau, 2013). Daily diary methodology also allows for the examination of within-person processes (e.g., Shiffman et al., 2008), making these methods well-suited to investigate the impact of binegative events, disclosure of these events, and a partner's response to the disclosure of these events, on mental health (Almeida, 2005).

Additionally, the study examined the degree to which overall relationship adjustment buffered the hypothesized positive association between binegative events and increases in depressive and anxiety symptoms over time, and the degree to which internalized binegativity

accounted for this moderation effect. To achieve this goal, the study included a longitudinal panel design, with measures of relationship adjustment, internalized binegativity, and depressive and anxiety symptoms collected at day 1 (baseline), day 21 (3 weeks), and day 28 (4 weeks) of the 28-day daily diary study. This mediated moderation model is depicted in Figure 1.

Figure 1

Mediated Moderation Model



Note. Theoretical model of the proposed mediated moderation process in which relationship adjustment moderates the association between binegative events and internalizing symptoms (i.e., depressive and anxiety symptoms) through internalized binegativity.

Relative to a cross-sectional design, a longitudinal design provides greater support for drawing potential causal inferences regarding the association between binegative events, relationship adjustment, internalized binegativity, and mental health outcomes (Raudenbush, 2001).

Regarding the longitudinal outcome measures, we chose to focus on depressive and anxiety symptoms over a one-month interval because depressive and anxiety disorders are the most common 12-month (Kessler, Wai, et al., 2005) and lifetime (Kessler, Berglund, et al., 2005)

mental health conditions among the general population, and are likely to represent the greatest collective mental health burden for bi+ women relative to other symptoms and disorders (Ross et al., 2018). Additionally, bi+ women have consistently exhibited higher rates of anxiety and mood disorders than lesbian and heterosexual women across a range of studies (e.g., Bostwick et al., 2010; Ross et al., 2018), and the experience of binegative events has been positively associated with anxiety and depression in several research studies (e.g., Brewster & Moradi, 2010; Dyar et al., 2015, 2017). Further, there is evidence that the positive association between binegative events and anxiety and depression may be mediated by internalized binegativity (Brewster & Moradi, 2010; Dyar et al., 2017; Dyar & London, 2018).

Regarding the daily outcome measures, we chose to measure sad and fearful affect rather than use daily symptom measures of depression and anxiety. Day-to-day variation in symptoms measures may reflect differences in daily affect rather than meaningful daily symptom variation. Specifically, we chose to use daily measures of sad and fearful affect because they exhibit significant associations with symptom measures of depression and anxiety, respectively (e.g., Domaradzka & Fajkowska, 2019).

Finally, we chose to focus on bi+ cisgender women because the health disparities in depressive and anxiety symptoms have been shown to be larger for bi+ women than for bi+ men (Bostwick et al., 2010). Furthermore, because transgender women are likely to experience additional minority stress experiences, we chose to limit our sample to only individuals who were assigned female at birth and who currently identify as women (i.e., cisgender women).

Specific Aims and Hypotheses

Daily Diary Aims and Hypotheses

1. Aim 1: To examine the within and between-subjects associations between daily

experiences of binegative events and daily ratings of sad and fearful affect.

Hypothesis 1a: We hypothesized that experiencing a binegative event would be significantly and positively associated with sad affect at the within and between-persons levels, controlling for time. Within-subjects, we hypothesized that individuals' sad affect would be higher on days that they experienced at least one binegative event versus days that they experienced no binegative events, controlling for time. Between-subjects, we hypothesized that as average number of days in which individuals experienced a binegative event increased, average sad affect would increase.

Hypothesis 1b: We hypothesized that experiencing a binegative event would be significantly and positively associated with fearful affect at the within and between-persons levels. Within-subjects, we hypothesized that individuals' fearful affect would be higher on days that they experienced at least one binegative event versus days that they experienced no binegative events, controlling for time. Between-subjects, we hypothesized that as average number of days in which individuals experienced a binegative event increased, average fearful affect would increase.

2. Aim 2: To examine the degree to which severity of experienced binegative events, as conceptualized by how much the events bother an individual, exhibits within and between-subjects associations with sad and fearful affect.

Hypothesis 2a: Within-subjects, we hypothesized that the degree to which daily binegative events bothered an individual, as compared to how much binegative events bothered them on average, would be significantly and positively associated with same-day sad affect, controlling for time. Between-subjects, we hypothesized that as average event severity across the 28 days increased, average sad affect would increase.

Hypothesis 2b: Within-subjects, we hypothesized that the degree to which daily binegative events bothered an individual, as compared to how much binegative events bothered them on average, would be significantly and positively associated with same-day fearful affect, controlling for time. Between-subjects, we hypothesized that as average event severity across the 28 days increased, average fearful affect would increase.

3. Aim 3: To examine the degree to which level of disclosure of daily binegative events to one's partner moderates the association between the severity of binegative events and sad and fearful affect at the within and between-subjects levels.

Hypothesis 3a: We hypothesized that level of disclosure of a binegative event to one's partner would moderate the association between the severity of the binegative event and sad affect. Specifically, at the within-persons level, we hypothesized that on days when an individual reported greater disclosure of a binegative event to their partner, the association between the severity of the binegative event and sad affect would be weaker than on days when an individual reported less disclosure of the binegative event to their partner. Additionally, we hypothesized that as average disclosure of binegative events to one's partner increased, the average association between binegative event severity and sad affect would decrease at the between-persons level.

Hypothesis 3b: We hypothesized that level of disclosure of a binegative event to one's partner would moderate the association between the severity of the binegative event and fearful affect. Specifically, at the within-persons level, we hypothesized that on days when an individual reported greater disclosure of a binegative event to their partner, the association between the severity of the binegative event and fearful affect would be

weaker than on days when an individual reported less disclosure of the binegative event to their partner, controlling for time. Additionally, we hypothesized that as average disclosure of binegative events to one's partner increased, the average association between binegative event severity and fearful affect would decrease at the between-persons level.

4. Aim 4: To examine the degree to which PPR following disclosure of a binegative event moderates the association between the severity of binegative events and sad and fearful affect at the within and between-subjects levels.

    Hypothesis 4a: We hypothesized that level of PPR following disclosure of a binegative event would moderate the association between the severity of the binegative event and sad affect. Specifically, at the within-persons level, we hypothesized that on days when an individual reported greater PPR following disclosure of a binegative event, the association between the severity of the binegative event and sad affect would be weaker than on days when an individual reported less PPR following disclosure of a binegative event, controlling for time. Additionally, we hypothesized that as average PPR following disclosure of binegative events increased, the average association between binegative event severity and sad affect would decrease at the between-persons level.

    Hypothesis 4b: We hypothesized that level of PPR following disclosure of a biengative event would moderate the association between the severity of the binegative event and fearful affect. Specifically, at the within-persons level, we hypothesized that on days when an individual reported greater PPR following disclosure of a binegative event, the association between the severity of the binegative event and fearful affect would be weaker than on days when an individual reported less PPR following disclosure of a

binegative event, controlling for time. Additionally, we hypothesized that as average PPR following disclosure of a binegative event increased, the average association between binegative event severity and fearful affect would decrease at the between-persons level.

Between-Subjects Aims and Hypotheses

5. Aim 5: To examine the degree to which participants' level of depressive and anxiety symptoms at follow-up (day 28) are predicted by the interaction between relationship adjustment at baseline and the frequency and severity of binegative events over the first three weeks of the daily diary period.

    Hypothesis 5a: We hypothesized that baseline relationship adjustment would moderate the association between the frequency and severity of binegative events across the first 21 days and depressive symptoms at day 28, such that the association between frequency and severity of binegative events and depressive symptoms at day 28 would be significantly weaker (i.e., less positive) at higher levels of baseline relationship adjustment, controlling for baseline depressive symptoms.

    Hypothesis 5b: We hypothesized that baseline relationship adjustment would moderate the association between the frequency and severity of binegative events across the first 21 days and anxiety symptoms at day 28, such that the association between frequency and severity of binegative events and anxiety symptoms at day 28 would be significantly weaker (i.e., less positive) at higher levels of baseline relationship adjustment, controlling for baseline anxiety symptoms.

6. Aim 6: To examine the degree to which participants' level of internalized binegativity at 21 days is predicted by the interaction between relationship adjustment at baseline and

the frequency and severity of binegative events over the first three weeks of the daily diary period.

Hypothesis 6: We hypothesized that baseline relationship adjustment would moderate the association between frequency and severity of binegative events and internalized binegativity, such that the association between frequency and severity of binegative events and internalized binegativity would be significantly weaker (i.e., less positive) at higher levels of baseline relationship adjustment, controlling for baseline internalized binegativity.

7. Aim 7: To examine the degree to which internalized binegativity is associated with depressive and anxiety symptoms when controlling for the interaction between the frequency and severity of binegative events and relationship adjustment.

   Hypothesis 7a: We hypothesized that internalized binegativity at day 21 would be positively associated with depressive symptoms at day 28 when controlling for baseline internalized binegativity and the interaction between the frequency and severity of binegative events and baseline relationship adjustment.

   Hypothesis 7b: We hypothesized that internalized binegativity at day 21 would be positively associated with anxiety symptoms at day 28 when controlling for baseline internalized binegativity and the interaction between the frequency and severity of binegative events and baseline relationship adjustment.

8. Aim 8: To examine the degree to which the moderation of the association between the frequency/severity of binegative events and depressive and anxiety symptoms by relationship adjustment is mediated by level of internalized binegativity at 21 days.

Hypothesis 8a: We hypothesized that internalized binegativity would mediate the interaction between baseline relationship adjustment and the frequency and severity of binegative events on day 28 depressive symptoms. Specifically, we hypothesized that the interaction between relationship adjustment and binegative events on depressive symptoms described in Hypothesis 5a would be through the indirect path of internalized binegativity (see Figure 1).

Hypothesis 8b: We hypothesized that internalized binegativity would mediate the interaction between relationship adjustment and the frequency and severity of binegative events on day 28 anxiety symptoms. Specifically, we hypothesized that the interaction between relationship adjustment and binegative events on anxiety symptoms described in Hypothesis 5b would be through the indirect path of internalized binegativity (see Figure 1).

Chapter 2: Method

Participants

Our analytic sample consisted of 155 cisgender non-monosexual bi+ women who lived in the US, were 18 years of age or older, and who were married or in a cohabiting monogamous romantic relationship. A sample of bi+ women were first recruited to complete a pre-screen survey via Reddit, an online social media platform, and Prolific, an online data recruitment platform. First, on Reddit, advertisements were posted to subreddits geared toward bi+ individuals, sexual and gender minority (SGM) individuals more broadly, and to subreddits specifically for research participant recruitment. Previous research on the relationships of LGBTQ+ people has successfully recruited from social media platforms, including Reddit (e.g., Newcomb et al., 2021). We received 588 responses to the pre-screen questionnaires from Reddit.

Participants from Reddit were compensated $3 for completing the pre-screen survey.

To determine eligibility for the 28-day study, individuals completed a consent form and pre-screen questionnaires on Qualtrics assessing their age, self-identified sexual orientation, gender, sex assigned at birth, relationship status and length, the gender and sexual orientation of their partner, the country in which they live, whether they speak English, whether they own a smartphone, and their current relationship adjustment. Unfortunately, despite language in the recruitment post and consent form that specified the eligibility criteria for the study, a large percentage of Reddit-recruited pre-screen surveys did not meet these criteria. Specifically, 304 responses (51.7%) to the survey did not meet our eligibility criteria (i.e., being cisgender non-monosexual women 18+ years of age who lived in the US and were in a married or cohabiting romantic relationship). Of the remaining 284 responses, 145 responses were from duplicate IP addresses, with an individual from one IP address completing the survey 24 times. After excluding responses from duplicate IP addresses, this left us with 139 eligible responses. We then removed 9 individuals with a low score (<.5) on the Captcha, 2 individuals who had very high durations for completing the study (i.e., more than twice the next longest completion time), and 1 individual who had skipped 5 of the 16 items assessing relationship adjustment. The remaining 127 participants were sent an email inviting them to complete the 28-day study. Of the 127 participants who were invited, 39 individuals enrolled in the 28-day study. Five individuals did not provide an email address in the baseline survey that had been used by someone who was approved from the pre-screen, which disqualified them from completing the study. Twenty-one individuals provided data in the baseline survey that was a mismatch from what they reported in the pre-screen, such as an age that was over 1 year different from what they had reported in the pre-screen. These 26 individuals were disqualified from completing the study. This left us with

13 individuals from Reddit who completed the study.

Due to the poor data quality we received from Reddit, we decided to use Prolific to recruit the rest of our sample. Prolific is an online data recruitment platform that pre-screens participants on several demographic and other characteristics; researchers are able to specify the demographics they are interested in, and then Prolific participants who qualify based on these characteristics receive an email notifying them that the study is available. Prolific has been found to produce high quality behavioral research data from participants who are more naïve and less dishonest than participants from other crowdsourcing websites such as Amazon Mechanical Turk (Peer et al., 2017). We suspected that the high compensation to Reddit participants ($3) for a short (> 5 minute) pre-screen survey contributed to our poor data quality because non-eligible participants were motivated to complete the study. Therefore, we compensated Prolific participants $1.25 for completing the pre-screen survey. We specified that participants must be biologically female, cisgender women, bisexual, in a relationship, engaged, married, separated, or in a civil partnership, living with their spouse/partner, and fluent in English to complete the pre-screen.

A total of 315 individuals recruited from Prolific completed the pre-screen survey. Of these individuals, 23 individuals did not meet inclusion criteria for the 28-day study and 1 individual did not qualify due to the high duration of time it took them to complete the survey. The remaining 291 individuals were invited to complete the study, and 177 of them enrolled. One person was excluded for reporting her relationship status as single after completing the baseline survey, and 8 did not complete any daily surveys, leaving 168 individuals from Prolific who contributed any data to the study. Therefore, our total sample, including both Reddit and Prolific users, was 181 individuals. However, partway through data collection, there was an

update made to the smartphone application that caused the skip logic in the survey to break for Android users. This impacted 25 individuals, leaving us with 156 participants who had usable data. One additional individual who was a significant outlier was removed from analyses, which left us with 155 participants in our analytic sample.

Procedures

Individuals were pre-screened to determine study eligibility (see "Participants" section). When participants were invited to complete the 28-day study, they were provided instructions on how to download the smartphone application ExpiWell (https://app.expiwell.com), which was designed for distributing experience sampling research. In ExpiWell, researchers can enter surveys and program them into a schedule, such that surveys become available for participants to complete on particular days and times of the study.

After participants provided consent, they completed a baseline survey on ExpiWell reporting their demographic information, including their age, gender, sex assigned at birth, self-identified sexual orientation, marital and cohabitation status, current relationship length, zip code, approximate yearly income, race, ethnicity, and the gender and sexual orientation of their partner. The baseline survey also included self-report measures assessing relationship adjustment, depressive and anxiety symptoms, and internalized binegativity. A battery including self-report measures of relationship adjustment, depressive and anxiety symptoms, and internalized binegativity was also collected on day 21 and day 28 of the study.

Daily diary surveys became available at 6:00 pm each day of the 28-day study, at which time participants were sent a smartphone notification with a reminder to complete the daily survey. Participants were sent an additional reminder at 8:00 pm if they had not already completed that day's survey and had until 11:59 pm to complete each survey before it closed for

the day. In the daily surveys, participants reported their sad and fearful affect at the time of completing the survey, the number of binegative event(s) they experienced that day, the severity of the event(s) (i.e., to what degree the event(s), taken together, were bothersome), to what extent they disclosed the daily event(s) to their partner, and perceived partner responsiveness to the disclosure of the event(s).

Participants were compensated $1 for each daily survey completed and a $10 bonus if at least 21 of the 28 daily surveys were completed, consistent with participant compensation in a recent daily diary study of bi+ individuals (Dyar, Feinstein, Bettin, et al., 2021). Additionally, participants were compensated $5 for completion of each of the survey batteries at day 1, day 21, and day 28. All compensation was provided in Amazon gift cards after the participant finished the study. After data collection was complete, participants who had not missed any daily or longitudinal surveys throughout the study were eligible for a raffle to win a $200 gift card or $200 donation to a charity of their choice.

Measures

Demographic and Relationship Information

At baseline, participants self-reported demographic information and relationship characteristics including their age, gender, sex assigned at birth, self-identified sexual orientation, marital and cohabitation status, current relationship length, zip code, approximate yearly income, race, ethnicity, and the gender and sexual orientation of their partner. For gender, participants were asked “How do you identify your gender? (select all that apply)” with the options “man,” “woman,” “non-binary,” “transgender,” “prefer to self-describe,” and “prefer not to say.” For sex assigned at birth, participants were given the options of “male,” “female,” or “intersex.” For sexual orientation, participants were asked “How do you identify your sexual

orientation? (select all that apply)" with the options "bisexual," "pansexual," "queer," "polysexual," "omnisexual," "plurisexual," "fluid," "demisexual," "questioning," "asexual," "gay/lesbian," "straight/heterosexual," "not listed: please specify," and "prefer not to say."

When reporting their romantic partner's gender and sexual orientation, participants were asked parallel questions to those asked for their own gender and sexual orientation (e.g., "How does your romantic partner identify their gender? (select all that apply)."") The options for both questions were the same as the options that the participant could self-report for their own gender and sexual orientation, but with an additional item for each, "I am not sure." Marital and cohabitation status was assessed with the question, "What is your marital status?" with the options "single," "married/remarried," "cohabitating," "separated," "divorced," and "widowed," and "Do you live with your romantic partner?" Participants were asked to report their relationship length in years and months.

For annual household income, participants were asked what their annual household income was in 2021 before deductions for taxes, bonds, dues, or other items. They were also asked how much total combined money all members of their household earned in 2021 with 10 options of intervals of $9,999, and the highest option of "$100,000 or more." For race, participants were asked "What race do you consider yourself to be? (select all that apply)" with the options "White," "Black or African American," "Native Hawaiian or Other Pacific Islander," "Asian," "American Indian or Alaska Native," and "Other (please specify)." For ethnicity, participants were asked "Do you consider yourself to be Hispanic, Latino, or of Spanish origin?" with the options "yes" and "no."

Battery Collected on Day 1, Day 21, and Day 28

Relationship Adjustment. Relationship adjustment was assessed using the 16-item

Couples Satisfaction Index (CSI-16; Funk & Rogge, 2007). Items are rated on 6- and 7-point scales and are summed (α = 0.97 to 0.98 across time points in the present study) to get an estimate of global relationship adjustment. Scores range from 0-81, with higher scores indicating greater relationship adjustment; individuals with scores < 51.5 are considered to have "significant relationship distress." Example items include "In general, how often do you think that things between you and your partner are going well?" and "To what extent has your relationship met your original expectations?". The CSI-16 exhibits greater precision of measurement for detecting differences in relationship adjustment than other commonly-used measures (Funk & Rogge, 2007).

Depressive Symptoms. Depressive symptoms were assessed using the 8-item Patient Health Questionnaire (Kroenke et al., 2010). Participants are asked to report how often they have been bothered by several depressive symptoms over the last 2 weeks on a 4-point Likert scale (0 = *not at all*; 3 = *nearly every day*). An example item includes "feeling tired or having little energy." Items are summed to create a composite score of depressive symptoms, and higher scores are indicative of greater depressive symptoms (α = 0.84 to 0.87 across time points in the present study).

Anxiety Symptoms. Anxiety symptoms were assessed using the 7-item Generalized Anxiety Disorder scale (Spitzer et al., 2006). Similar to the PHQ-8, the GAD-7 asks participants to report how often they have been bothered by several anxiety symptoms over the last 2 weeks on a 4-point Likert scale (0 = *not at all*; 3 = *nearly every day*). An example item includes "not being able to stop or control worrying." Items are summed to create a composite score of anxiety symptoms, and higher scores are indicative of greater anxiety symptoms (α = 0.84 to 0.87 across time points in the present study).

Internalized Binegativity. The 5-item internalized binegativity subscale of the Bisexual Identity Inventory (BII; Paul et al., 2014) was used to measure participants' overall negative internalized views of bisexuality. Items were rated on a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*). An example item is "I would be better off if I would identify as gay or straight, rather than bisexual." Items are summed to create a composite score (α = 0.85 to 0.86 across time points in the present study). The internalized binegativity subscale of the BII has been positively associated with anxiety and depressive symptoms in past research (e.g., Dyar & London, 2018; Paul et al., 2014).

Daily Diary Measures

Sad and Fearful Affect. The sadness and fear subscales of the Positive and Negative Affect Schedule-Expanded Form (PANAS-X; Watson & Clark, 1999) were used to measure sad and fearful affect. The sadness subscale includes 5 items (e.g, "blue," "lonely") and the fear subscale includes 6 items (e.g., "shaky," "afraid"). Participants were instructed to rate to what degree they feel each of the 11 emotions "right now" on a five-point Likert scale (1 = *very slightly or not at all*, 5 = *extremely*). Items of each subscale are averaged to create a composite score. Both subscales demonstrated adequate internal consistency in the present study (sadness α = 0.90; fear α = 0.86) and have previously been associated with measures of depression (sadness subscale) and anxiety (fear subscale; Watson & Clark, 1999).

Experience of Binegative Events. The 8-item Brief Anti-Bisexual Experiences Scale (ABES; Brewster & Moradi, 2010; Dyar et al., 2018) was used to assess participants' daily experiences of binegative events. Participants were asked to indicate whether they had experienced each of 8 negative experiences related to their bi+ identity that day (e.g., "People assumed that I would cheat in a relationship because I am bi+"). An additional item was added to

capture any binegative events that were not included in the scale; "Something negative related to my bi+ identity happened that wasn't listed." The original Brief ABES uses a 6-point scale to assess frequency of binegative events (1 = *never*, 6 = *almost all the time*), and asks individuals to separately rate the frequency with which they experience the event with heterosexual and lesbian or gay individuals. For adaptation as a daily measure, participants were asked whether they experienced each event that day (0 = *no*, 1 = *yes,* 2 = *not sure*), and were not asked whether heterosexual or lesbian or gay individuals had perpetrated the event. Dyar and colleagues (2021) modified the Brief ABES in a similar way in a previous daily diary study (0 = *no*, 1 = *yes*). We added an additional response of "not sure" due to previous research suggesting that experiences of stigma or discrimination that are ambiguous may be more stressful than those that are easily recognized and attributable to bias (Williams & Mohammed, 2013).

For each binegative event a participant indicated that they had or may have experienced that day, they were asked to indicate who engaged in the behavior. They were presented with seven options: partner, family member(s), friend(s), coworker(s), neighbor(s), stranger(s), or someone else.

Severity of Binegative Events. Individuals who reported "yes" or "not sure" in response to at least one binegative event were asked to rate "How much were you bothered by these event(s) today, when they occurred?" on a 4-point scale (1 = *not at all*; 2 = *a little bit*; 3 = *quite a bit*; 4 = *extremely*). This question was adapted from the Bisexual Microaggression Scale for Women (Flanders et al., 2019).

Disclosure to Partner. Individuals who reported "yes" or "not sure" in response to at least one binegative event in a given day were asked about the degree to which they disclosed various aspects of the event(s) to their partner. Adapted from previous daily diary research

(Laurenceau et al., 2005), disclosure was measured with 3 items assessing degree of disclosure of facts and information, thoughts, and feelings, respectively. Participants responded to each question via a 6-point Likert scale (0 = *none* to 5 = *a great deal*) and these items were summed to create a composite score (α = 0.95).

Perceived Partner Responsiveness. Individuals who endorsed at least one binegative event in a given day and who endorsed having disclosed anything about the event(s) to their partner were asked about their partner's responsiveness to their disclosure(s). Four items from the Perceived Partner Responsiveness (PPR) Scale (Reis et al., 2017) adapted for use in previous daily diary research (Laurenceau et al., 2005; Pagani et al., 2019) were used to assess how understood, validated, accepted, and cared for by their partner the participant felt after disclosing facts, thoughts, or feelings about the binegative event(s) to their partner. Participants responded to each question via a 5-point Likert scale (1 = *very little* to 5 = *a great deal*) and these items were summed to create a composite score (α = 0.89).

Data Analysis

Daily Diary Analyses

The daily diary data were analyzed using multilevel models, following the analytic approach commonly used in intensive longitudinal studies (Bolger & Laurenceau, 2013). Multilevel modeling allowed us to examine both the typical causal process (i.e., examining how binegative events are related to daily affect, and the degree to which various relationship factors moderate that association) across individuals, and to allow for heterogeneity of this process between individuals. Dependent variables in the multilevel models were daily ratings of sad and fearful affect. Independent variables included whether a participant had or may have experienced any binegative event(s) that day, the severity of the event(s; i.e., to what degree the event(s),

taken together, were bothersome), to what extent they disclosed the daily event(s) to their partner, and perceived partner responsiveness to the disclosure of the event(s), along with time. These variables were person-mean-centered (with the exception of time) and included as level-1 predictors. Additionally, person-means of each of these variables, except for day, were included as level-2 predictors and were mean-centered. Intraclass correlations (ICCs) were also computed for each model, which represent the amount of variance between second-level units (i.e., individuals) compared to first-level units (i.e., days). All analyses were conducted using R Statistical Software version 4.2.2 (R Core Team, 2022) and RStudio (Posit team, 2022). Packages used to conduct daily diary analyses included nlme (Pinheiro et al., 2022), lme4 (Bates et al., 2015), and lmerTest (Kuznetsova et al., 2017), and tables and figures were created using sjPlot (Lüdecke, 2022) and ggplot2 (Wickham, 2016).

Aim 1 assessed the degree to which the experience of daily binegative events exhibits within and between-subjects associations with daily sad and fearful affect. To address this aim, we fit generalized linear mixed Poisson models with a logarithmic link function using maximum likelihood approximation. These models were used instead of linear mixed effect models because the residuals of the sad and fearful affect outcome variables exhibited an extreme positive skew that was not sufficiently addressed by transformations (e.g., logarithmic, square and cube root transformations) of the dependent variable. Generalized linear mixed models do not assume that the dependent variable is normally distributed, and therefore were a more appropriate analytic approach for these models. Poisson regression is appropriate for count data and non-normative continuous data with positive skew, and connects predictors to dependent variables using a natural logarithmic link function. To interpret the results of a Poisson model, regression coefficients are exponentiated and described as incidence rate ratios (e.g., Bono et al., 2021). A

dummy-coded variable was created for the experience of daily binegative events, where participants were coded "0" if they reported they had not experienced any binegative events on a particular day and "1" if they reported they had experienced, or were not sure whether they had experienced, any binegative events that day. Two generalized linear mixed Poisson models were computed regressing daily sadness and fear, respectively, on a time variable (i.e., day in the 28-day study, in which "0" is day 1 and "1" is day 28) and within and between-person components of the experience of daily binegative events. Models included random effects for time and the within-person component of daily binegative events.

Aim 2 assessed the degree to which severity of a binegative event, as conceptualized by how much the event bothered an individual, exhibits within and between-subjects associations with sad and fearful affect. To address this aim, we used linear mixed effect models with the dependent variable (i.e., daily sadness or fear) square-root transformed to address positive skew. Models were fit using restricted maximum likelihood estimation. The two models addressing this aim included data only from individuals on days that they reported that they experienced or may have experienced any binegative events. That is, days (nested within individuals) during which no binegative events were reported were excluded from the analyses. For these models, a square-root transform of daily sadness and fear sufficiently addressed non-normality of the residuals, such that we did not need to use generalized linear mixed Poisson models as described in Aim 1. Two linear mixed effects models were computed regressing square-root transformed daily sadness and fear, respectively, on time and the within and between-person components of the severity of daily binegative events. Models included random effects for time and the within-person component of the severity of daily binegative events, and accounted for first-order autocorrelation of residuals (i.e., the associations between residuals at consecutive time points).

Aim 3 assessed the degree to which the within and between-subjects level of disclosure of a binegative event to one's partner moderates the association between the severity of binegative events and sad and fearful affect. To address this aim, we used linear mixed effect models with the dependent variable (i.e., daily sadness or fear) square-root transformed to address positive skew. Models were fit using restricted maximum likelihood estimation. As in Aim 2, the two models addressing this aim included data only from individuals on days that they reported that they experienced or may have experienced any binegative events. That is, days (nested within individuals) during which no binegative events were reported were excluded from the analyses. For these models, a square-root transform of daily sadness and fear sufficiently addressed non-normality of the residuals, such that we did not need to use generalized linear mixed Poisson models with a logarithmic link function as in Aim 1. Two linear mixed effects models were computed regressing square-root transformed daily sadness and fear, respectively, on time, the interaction between the within-person components of disclosure and severity of daily binegative events, the interaction between the between-person components of disclosure and severity of daily binegative events, and a cross-level interaction between the between-person component of disclosure and within-person component of severity of binegative events. Models also included the component terms of the interactions as predictors. Models included random effects for the within-person components of disclosure, the severity of daily binegative events, and time; models also accounted for first-order autocorrelation of residuals.

Finally, Aim 4 assessed the degree to which the within and between-subjects level of perceived partner responsiveness (PPR) following a binegative event moderates the association between the severity of the binegative event and sad and fearful affect. To address this aim, we used linear mixed effect models with the dependent variable (i.e., daily sadness or fear) square-

root transformed to address positive skew. Models were fit using restricted maximum likelihood estimation. The two models addressing this aim only included data from individuals on days that they reported any degree of disclosure of binegative events to their partner. That is, days (nested within individuals) during which individuals did not disclose anything about binegative events to their partner were excluded from the analyses. Two linear mixed effects models were computed regressing square-root transformed daily sadness and fear, respectively, on time, the interaction between the within-person components of PPR and severity of daily binegative events, the interaction between the between-person components of PPR and severity of daily binegative events, and a cross-level interaction between the between-person component of PPR and the within-person component of severity of binegative events. Models also included the component terms of the interactions as predictors. Models included random effects for the within-person component of severity of daily binegative events and time , but not the within-person component of PPR: the models failed to converge when random effects for PPR were included. Models accounted for first-order autocorrelation of residuals.

Longitudinal Mediated Moderation Analyses

To analyze the mediated moderation model (Aims 5-8) examining the degree to which internalized binegativity accounts for the interaction effect of relationship adjustment and binegative events on internalizing symptoms, we had planned to use a combination of analytic techniques described by Muller and colleagues (2005) and Preacher and colleagues (2007). In all of the models described below, the predictor variables were centered at their mean. The dependent variables—depressive and anxiety symptoms—were both square-root transformed to minimize positive skew.

Muller and colleagues (2005) describe four conditions that must be met to establish

mediated moderation, similar to Baron and Kenny's (1986) criteria for mediation. First, as in Aim 5, one must establish moderation of the effect of the independent variable (the frequency and severity of binegative events) on the dependent variable (internalizing symptoms) by the moderator (relationship adjustment). To address this aim, we regressed square root-transformed day 28 depressive symptoms on baseline depressive symptoms, baseline relationship adjustment, the frequency/severity of binegative events, and the baseline relationship adjustment × frequency and severity of binegative events interaction. Additionally, we regressed square root-transformed day 28 anxiety symptoms on baseline anxiety symptoms, baseline relationship adjustment, the frequency/severity of binegative events, and the baseline relationship adjustment × frequency/severity of binegative events interaction.

Second, as in Aim 6, one must examine the degree to which the mediator (internalized binegativity) is predicted by the interaction between the independent variable (the frequency/severity of binegative events) and the moderator (relationship adjustment). To establish evidence for mediated moderation, either the effect of binegative events on internalized binegativity must depend on relationship adjustment and/or the partial effect of internalized binegativity on internalizing symptoms must depend on relationship adjustment. To address this aim, we regressed log-transformed day 21 internalized binegativity on baseline internalized binegativity, baseline relationship adjustment, the frequency/severity of binegative events, and the baseline relationship adjustment × frequency/severity of binegative events interaction. In this model, a log transformation performed best in transforming the positively skewed variable of internalized binegativity.

Third, as in Aim 7, one must determine that the average level of the mediator (internalized binegativity) is associated with the dependent variable (internalizing symptoms)

when controlling for the interaction between the independent variable (frequency/severity of binegative events) and the moderator (relationship adjustment). To address this aim, we planned to regress square root-transformed day 28 depressive symptoms on baseline depressive symptoms, day 21 internalized binegativity, baseline relationship adjustment, the frequency/severity of binegative events, and the baseline relationship adjustment × frequency/severity of binegative events interaction. Additionally, we planned to regress square root-transformed day 28 anxiety symptoms on baseline anxiety symptoms, day 21 internalized binegativity, baseline relationship adjustment, the frequency/severity of binegative events, and the baseline relationship adjustment × frequency/severity of binegative events interaction.

The last criterion for mediated moderation states that the interaction effect between the independent variable (frequency/severity of binegative events) and the moderator (relationship adjustment) on the dependent variable (internalizing symptoms) must decrease in magnitude when the mediator (internalized binegativity) is included in the model. In order to test this hypothesis, we had planned to test the interaction effect of relationship adjustment and binegative events on internalizing symptoms through internalized binegativity (Aim 8) using a nonparametric bootstrapping procedure described by Preacher and Hayes (2004). However, as described below in the Results section, the first two criteria for mediated moderation were not established in our sample; therefore, we did not complete Aim 7 or the bootstrapping procedure.

Chapter 3: Results

Demographics

The total analytic sample consisted of 155 participants, all of whom were cisgender women who were cohabiting with their romantic partner. With respect to relationship status, 47% were married and 53% were in a non-married romantic relationship. On average,

participants were 31.78 years of age (*SD* = 7.85 years, range= 19 – 64 years of age). Participants were able to identify multiple sexual orientation labels with which they identified, consistent with research indicating that many bi+ individuals identify with multiple sexual orientation labels (Feinstein et al., 2021). Participants were retained in the analyses if they identified with at least one sexual orientation label that was consistent with attraction to people of multiple genders. In the present sample, 30.1% of participants identified with more than one sexual orientation label: on average, participants identified with 1.5 labels (range = 1 to 6). The majority (87.2%) of the sample identified with the label bisexual, 22.4% with pansexual, 21.1% with queer, 4.49% with demisexual, 3.21% with polysexual, 2.56% with questioning, 1.92% with omnisexual, 1.92% with fluid, 1.92% with straight/heterosexual, and 1.92% with asexual; one participant (0.65%) with plurisexual, and one participant (0.65%) with gay/lesbian[1]. Participants had been in a relationship with their current romantic partner for an average of 8.54 years (*SD*= 6.38 years, range = 4 months to 36.83 years). With respect to race and ethnicity, the majority of the sample (88.46%) was White. Other races represented in the sample included Black or African American (7.69%), Asian (5.13%), American Indian or Alaska Native (3.21%), Middle Eastern (.06%), and Native Hawaiian or Other Pacific Islander (.06%); several people (1.92% of the sample) indicated they were multiracial or mixed in the response option for "Other." With respect to ethnicity, 11.5% of the sample identified as Hispanic or Latina.

With respect to partner gender, 83.3% of the sample was partnered with a man, 12.8% with a woman, and 5.13% with a non-binary individual. Additionally, 7.1% of the sample

[1] The individuals who identified with the labels gay/lesbian and straight/heterosexual also endorsed labels consistent with non-monosexual attraction.

indicated that their partner was transgender, and one person indicated that they were not sure with what gender their partner identified. With respect to partner sexual orientation, 64.1% of participants indicated that their partner identified as heterosexual/straight, 7.05% as gay/lesbian, 21.2% as bisexual, 6.41% as queer, 1.92% as demisexual, and 1.92% as questioning; one participant (0.65%) identified their partner's sexual orientation label as omnisexual, one (0.65%) as asexual, and one person (0.65%) preferred not to disclose. These percentages sum to greater than 100% because participants were able to identify multiple genders and sexual orientations with which their partner identified.

The sample varied with respect to household income, with 4.48% reporting that their gross household income was less than $19,999 in 2021, 23.1% reporting that it was between $20,000 and $39,999, 16.67% reporting that it was between $40,000 and $59,999, 17.31% reporting that it was between $60,000 and $79,999, 14.7% reporting that it was between $80,000 and $99,999, and 23.7% reporting that it was greater than $100,000.

Participants completed 21.86 daily surveys on average (*SD*= 7.87 days, range = 2 – 28 days). On average, participants reported experiencing at least one binegative event on 12.9% of days when surveys were completed (*SD*= 21.6%, range = 0 to 100%). During the 28-day study period, 57.42% (*N* = 89) percent of participants reported experiencing at least one binegative event.

Descriptive statistics for level 1 variables (i.e., variables nested within subjects) are presented in Table 1.

Table 1

Within-Subjects Descriptive Statistics

Variable	*n*	*M*	*SD*
Sadness	3382	8.17	4.47

Fear	3382	8.30	3.89
Any binegative event (0 = *no*, 1 = *yes or not sure*)	3385	0.11	0.32
Binegative event severity	379	2.57	0.91
Disclosure	381	7.48	6.03
Perceived partner responsiveness	282	13.72	6.17

Note. Participants (n = 155) reported daily sadness, fear, and whether they had experienced any binegative events in a given day (n = 3385 person-days). Only participants (n = 89) who reported any binegative events (n = 381 person-days) reported perceived binegative event severity and degree of disclosure of binegative events to their partner. Only participants (n = 62) who reported some degree of disclosure of binegative events to their partner reported perceived partner responsiveness to the disclosure (n = 282 person-days).

Descriptive statistics for level 2 variables (i.e., between-subjects variables) are presented in Table 2.

Table 2

Between-Subjects Descriptive Statistics

Variable	*n*	*M*	*SD*
Depressive symptoms (baseline)	155	8.55	5.28
Depressive symptoms (day 21)	122	7.86	5.42
Depressive symptoms (day 28)	121	7.55	5.09
Anxiety symptoms (baseline)	155	8.04	5.24
Anxiety symptoms (day 21)	122	6.95	4.57
Anxiety symptoms (day 28)	121	6.22	4.56
Relationship adjustment (baseline)	155	57.58	17.65
Relationship adjustment (day 21)	121	57.75	19.32
Relationship adjustment (day 28)	120	59.35	18.29
Internalized binegativity (baseline)	155	1.77	1.15
Internalized binegativity (day 21)	122	1.82	1.16
Internalized binegativity (day 28)	121	1.74	1.19
Average perceived binegative event severity	89	2.29	0.65
Average sadness	155	8.25	3.50

Average fear	155	8.41	3.19
Average disclosure of binegative events to partner	89	6.67	6.68
Average perceived partner responsiveness to disclosure	62	14.91	7.32

Note. Only participants (n = 89) who reported any binegative events reported perceived binegative event severity or disclosure of binegative events to their partner. Only participants (n = 62) who reported some degree of disclosure of binegative events to their partner reported perceived partner responsiveness to the disclosure.

A correlation matrix for between-subjects variables is presented in Table 3.

Table 3

Bivariate Between-Subjects Correlation Matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 Depressive symptoms[1]	—											
2 Depressive symptoms[2]	.75*	—										
3 Depressive symptoms[3]	.78*	.87*	—									
4 Anxiety symptoms[1]	.76*	.57*	.55*	—								
5 Anxiety symptoms[2]	.72*	.74*	.72*	.74*	—							
6 Anxiety symptoms[3]	.70*	.76*	.78*	.70*	.82*	—						
7 Relationship adjustment[1]	-.42*	-.35*	-.34*	-.38*	-.25*	-.27*	—					
8 Relationship adjustment[2]	-.34*	-.43*	-.36*	-.21*	-.22*	-.28*	.86*	—				
9 Relationship adjustment[3]	-.38*	-.45*	-.42*	-.26	-.26	-.33*	.87*	.94*	—			
10 Internalized binegativity[1]	.17*	.15	.15	.15	.15	.14	-.26*	-.24*	-.26*	—		
11 Internalized binegativity[2]	.12	.16	.12	.13	.12	.07	-.38*	-.29*	-.29*	.74*	—	
12 Internalized binegativity[3]	.13	.08	.15	.11	.07	.08	-.31*	-.25*	-.28*	.79*	.87*	—
13 Average binegative event severity	.19	.15	.10	.17	-.05	.04	-.24*	-.19	-.14	.15	.28*	.37*

Note. [1]Baseline. [2]Day 21. [3]Day 28.

*$p < .05$.

With respect to clinical cutoff scores on the primary study measures, 31.61% of the sample scored below the cutoff score of 51.5 on the CSI-16 at baseline, indicating clinically significant relationship distress, 35.5% of the sample scored higher than 10 on the PHQ-8 at baseline, indicating clinically significant depressive symptoms, and 32.9% of the sample scored higher than 10 on the GAD-7 at baseline, indicating clinically significant anxiety symptoms.

Daily Diary Analyses

Intraclass Correlations

Intraclass correlations (ICCs) were computed for sad and fearful affect, binegative event severity, perceived partner responsiveness (PPR), and disclosure. The ICC for sadness was 0.56, indicating that 56% of the variability in sadness was attributable to differences in average sadness between subjects, and 44% of the variability was attributable to within-subjects variability in sadness over time. The ICCs for the other variables were 0.64 for fear, 0.29 for binegative event severity, 0.73 for disclosure, and 0.69 for PPR.

Aim 1: Associations Between Daily Experiences of Binegative Events and Daily Sad and Fearful Affect

Aim 1 assessed the degree to which the experience of daily binegative events exhibits within- and between-subjects associations with daily sad and fearful affect using generalized linear mixed Poisson models with a logarithmic link function. Two generalized linear mixed Poisson models were computed regressing daily sadness and fear, respectively, on a time variable and the within and between-person components of the experience of daily binegative events. Models included random effects for time and the within-person component of daily binegative events.

Results from Model 1a, a generalized linear mixed Poisson model examining the degree to which the experience of daily binegative events exhibits associations with daily sad affect, are presented in Table 4.

Table 4

Parameter Estimates from Model 1a: Sadness Predicted by Binegative Event Experience at Level 1 and Level 2

	Sadness			
			95% CI	
Fixed effects	*b*	Incidence Rate Ratio	Lower	Upper
Intercept	2.10***	8.08	7.63	8.56
Day	-0.13***	0.88	0.82	0.94
Event (person-centered)	0.07*	1.07	1.00	1.14
Event (mean)	0.91***	2.48	1.96	3.14

Random effects (variances)	Estimate
Level-1 residual variance	0.12
Level-2 intercept variance	0.11
Level-2 day slope variance	0.09
Level-2 event slope variance	0.02

Note. N = 155 individuals at level 2, *n* = 3,378 observations at level 1. Sadness = daily sadness; day = day of the study (0 = *day 1*, 1 = *day 28*); event (person-centered) = whether a participant experienced a binegative event in a given day, centered on that participant's average experience of binegative events; event (mean) = between-person average experience of binegative events *$p < .05$. ** $p < .01$. *** $p < .001$.

Results indicated a significant effect for the experience of binegative events on sadness at the between and within-person levels. Specifically, the model estimated that individuals who reported binegative events every day reported 248% higher mean sadness (IRR = 2.48) than

those who reported no binegative events. Additionally, participants' sadness scores were estimated to be higher by 7% (IRR = 1.07) on days that they did (versus did not) report a binegative event, controlling for time. Results also indicated an unexpected significant negative effect of time, controlling for the within-person effect of daily binegative events. Specifically, participants' sadness was estimated to be 22% lower (IRR = 0.88) at the end of the study than at baseline.

Results from Model 1b, a generalized linear mixed Poisson model examining the degree to which the experience of daily binegative events exhibits associations with daily fearful affect, are presented in Table 5.

Table 5

Parameter Estimates from Model 1b: Fear Predicted by Binegative Event Experience at Level 1 and Level 2

	Fear			
			95% CI	
Fixed effects	*b*	Incidence Rate Ratio	Lower	Upper
Intercept	2.07***	7.95	7.61	8.31
Day	-0.01	0.99	0.94	1.05
Event (person-centered)	0.05	1.05	1.00	1.10
Event (mean)	0.81***	2.24	1.84	2.73

Random effects (variances)	Estimate
Level-1 residual variance	0.12
Level-2 intercept variance	0.06
Level-2 day slope variance	0.04
Level-2 event slope variance	0.00

Note. N = 155 individuals at level 2, n = 3,378 observations at level 1. Fear = daily fear; day = day of the study (0 = *day 1*, 1 = *day 28*); event (person-centered) = whether a participant

experienced a binegative event in a given day, centered on that participant's average experience of binegative events; event (mean) = between-person average experience of binegative events *$p < .05$. ** $p < .01$. *** $p < .001$.

Results indicated a significant effect for the experience of binegative events on fear at the between person-level, but not within-persons. Specifically, the model estimated that individuals who reported binegative events every day reported 224% higher mean fear (IRR = 2.24) than those who reported no binegative events. Over and above the effect of the mean level of binegative events, fear scores were not estimated to significantly differ on days that participants did, versus did not, experience binegative events. Time was not a significant predictor of fear, controlling for the within-person effect of daily binegative events.

Aim 2: Associations Between the Severity of Daily Experiences of Binegative Events and Daily Sad and Fearful Affect

Aim 2 assessed the degree to which severity of a binegative event, as conceptualized by how much the event bothered an individual, exhibited within and between-subjects associations with square-root transformed sad and fearful affect. The two models addressing this aim included data only from individuals ($n = 89$) on days ($n = 376$) that they reported having experienced any binegative events. That is, days (nested within individuals) during which no binegative events were reported were excluded from the analyses. Two linear mixed effects models were computed regressing square-root transformed daily sadness and fear, respectively, on time and the within- and between-person components of the severity of daily binegative events. Models included random effects for time and the within-person component of the severity of daily binegative events, and accounted for first-order autocorrelation of residuals.

Results from Model 2a, which examined the within-person and between-person associations between binegative event severity and square-root transformed sadness, are presented in Table 6.

Table 6

Parameter Estimates from Model 2a: Sadness Predicted by Binegative Event Severity at Level 1 and Level 2

	Square-Root Transformed Sadness		
		95% CI	
Fixed effects	*b*	Lower	Upper
Intercept	3.14***	2.99	3.29
Day	-0.23*	-0.42	-0.04
Severity (within-persons)	0.05	-0.04	0.15
Severity (between-persons)	0.42***	0.20	0.65

Random effects (variances)	Estimate
Level-1 residual variance	0.22
Level-2 intercept variance	0.31
Level-2 day slope variance	0.04
Level-2 severity slope variance	0.02

Note. n = 89 individuals at level 2, n = 376 observations at level 1. Day = day of the study (0 = *day 1*, 1 = *day 28*); severity (within-persons) = a participant's binegative event severity rating on a given day, centered on that participant's average binegative event severity rating; severity (between-persons) = mean severity of binegative events, mean-centered

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

Results indicate a significant positive association between the between-person component of the severity of binegative events and square-root transformed sadness; as the mean amount individuals were bothered by binegative events on average across the 28 days increased,

their daily sadness was found to increase on average. Specifically, individuals 1 standard deviation above the mean on average binegative event severity had estimated sadness of 11.02 on day 28, individuals at the mean of average binegative event severity had estimated sadness of 8.47 on day 28, and individuals 1 standard deviation below the mean on average binegative event severity had estimated sadness of 6.25 on day 28. Contrary to expectations, over and above individuals' mean of how much they were bothered by binegative events, how bothersome they rated a binegative event on a particular day was not significantly related to their sadness on that day, controlling for time. Time (i.e., day in study) was significantly associated with daily sadness, with sadness decreasing on average over time. Specifically, at the average level of binegative event severity, sadness was estimated to be 8.47 at the end of the study, as compared to 9.86 at the beginning of the study.

Results from Model 2b, which examined the within-person and between-person associations between binegative event severity and square-root transformed fear, are presented in Table 7.

Table 7

Parameter Estimates from Model 2b: Fear Predicted by Binegative Event Severity at Level 1 and Level 2

	Square-Root Transformed Fear		
		95% CI	
Fixed effects	*b*	Lower	Upper
Intercept	3.11***	2.97	3.26
Day	-0.10	-0.29	0.10
Severity (within-persons)	0.07	-0.02	0.15
Severity (between-persons)	0.21*	0.01	0.42
Random effects (variances)	Estimate		

Level-1 residual variance	0.16
Level-2 intercept variance	0.31
Level-2 day slope variance	0.11
Level-2 severity slope variance	0.02

Note. n = 89 individuals at level 2, n = 376 observations at level 1. Day = day of the study (0 = *day 1*, 1 = *day 28*); severity (within-persons) = a participant's binegative event severity rating on a given day, centered on that participant's average binegative event severity rating; severity (between-persons) = mean severity of binegative events, mean-centered

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

Results indicate a significant positive association between the between-person component of the severity of binegative events and square-root transformed fear; as the mean amount individuals were bothered by binegative events on average across the 28 days increased, their daily fear was found to increase on average. Specifically, individuals 1 standard deviation above the mean on average binegative event severity had estimated fear of 10.44 on day 28, individuals at the mean of average binegative event severity had estimated fear of 9.12 on day 28, and individuals 1 standard deviation below the mean on average binegative event severity had estimated fear of 7.86 on day 28. Contrary to expectations, over and above individuals' mean of how much they were bothered by binegative events, how bothersome they rated a binegative event on a particular day was not significantly related to their fear on that day, controlling for time. Time was not significantly associated with daily fear.

Aim 3: Disclosure as a Moderator of the Associations Between the Severity of Daily Experiences of Binegative Events and Daily Sad and Fearful Affect

Aim 3 assessed the degree to which level of disclosure of a binegative event to one's partner moderates the association between the severity of binegative events and sad and fearful affect using linear mixed effect models with the dependent variable (i.e., daily sadness or fear) square-root transformed to address positive skew. As in Aim 2, the two models addressing this aim included data only from individuals (n = 89) on days (n = 376) that they reported having experienced any binegative events. Two linear mixed effects models were computed regressing square-root transformed daily sadness and fear, respectively, on time, the interaction between the within-person components of disclosure and severity of daily binegative events, the interaction between the between-person components of disclosure and severity of daily binegative events, and a cross-level interaction between the between-person component of disclosure and within-person component of severity of binegative events. Models also included the centered component terms of each interaction as predictors, and included random effects for the within-person components of disclosure, severity of daily binegative events, and time. Models accounted for first-order autocorrelation of residuals.

Results from Model 3a, which examined the interactions between disclosure and binegative event severity on square-root transformed sadness, are presented in Table 8.

Table 8

Parameter Estimates from Model 3a: Sadness Predicted by Interactions Between Binegative Event Severity and Disclosure

	Square-Root Transformed Sadness		
		95% CI	
Fixed effects	*b*	Lower	Upper

Intercept	3.14***	2.98	3.30
Day	-0.20*	-0.39	-0.01
Severity (within-persons)	0.05	-0.05	0.16
Severity (between-persons)	0.46***	0.21	0.70
Disclosure (within-persons)	0.00	-0.02	0.02
Disclosure (between-persons)	0.00	-0.02	0.02
Severity × Disclosure between-persons	-0.01	-0.04	0.02
Severity × Disclosure within-persons	-0.01	-0.02	0.01
Disclosure between-persons × Severity within-persons	0.01	-0.01	0.03

Random effects (variances)	Estimate
Level-1 residual variance	0.21
Level-2 intercept variance	0.33
Level-2 day slope variance	0.04
Level-2 severity slope variance	0.03
Level-2 disclosure slope variance	0.00

Note. n = 89 individuals at level 2, n = 375 observations at level 1. Day = day of the study (0 = *day 1*, 1 = *day 28*); severity (within-persons) = a participant's binegative event severity rating on a given day, centered on that participant's average binegative event severity rating; severity (between-persons) = mean severity of binegative events, mean-centered; disclosure (within-persons) = a participant's level of binegative event disclosure to their partner on a given day, centeredon that participant's average disclosure; disclosure (between-persons) = mean disclosure of binegative events to one's partner

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

Results indicated that disclosure at the within and the between-person level did not moderate the associations between within or between-person binegative event severity and square-root transformed sadness. Because we did not find any significant moderation effects, the model was rerun with the interactions removed to examine the main effects of disclosure and

binegative event severity at the within and between-person levels, controlling for time. Disclosure was not significantly associated with sadness at the between- (b = 0.00, p = 0.844) or within- (b = -0.00, p = 0.933) person levels. As in Model 2a, controlling for mean disclosure, results indicated a significant positive association between the between-person component of the severity of binegative events and square-root transformed sadness (b = 0.42, p < .001); as the mean amount individuals were bothered by binegative events on average across the 28 days increased, their daily sadness increased on average. Over and above individuals' mean of how much they were bothered by binegative events, how bothersome they rated a binegative event on a particular day was not significantly related to their sadness on that day (b = 0.05, p = 0.177), controlling for time and within-person disclosure. Time was significantly associated with daily sadness, with sadness decreasing on average over time (b = -0.22, p = .022), controlling for disclosure and binegative event severity.

Results from Model 3b, which examined the interactions between disclosure and binegative event severity on square-root transformed fear, are presented in Table 9.

Table 9

Parameter Estimates from Model 3b: Fear Predicted by Interactions Between Binegative Event Severity and Disclosure

	Square-Root Transformed Fear		
		95% CI	
Fixed effects	*b*	Lower	Upper
Intercept	3.10***	2.95	3.25
Day	-0.08	-0.27	0.11
Severity (within-persons)	0.07	-0.04	0.17
Severity (between-persons)	0.22	-0.02	0.45
Disclosure (within-persons)	0.00	-0.02	0.02
Disclosure (between-persons)	-0.01	-0.03	0.01
Severity × Disclosure between-persons	0.01	-0.02	0.04

Severity × Disclosure within-persons	-0.01	-0.02	0.01
Disclosure between-persons × Severity within-persons	0.00	-0.01	0.02

Random effects (variances)	Estimate
Level-1 residual variance	0.15
Level-2 intercept variance	0.31
Level-2 day slope variance	0.09
Level-2 severity slope variance	0.04
Level-2 disclosure slope variance	0.00

Note. n = 89 individuals at level 2, n = 375 observations at level 1. Day = day of the study (0 = *day 1*, 1 = *day 28*); severity (within-persons) = a participant's binegative event severity rating on a given day, centered on that participant's average binegative event severity rating; severity (between-persons) = mean severity of binegative events, mean-centered; disclosure (within-persons) = a participant's level of binegative event disclosure to their partner on a given day, centeredon that participant's average disclosure; disclosure (between-persons) = mean disclosure of binegative events to one's partner

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

Results indicated that disclosure at the within- and the between-person level did not moderate the associations between within- or between-person binegative event severity and square-root transformed fear. Because we did not find any significant moderation effects, the model was rerun with the interactions removed to examine the main effects of disclosure and binegative event severity at the within and between-person levels, controlling for time. Disclosure was not significantly associated with fear at the between- (b = -0.01, p = 0.417) or within- (b =-0.00, p = 0.812) person levels. As in Model 2b, controlling for mean disclosure, results indicated a significant positive association between the between-person component of the

severity of binegative events and square-root transformed fear (b = 0.24, p = .029); as the mean amount individuals were bothered by binegative events on average across the 28 days increased, their daily fear increased on average. Over and above individuals' mean of how much they were bothered by binegative events, how bothersome they rated a binegative event on a particular day was not significantly related to their fear on that day (b = 0.07, p = 0.144), controlling for time and within-person disclosure. Time was not significantly associated with daily fear (b = -0.08, p = .398), controlling for disclosure and binegative event severity.

Aim 4: Perceived Partner Responsiveness as a Moderator of the Associations Between the Severity of Daily Experiences of Binegative Events and Daily Sad and Fearful Affect

Aim 4 assessed the degree to which perceived partner responsiveness (PPR) to a binegative event moderates the association between the severity of binegative events and sad and fearful affect using linear mixed effect models with the dependent variable (i.e., daily sadness or fear) square-root transformed to address positive skew. The two models addressing this aim included data only from individuals (n = 62) on days (n = 277) that they reported disclosing anything about a binegative event to their partner. Two linear mixed effects models were computed regressing square-root transformed daily sadness and fear, respectively, on time, the interaction between the within-person components of PPR and severity of daily binegative events, the interaction between the between-person components of PPR and severity of daily binegative events, and a cross-level interaction between the between-person component of PPR and within-person component of severity of binegative events. Models also included the centered component terms for each of these interactions and random effects for the within-person component of severity of daily binegative events and time; models would not converge when

random effects for PPR were included. Models accounted for first-order autocorrelation of residuals.

Results from Model 4a, which examined the interactions between PPR and binegative event severity on square-root transformed sadness, are presented in Table 10.

Table 10

Parameter Estimates from Model 4a: Sadness Predicted by Interactions Between Binegative Event Severity and Perceived Partner Responsiveness (PPR)

	Square-Root Transformed Sadness		
		95% CI	
Fixed effects	*b*	Lower	Upper
Intercept	3.12***	2.94	3.29
Day	-0.22	-0.45	0.01
Severity (within-persons)	0.07	-0.03	0.18
Severity (between-persons)	0.44***	0.21	0.67
PPR (within-persons)	0.00	-0.02	0.01
PPR (between-persons)	-0.02	-0.04	0.01
Severity × PPR between-persons	-0.03	-0.06	0.00
Severity × PPR within-persons	0.00	-0.02	0.02
PPR between-persons × Severity within-persons	0.01	-0.01	0.03

Random effects (variances)	Estimate
Level-1 residual variance	0.22
Level-2 intercept variance	0.24
Level-2 day slope variance	0.00
Level-2 severity slope variance	0.01

Note. $n = 62$ individuals at level 2, $n = 277$ observations at level 1. Day = day of the study (0 = *day 1*, 1 = *day 28*); severity (within-persons) = a participant's binegative event severity rating on a given day, centered on that participant's average binegative event severity rating; severity

(between-persons) = mean severity of binegative events, mean-centered; PPR (within-persons) = a participant's perceived partner responsiveness rating following binegative event disclosures on a given day, centered on that participant's average PPR; PPR (between-persons) = mean PPR following disclosure of binegative events to one's partner

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

Results indicated that PPR at the within- and the between-person level did not significantly moderate the associations between within- or between-person binegative event severity and square-root transformed sadness. Because we did not find any significant moderation effects, Model 4a was rerun with the interactions removed to examine the main effects of PPR and binegative event severity at the within- and between-person levels, controlling for time. PPR was not significantly associated with sadness at the between- (b = -0.02, p = 0.052) or within- (b = -0.003, p = 0.715) person levels, although the main effect for between-subjects PPR on sadness was trending in the negative direction. Controlling for mean PPR, results indicated a significant positive association between the between-person component of the severity of binegative events and square-root transformed sadness (b = 0.44, $p < .001$); as the mean amount individuals were bothered by binegative events on average across the 28 days increased, their daily sadness increased on average. Over and above individuals' mean of how much they were bothered by binegative events, how bothersome they rated a binegative event on a particular day was not significantly related to their sadness on that day (b = 0.05, p = 0.287), controlling for time and within-person PPR. Time was not significantly associated with daily sadness in this model (b = -0.21, p = .072), controlling for PPR and binegative event severity.

Results from Model 4b, which examined the interactions between PPR and binegative event severity on square-root transformed fear, are presented in Table 11.

Table 11

Parameter Estimates from Model 4b: Fear Predicted by Interactions Between Binegative Event Severity and Perceived Partner Responsiveness (PPR)

	Square-Root Transformed Fear		
		95% CI	
Fixed effects	*b*	Lower	Upper
Intercept	3.10***	2.92	3.27
Day	-0.05	-0.31	0.22
Severity (within-persons)	0.03	-0.05	0.11
Severity (between-persons)	0.23	-0.00	0.45
PPR (within-persons)	0.02*	0.00	0.03
PPR (between-persons)	-0.03*	-0.05	-0.00
Severity × PPR between-persons	-0.01	-0.04	0.02
Severity × PPR within-persons	-0.01	-0.04	0.02
PPR between-persons × Severity within-persons	0.01	-0.01	0.03

Random effects (variances)	Estimate
Level-1 residual variance	0.17
Level-2 intercept variance	0.26
Level-2 day slope variance	0.21
Level-2 severity slope variance	0.00

Note. $n = 62$ individuals at level 2, $n = 277$ observations at level 1. Day = day of the study (0 = *day 1*, 1 = *day 28*); severity (within-persons) = a participant's binegative event severity rating on a given day, centered on that participant's average binegative event severity rating; severity (between-persons) = mean severity of binegative events, mean-centered; PPR (within-persons) = a participant's perceived partner responsiveness rating following binegative event disclosures on a given day, centered on that participant's average PPR; PPR (between-persons) = mean PPR following disclosure of binegative events to one's partner

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

Results indicated that PPR at the within- and the between-person level did not significantly moderate the associations between within- or between-person binegative event severity and square-root transformed fear. Because we did not find any significant moderation effects, Model 4b was rerun with the interactions removed to examine the main effects of PPR and binegative event severity at the within and between-person levels, controlling for time. PPR was significantly associated with square-root transformed fear at the between-person level (b = -0.03, p < .01); as participants' average rating of PPR increased, their average fear decreased, controlling for the average severity of binegative events. PPR was also significantly associated with fear at the within-person level (b = 0.02, p = 0.022), such that when participants reported higher PPR than their average, they had higher fear than average, controlling for time and the severity of binegative events on that day. Controlling for mean PPR, results also indicated a significant positive association between the between-person component of the severity of binegative events and fear (b = 0.22, p = 0.050); as the mean amount individuals were bothered by binegative events on average across the 28 days increased, their daily fear increased on average. Over and above individuals' mean of how much they were bothered by binegative events, how bothersome they rated a binegative event on a particular day was not significantly related to their fear on that day (b = 0.01, p = 0.786), controlling for time and within-person disclosure. Time was not significantly associated with daily fear (b = -0.05, p = .693), controlling for PPR and binegative event severity.

Longitudinal Mediated Moderation Analyses

Aim 5 used multiple regression to examine the degree to which the associations between frequency/severity of binegative events over the first 21 days of the study and day 28 depressive and anxiety symptoms were moderated by baseline relationship adjustment, controlling for

baseline symptoms. In all of the following analyses, the frequency/severity of binegative events variable was created by multiplying the percentage of days during which the participant reported binegative events over the first 21 days of the study by their average severity rating of the events, or how much they were bothered by binegative events when they occurred. To address positive skew in the depressive and anxiety symptoms dependent variables, these variables were square-root transformed. All predictor variables were mean-centered. These analyses were composed of the subset of the sample who completed the 3 longitudinal surveys at baseline, day 21, and day 28 (n = 115); participants who had missed one or more of these surveys were excluded from the analyses.

Results from model 5a and 5b are presented in Table 12.

Table 12

Parameter Estimates from Model 5a and 5b: Moderation of Associations Between Frequency/Severity of Binegative Events and Day 28 Depressive and Anxiety symptoms by Baseline Relationship Adjustment

	Model 5a			Model 5b		
	Day 28 Depressive symptoms (sqrt)			Day 28 Anxiety symptoms (sqrt)		
		95% CI			95% CI	
Predictors	*b*	Lower	Upper	*b*	Lower	Upper
Intercept	2.47***	2.35	2.59	2.28***	2.13	2.42
Baseline Relationship Adj	-0.01	-0.01	0.00	-0.01*	-0.02	-0.00
Binegative Events (freq*severity)	-0.49**	-0.80	-0.18	-0.31	-0.69	0.06
Baseline Relationship Adj × Binegative Events	0.00	-0.01	0.01	0.01	-0.01	0.02

Baseline Depression	0.77***	0.66	0.89			
Baseline Anxiety				0.67***	0.55	0.80

Note. n = 115 individuals, Baseline Relationship Adj = relationship adjustment (CSI-16 score) on day 1 of the study; Binegative Events (freq*severity) = the proportion of days in which an individual reported at least one binegative event during the first 21 days of the study, multiplied by their average severity of binegative events across the first 21 days of study; Baseline depression = depressive symptoms (PHQ-8 score) on day 1 of the study; Baseline anxiety = anxiety symptoms (GAD-7 score) on day 1 of the study

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

Results indicated that baseline relationship adjustment did not moderate the association between frequency/severity of binegative events and depressive symptoms or anxiety symptoms. Because we did not find a significant moderation effect in either model, we reran each model without the interaction included to examine the main effects of relationship adjustment and frequency/severity of binegative events on depressive and anxiety symptoms. Results indicated that baseline relationship adjustment was not significantly associated with day 28 depressive symptoms (b = -0.01, p = 0.142) or anxiety symptoms (b = -0.01, p = 0.053), when controlling for baseline levels of the dependent variable and the frequency/severity of binegative events.

Surprisingly, we found that as the frequency/severity of binegative events increased, depressive symptoms (b = -0.38, $p < .001$) and anxiety symptoms (b = -0.46, $p < .001$) at day 28 were estimated to decrease, controlling for baseline levels of these symptoms and baseline relationship adjustment. To better understand these results, we ran post-hoc analyses separating the frequency of binegative events and the mean severity of binegative events into two different

predictor variables. Findings indicated that the mean severity of binegative events was not significantly associated with day 28 depressive symptoms (b = 0.01, p = 0.949) or day 28 anxiety symptoms (b = 0.05, p = 0.754), when controlling for baseline symptoms, baseline relationship adjustment, and the frequency of binegative events. However, the frequency of binegative events was significantly and negatively associated with day 28 depressive symptoms (b = -0.80, p = .014) and day 28 anxiety symptoms (b = -1.08, p = .007), controlling for baseline symptoms, mean severity of binegative events, and baseline relationship adjustment, suggesting that as individuals experienced a greater frequency of binegative events throughout the first 21 days of the study, they had lower depressive and anxiety symptoms at day 28, controlling for binegative event severity, baseline symptoms, and baseline relationship adjustment.

Because we did not establish evidence that the associations between frequency/severity of binegative events over the first 21 days of the study and day 28 depressive and anxiety symptoms were moderated by baseline relationship adjustment, the remaining steps for testing moderated mediation were not necessary. However, we were interested in testing the degree to which binegative events, relationship adjustment, and their interaction predicted changes in internalized binegativity over time, so we proceeded to conduct the analyses for Aim 6.

Aim 6 used multiple regression to examine the degree to which the association between frequency/severity of binegative events over the first 21 days of the study and day 21 internalized binegativity was moderated by baseline relationship adjustment, controlling for baseline internalized binegativity. The dependent variable, day 21 internalized binegativity, was log-transformed to account for positive skew. Results are presented in Table 13.

Table 13

Parameter Estimates from Model 6

	Day 21 Internalized Binegativity (log-transformed)		
		95% CI	
Predictors	*b*	Lower	Upper
Intercept	0.42***	0.34	0.50
Baseline Relationship Adj	0.00	-0.01	0.00
Baseline Internalized Binegativity	0.31***	0.24	0.38
Binegative Events (freq*severity)	0.02	-0.18	-0.22
Baseline Relationship Adj × Binegative Events	0.00	-0.01	0.00

Note. n = 115 individuals, Baseline Relationship Adj = relationship adjustment (CSI-16 score) on day 1 of the study; Baseline internalized binegativity = internalized binegatity (BII) on day 1 of the study; Binegative Events (freq*severity) = the proportion of days in which an individual reported at least one binegative event during the first 21 days of the study, multiplied by their average severity of binegative events across the first 21 days of study

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

Results indicated that baseline relationship adjustment did not moderate the association between frequency/severity of binegative events and internalized binegativity. Because we did not find a significant moderation effect, we reran the model without the interaction included to examine the main effects of baseline relationship adjustment and frequency/severity of binegative events on day 21 internalized binegativity, controlling for internalized binegativity at baseline. Results indicated that baseline relationship adjustment was not significantly associated with day 21 internalized binegativity (b = -0.00, p = 0.112), when controlling for baseline

internalized binegativity and the frequency/severity of binegative events. The frequency/severity of binegative events also was not significantly associated with day 21 internalized binegativity (b = 0.07, p = 0.310), when controlling for baseline internalized binegativity and relationship adjustment. A post-hoc analysis separating the frequency of binegative events and the mean severity of binegative events into two different predictor variables found that the mean severity of binegative events was not significantly associated with day 21 internalized binegativity (b = 0.10, p = 0.212) when controlling for baseline internalized binegativity, baseline relationship adjustment, and the frequency of binegative events. By contrast, the frequency of binegative events was significantly and positively associated with day 21 internalized binegativity (b = 0.60, p = .006) when controlling for baseline internalized binegativity, baseline relationship adjustment, and the mean severity of binegative events.

Post-hoc Analyses

Reddit vs. Prolific Users. To examine whether the sources we recruited from were drawing from similar or different populations, we explored mean differences in several variables by recruitment source (Reddit vs. Prolific). Findings indicated that mean age (b = 1.34, t = 0.59, p = 0.560, d = 0.17) and baseline depressive (b = -0.36, t = -1.17, p = 0.245, d = -0.25) and anxiety symptoms (b = -0.416, t = -1.31, p = 0.193, d = -0.36) did not significantly differ between Reddit and Prolific users. However, on average, Reddit users reported significantly higher mean daily sadness (M = 13.03, SD = 2.98) than Prolific users (M = 7.81, SD = 3.21, t = -5.64, p < .001, d = -1.64), as well as significantly higher mean daily fear (M = 13.30, SD = 4.41 for Reddit users, M = 7.96, SD = 2.65 for Prolific users, t = - 6.50, p < .001, d = -1.90). Additionally, baseline relationship adjustment was significantly lower for Reddit users (M = 32.62, SD = 14.79) compared to Prolific users (M = 59.87, SD = 16.09; t = 5.88, p < .001, d =

1.72). Reddit users also had, on average, higher internalized binegativity at baseline (M = 3.45, SD = 1.53) compared to Prolific users (M = 1.62, SD = 0.99, t = -6.07, p < .001, d = -1.77), were more bothered on average by binegative events (M = 2.71, SD = 0.51 for Reddit users; M = 2.22, SD = 0.65 for Prolific users; b = -0.49, t = -2.59, p = .011, d = -0.79), and reported binegative events more frequently (M = 56.58%, SD = 25.87% of days) than Prolific users (M = 8.24%, SD = 14.38% of days; b = -0.48, t = - 10.76, p < .001, d = -3.14).

Attrition. Previous research has found that individuals with greater baseline psychopathology may be more likely to drop out of longitudinal studies early (e.g., Lamers et al., 2012). We examined whether individuals who had completed all 3 longitudinal surveys differed in baseline depressive or anxiety symptoms from individuals who dropped out of the study early. Findings indicated that individuals who dropped out of the study early had significantly higher baseline depressive symptoms (M = 10.17, SD = 4.88) compared to individuals who completed the study early (M = 7.96, SD = 5.31, t = -2.36, p = 0.020, d = -0.43). Individuals who dropped out early did not have significantly higher anxiety symptoms (M = 9.22, SD = 4.75) compared to individuals who remained in the study (M = 7.61, SD = 5.36), but this difference was marginally significant (t = -1.89, p = 0.061, d = -0.31) in the direction of individuals who dropped out early having greater anxiety symptoms at baseline. Baseline relationship adjustment (b = 0.01, t = 0.003, p = 0.997, d = 0.00) and internalized binegativity (b = -0.01, t = -0.05, p = 0.961, d = -0.01) did not significantly differ between individuals who completed versus dropped out of the study.

Chapter 4: Discussion

In a 28-day diary study of bi+ cisgender women, daily sadness was predicted by the experience of binegative events both between- and within- persons, such that individuals were

sadder on days that they did (versus did not) experience binegative events, and individuals who experienced binegative events more frequently were sadder on average. Daily fear was predicted by the experience of binegative events only between-persons, such that individuals who experienced binegative events more frequently were more fearful on average, but individuals were not significantly more fearful on days that they did (versus did not) experience a binegative event, suggesting that the overall prevalence of binegative events may be more influential in the experience of fear among bi+ cisgender women than day-by-day differences in the experience of binegative events.

These findings were somewhat inconsistent with a daily diary study of bi+ individuals that found that binegative events were positively associated with depressed and anxious affect within-, but not between- persons (Feinstein et al., 2022); previous daily diary studies have also found positive associations between microaggressions and depressed (Flanders et al., 2019) and anxious (Flanders, 2015) affect within-persons. There were several differences in sample characteristics and measurement between our study and Feinstein and colleagues' (2022) study that may help to explain these differences in results. First, Feinstein and colleagues' sample consisted of relatively equal numbers of bi+ individuals who were cisgender women, cisgender men, and transgender or non-binary, whereas our sample consisted only of bi+ cisgender women. Additionally, our sample required participants to be in married or cohabiting romantic relationships, whereas participants were not required to be in romantic relationships to participate in Feinstein and colleagues' (2022) study. Finally, the majority of our sample was recruited from Prolific, whereas Feinstein and colleagues recruited all of their participants from social media (i.e., Facebook and Instagram). Additionally, the experience of binegative events and daily symptom measures were slightly different between the two studies. Any of these

differences (i.e., differences in gender, relationship status, recruitment method, or measurement) may have contributed to the different pattern of results between the two studies. Despite these differences, our study is consistent with previous research in that we broadly found positive associations between binegative events and sad and fearful affect, suggesting that the experience of stigma and discrimination is related to daily indicators of internalizing symptoms among bi+ cisgender women. The average percentage of days that participants experienced binegative events in our study (12.9%) was also similar to that reported in Feinstein and colleagues's (2022) study (8.9%), suggesting that bi+ cisgender women experience these events relatively infrequently, yet at a rate that is still impactful.

Our results also indicated that among individuals who experienced binegative events throughout the course of the study, individuals who were more bothered by binegative events on average were found to be sadder and more fearful on average. However, on days in which individuals were more bothered than average, they were not sadder or more fearful than average. These results suggest that day-to-day variability in how bi+ cisgender women perceive the severity of experienced binegative events to be is less associated with sadness and fear than how they perceive the severity of binegative events on average. It is also possible that women who tend to experience more sadness or fear tend to be more bothered by binegative events in general (i.e., sadness/fear is a cause, rather than a consequence, of experiencing binegative events as bothersome/severe). Despite the lack of within-subjects associations between binegative event severity and daily sadness and fear, the ICC for perceived binegative event severity was 0.29, suggesting that the majority of variability in this variable (i.e., 71%) was attributable to within-subjects variability over time as opposed to between-subjects variability. Therefore, the null findings regarding within-subjects associations between binegative event severity and sadness

and fear were likely not attributable to low within-subjects variability in the binegative event severity variable.

We found that sadness decreased over time when controlling for the presence and perceived severity of binegative events, whereas fear did not change over time. This unexpected result held through all of our analyses, with the exception of the analyses that examined PPR as a moderator or a main effect among the subset of participants who had disclosed some degree of thoughts, feelings, and facts about the binegative events to their partner. However, time may have not been significant in those models due to the smaller sample size and therefore, lower power; the strength of the association between time and sadness was similar in model 4a (b = -0.22) to the previous models predicting sadness (b = -0.13 to -0.23). It is possible that prompting participants to think about and report feelings of sadness and binegative events on a daily basis provided an opportunity for them to better understand their emotions, cognitively reframe the events, or reach out to others for support, resulting in a trend of lower sadness over time. Indeed, research has found that self-monitoring affect on a daily basis increases emotional self-awareness, which is associated with reduced depressive symptoms (Kauer et al., 2012). Although it was not intended as an intervention, our study may have had the unintended impact of decreasing feelings of sadness. More research is needed to better understand this trend and to examine if it replicates in other samples of bi+ individuals experiencing binegative events.

The degree to which bi+ women disclosed facts, thoughts, or feelings about the events to their partner did not buffer the association between perceived severity of binegative events and sadness or fear on the between-, within-, or between-by-within subjects levels. Additionally, in main effects models examining associations between disclosure and sadness or fear, disclosure was not associated with sadness or fear at the between- or within-subjects levels. No research

that we know of has been conducted specifically on the role of disclosure in buffering the association between stressful events and affect, making it challenging to compare our findings to previous research.

The degree to which individuals' partner responded in an understanding, validating, accepting and caring way (i.e., PPR) following disclosure of binegative events also did not buffer the association between the perceived severity of binegative events and sadness or fear on the between-, within-, or between-by-within subjects levels. However, we did find main effects for PPR; PPR was significantly associated with fear both between- and within- persons, whereas PPR was not significantly associated with sadness within- or between-persons. As PPR increased on average between-subjects, fear was found to decrease, suggesting that experiencing greater partner responsiveness around binegative events in general was associated with lower fear in general. However, on days in which individuals experienced more PPR than average, their fear was found to be higher than average. It is possible that on days that bi+ women were more fearful, their partner responded with more support than average, which would help explain this unexpected positive association.

There are a few possibilities with regard to the lack of a significant interaction effect of PPR on the association between binegative event severity and sadness or fear. First, our lack of findings could have been due to low power for detecting interaction effects. Our subset of participants who had disclosed anything about the experience of binegative events to their partner and who were subsequently asked about PPR was small (n= 89). The between-subjects interaction between PPR and binegative event severity on sadness approached significance in the hypothesized direction, and a sample with more participants would help determine whether our lack of findings were due to low power rather than a true lack of association in the population. It

is also possible that PPR truly does not buffer the association between binegative event severity and sadness or fear among bi+ cisgender women, at least for those in different-gender relationships, who comprised the majority of our sample. Previous research in same-sex couples has found that the association between sexual orientation discrimination stress and depressive symptoms was buffered by supportive coping, a construct similar to PPR (Randall, Tao, et al., 2017), and that joint dyadic coping (i.e., joint efforts by both partners to cope with stress) moderated the associations between heterosexist microaggressions and depressive and anxiety symptoms in male same-sex couples (Sarno et al., 2021). Importantly, in these previous studies, both the participant and their partner were part of the LGBTQ+ community, whereas in our study, the majority of our participants were partnered with heterosexual men. It is possible that partners who are not part of the LGBTQ+ community are less able to provide support that buffers the effect of sexual minority stress on mental health symptoms. Unfortunately, due to low power, in this study we were unable to determine whether partner gender or sexual orientation moderated the buffering effect of PPR on the association between binegative event severity and sadness or fear. However, future research is needed to determine whether bi+ cisgender women in same-gender relationships or in relationships with non-binary individuals experience similar stress-buffering effects to those found in previous research on same-sex couples.

It is also possible that romantic relationships generally do not provide the same type of stress-buffering for bi+ cisgender women, regardless of partner gender. Despite the potential stress-buffering effects of relationships, research has suggested that bi+ individuals in relationships may be at greater risk for certain types of bi+ minority stressors, some of which may come from their romantic partner. Some stereotypes of bi+ people include that they are

hypersexual and unable to commit to relationships (e.g., Feinstein & Dyar, 2017), which may strain bi+ individuals' relationships if their partner or people in their social environment believe these stereotypes. Indeed, both heterosexual and gay/lesbian individuals have endorsed being less likely to enter into a relationship with a bi+ person (Feinstein et al., 2014). If a bi+ person's partner endorses binegative stereotypes, they would be less likely to be a positive source of support around binegative events. Additionally, bi+ people may feel that their bi+ identity is invisible in the context of a relationship due to assumptions others may make about bi+ individuals' sexual orientation (i.e., heterosexual or lesbian/gay) based on the gender of their partner (e.g., Hayfield et al., 2013). Bi+ people may also be pressured by others (their partner or other people in their social environment) to change their identity to "match" the gender composition of the relationship (e.g., a bi+ woman dating a woman may be pressured to identify as a lesbian; Bostwick & Hequembourg, 2014).

We also asked participants specifically about bi+ identity-related discrimination, rather than more general measures of sexual minority stress, and the relationship measures used in previous studies of same-sex couples (i.e., measures of supportive coping and joint dyadic coping) differed from our PPR measure. It is possible that our PPR measure did not capture what is most important about a partner's response in buffering the effects of a binegative event on mental health outcomes. For instance, perhaps a partner's acknowledgment that a binegative event is unfair or unjust is more important than providing care, understanding, validation, and acceptance following a binegative event, which is what our measure captured. It may be useful to conduct an open-ended survey asking bi+ individuals what kind of support they would like from a partner following a binegative event, to determine what may be most important about a partner's response.

Although we collected data on who (e.g., partner, friend, family member, etc.) had perpetrated each of the binegative events in the present study, we did not examine differences in any of our variables or associations by stigma source (e.g., partner versus someone else) because of low statistical power to do so. It seems plausible that the source of binegative events may be related to a bi+ woman's likelihood to disclose information about the events to their partner and receive support. It is possible that participants who disclosed binegative events to their partner throughout the course of the study had learned earlier in their relationship, before the study began, that their partner was supportive of their bi+ identity and would be responsive to discussing binegative events. On the other hand, individuals who had experienced previous negative responses from their partner when discussing experiences related to their bi+ identity may have been less likely to disclose throughout the course of the study. We also did not ask our participants to rate their partner's perceived attitudes toward bisexuality, which would be an important factor to examine in future research.

Research has also indicated that the gender of a bi+ individual's partner may influence their experience of binegative events and mental health outcomes. For example, a daily diary study using the same sample as Feinstein and colleagues' (2022) previously described study found that bi+ individuals in mixed-gender relationships (i.e., one woman and one man) experienced higher mean daily negative affect compared to bi+ individuals in a same-gender relationship (Vilkin et al., 2022). Other research has found similar differences in mental health outcomes based on partner gender; for example, one study found that bi+ cisgender women who were partnered with men had higher depressive symptoms and higher minority stress than bi+ cisgender women who were partnered with women (Dyar et al., 2014). Another study found that the source of minority stress may matter in combination with partner gender: experiencing

binegativity from lesbian and gay individuals was more strongly associated with internalized binegativity among individuals in same-gender relationships than different-gender relationships (Arriaga & Parent, 2019). Although we collected partner gender in the present study, the majority of our participants were partnered with men, making us underpowered to examine differences in associations between our variables by partner gender. Future research should examine whether partner gender impacts the associations between minority stress variables and mental health among bi+ individuals, and should take the source of minority stress into account. For instance, building off of Arriaga and Parent's (2019) research, it is possible that bi+ women with a same-gender partner might have higher depressive or anxiety symptoms following binegativity from lesbian or gay individuals.

With regard to the panel design that aimed to test the degree to which internalized binegativity accounted for the interaction effect of relationship adjustment and binegative events on internalizing symptoms, we found no evidence that baseline relationship adjustment moderated the association between the frequency/severity of binegative events and day 28 depressive or anxiety symptoms, or day 21 internalized binegativity, when controlling for baseline levels of the outcome variables. Main effect models that were subsequently conducted also found no significant association between baseline relationship adjustment and follow-up depressive and anxiety symptoms, when controlling for baseline levels of these symptoms and binegative events. These null findings may be the result of multiple factors. First, we did not manipulate the experience of binegative events, internalized binegativity, or relationship adjustment in our study, and we did not assess the frequency with which people were experiencing binegative events before the study began. If there was limited change in binegative event frequency or severity from before the study to during the study, depressive and anxiety

symptoms may have changed little, limiting the amount of variance our predictor variables could explain after controlling for baseline levels of these symptoms. Second, little is known about the time course with which binegative events, and changes in these events, impact internalized binegativity or mental health among bi+ cisgender women. It is possible that accumulating binegative stress over a longer period of time (e.g., months or years rather than weeks) is more impactful on mental health, and that a month was not a long enough time to fully capture the associations between these variables.

In post-hoc analyses, we found that the frequency of binegative events over the first 21 days of the study was significantly and positively associated with internalized binegativity at day 21 when controlling for baseline internalized binegativity, baseline relationship adjustment, and the mean severity of binegative events. However, the frequency of binegative events over the first 21 days of the study was significantly and *negatively* associated with depressive and anxiety symptoms at day 28, controlling for baseline symptoms, baseline relationship adjustment, and mean severity of binegative events. In combination with our daily diary findings suggesting that mean daily sadness and fear were higher for bi+ cisgender women who experienced more frequent binegative events, this pattern of results is puzzling, suggesting that the experience of more frequent binegative events is associated with higher internalized binegativity, but lower depressive and anxiety symptoms. Additionally, we found that individuals who had completed only one or two of our cross-sectional surveys at baseline, day 21, and day 28 had higher depressive symptoms and marginally higher anxiety symptoms at baseline than those who completed all 3 timepoints, suggesting that the results from our panel design may not be generalizable to bi+ cisgender women with more severe symptoms.

The study included several additional limitations. First, there was a technological problem

with the EMA software at one point during data collection, resulting in a subset of participants who used Android devices not being able to be included in our analyses, which lowered our power to detect effects. As previously discussed, we were likely especially underpowered to detect moderation effects in our daily diary analyses, in part due to the low frequency with which participants in the study reported binegative events. Therefore, our lack of moderation findings should be interpreted with caution; it would be beneficial to replicate this study with a larger sample size in order to more definitively determine the degree to which disclosure and PPR may, or may not, moderate associations between binegative event severity and affect.

Second, we had several challenges with participant recruitment that call into question some of our results. Although we attempted to recruit primarily from Reddit, the quality of our pre-screen data was poor, resulting in only 13 participants from the initial 588 that we pre-screened who remained in our final analytic sample. Although we did not detect any data quality problems with the 13 participants who were included, it is unclear to which population this small sample would generalize. The participants recruited from Reddit reported binegative events much more frequently, were more bothered by binegative events, reported higher mean daily sadness and fear, and had higher internalized binegativity and lower relationship adjustment at baseline than the remainder of the participants, who were recruited from Prolific. Some of these differences may have been found because the participants recruited from Reddit were largely recruited from subreddits targeting bi+ people, whereas the Prolific subgroup of participants reported their sexual orientation as one of many demographic characteristics when they signed up for Prolific, and were not explicitly participating in a social media platform geared toward LGBTQ+ individuals when they were recruited for the study. The women who frequent bi+ subreddits may be more likely to view their bi+ identity as an important part of their identity (i.e., have higher

identity centrality), resulting in them being more bothered by binegative events, as well as more likely to experience them. For instance, one study found that among bi+ people, identity centrality was positively correlated with attempts to make one's bi+ identity visible and discrimination from both heterosexual and lesbian and gay individuals (Feinstein et al., 2020), although the same study found a negative correlation between identity centrality and internalized binegativity (Feinstein et al., 2020), suggesting that simply having higher identity centrality would not fully explain the pattern of results that we found for our Reddit (relative to Prolific) participants. Regardless, our findings suggest that where researchers recruit bi+ individuals from may matter: because many researchers recruit bi+ individuals from social media, the field would benefit from a study comparing bi+ individuals from different recruitment sources on key identity, health, and minority-stress related variables, as well as the associations between these variables, to better understand to whom our results may generalize.

Finally, the study sample was composed of only cisgender bi+ women, which limits the generalizability of the findings to cisgender men and gender minority individuals. The majority of our sample was also White. These are important limitations, especially considering that research has indicated that the majority of gender minority individuals identify as bi+ (James et al., 2016) and that gender minority bi+ individuals experience higher anxiety and depressive symptoms than cisgender bi+ individuals (Feinstein et al., 2021). Racial and ethnic minority bi+ individuals often experience microaggressions at the intersection of race and bi+ orientation, which are associated with poorer mental health (Bostwick et al., 2021). Future studies should include a diverse sample of participants in order to ensure that the results are applicable to these important subsets of the bi+ population.

Despite these limitations, the present study is the first that we know of to examine romantic

relationship factors as potential binegative stress-buffering factors in a sample composed solely of bi+ individuals. Our use of daily diary methodology, which has been found to be more accurate than retrospective data collection methods (e.g., Bolger & Laurenceau, 2013) is an additional strength. Overall, the results from the present suggest that more research into the stress-buffering effects of romantic relationships is needed among bi+ people, particularly research that takes into account the source of binegative events, partner gender and partner attitudes toward bi+ orientations, as well as includes participants with greater diversity with respect to gender and race.

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