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Trajectories of Mental Health in a Tumultuous Period

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AI Statement: Under the supervision of the first author, AI was used to check code, and create do-files that were used in Stata to create tables and figures.

Abstract

Families headed by LGBTQ+ parents are increasing in the US, as is the LGBTQ+ population. Yet these families are being targeted by significant onslaught of anti-LGBTQ+ legislation and a worsening social climate. We examine trajectories of depressive symptoms, anxious symptoms, and loneliness among by sexual orientation from the pandemic through the 2025 using three waves of data from the National Couples' Health and Time Study. Overall, we find stability in depression, anxiety, and loneliness when examining weighted average within person change via difference-in-difference models by sexual identity. Yet spaghetti plots illustrated substantial sample variability despite aggregate stability. We then conducted weighted Latent Growth Curve Models. We examined key vulnerabilities and strengths; model fit improved when strengths were added to the model above and beyond vulnerability only models. Discrimination was a strong significant predictor of all three indicators of wellbeing and was most pronounced for depressive symptoms. Social support, community support, and family functioning attenuated the negative effects of discrimination but did not fully eliminate the discrimination effects. Relationship quality was consistently associated with better wellbeing across all three outcomes. Perceived lesbian, gay, and bisexual positive community climate buffered depression and anxiety for sexual minority groups. Overall, there is no evidence that wellbeing improved since the end of the pandemic.

Trajectories of Mental Health in a Tumultuous Period

Families headed by LGBTQ+ individuals are a growing segment of the population. Overall, 7% of adults in the US identify as lesbian, gay, bisexual, or transgender (Jones 2023), but 20% to 27% of Gen Z (born 1997-2003) identify as LGBTQ+ (Goldberg et al. 2022, Jones 2022a, Jones 2023). About 38% of LGBTQ+ adults are married or cohabiting, and 43% are married to or live with a partner of the same gender (Jones 2022b). Sexual minority individuals (i.e. individuals who have a sexual identity that is not solely heterosexual) entered the pandemic at a significant mental health disadvantage and reported poorer mental health during the pandemic (Bostwick et al. 2014, Bostwick et al. 2019, Kamp Dush et al. 2022, Moore et al. 2021). During times of crisis, ecological disasters or wars, some individuals or families do well, feeling an increased sense of self-efficacy, an experience that has been termed “post-traumatic growth” (Tedeschi and Calhoun 2004).

Yet others face serious adverse mental health effects that can persist for an extended period (Morganstein and Ursano 2020). For sexual minority individuals, there has been a major onslaught of anti-LGBTQ+ bills since 2020. The passage of the Respect for Marriage Act in 2022 strengthened rights for same-sex couples (2021–2022). Despite this positive development, public support for same-sex marriage has plateaued (Brenan 2024). In 2025 alone, over 616 anti-LGBTQ+ bills have been introduced in states during the 2025 legislative session (ACLU 2025). These bills include laws that restrict how LGBTQ+ persons appear in the world through banning books and other media, obstructing access to medically-necessary healthcare, and preventing discussions of LGBTQ+ persons and issues in schools. The human rights of LGBTQ+ persons are under attack in many states with profound implications for the health and wellbeing of LGBTQ+ individuals and families. In a recent study of 113 Florida families headed by sexual

minority parents, more than half were considering moving out of the state, and 17% had already begun the process (Goldberg 2023).

Although LGBTQ+ individuals face inequitable mental health challenges, there are also key strengths in the LGBTQ+ community. As argued by Meyer (2015), there are two key types of resilience in the LGBTQ+ community: individual-based resilience and community-based resilience, with the latter referring to ways in which communities help their members cope with stress and adversity (Fergus and Zimmerman 2005, Hall and Zautra 2010). Meyer (2015) and Bryant, Anderson, and Notice (2022) critique the focus on individual-based resilience, as it infers that personal fortitude and characteristics are enough to cope with minority stress, rather than focusing on the root cause of that stress: cis-heterosexism. Community-based resilience can be enhanced by policy efforts. For example, individual reports of community LGB acceptance and partner and family social support were associated with better mental health (Kamp Dush et al. 2022). Qualitative data collected from SGD individuals during the pandemic illustrated that the SGD community helped individuals cope with the COVID-19 pandemic (Gonzalez et al. 2021).

We seek to examine trajectories of mental health (depression, anxiety, and loneliness) from the pandemic through 2025 using new data from the National Couples' Health and Time Study. Due to the stress of the past five years for the LGBTQ+ population, we seek to examine these trajectories by sexual identity, and test vulnerabilities (SES, discrimination; stress overload), strengths (social support, community support), and family functioning (relationship quality).

Theoretical Framework: Our analysis is based on a novel, antiracist, theoretically derived Contextual Stress and Recovery and Decline Framework specific to this era of uncertainty and stress. We measure not only exposures to but also subjective appraisals of stress that may be more

salient to health and well-being (Brown et al. 2020). By leveraging the rich set of questions about experiences of discrimination based on race, gender, and sexual identity, as well as contextual data, we answer the call of (especially) race scholars who have long implored researchers to do better in measuring the *processes and structures* that create risk rather than focus only the identities of those subject to these processes and structures. That is, we need to measure the impacts of marginalization, rather than the identities of the marginalized (Boyd et al. 2020). The work of measuring and “centering at the margins” is important in all investigations, rather than being siloed in studies of race or sexual identity. Although COVID may subside, there is no vaccine for racism or cis-heterosexism, so the knowledge we generate about the mechanisms driving health disparities will, unfortunately, be necessary until the racist and cis-heterosexist structures themselves can be dismantled.

Our framework is derived from the Prime, Wade, and Dillon (2020) COVID Family Risk and Resilience Framework and is informed by: family systems (Cox and Paley 1997) and developmental systems theory (Lerner and Overton 2008), bioecological (Bronfenbrenner 2005) and family stress models (Masarik and Conger 2017), the Black Advantage Vision (Pattillo 2021), minority stress theory (Meyer 2015, Meyer 2003), the psychological mediation framework (Hatzenbuehler 2009), and the couple-level minority stress framework (LeBlanc, Frost and Wight 2015). The framework is guided by five key principles. First, marginalization, i.e., structural marginalization leads to disparities in stress and trauma. Second, when persons who are minoritized enter into intimate relationships, they become vulnerable to unique, couple-level stressors because their relationship itself is socially stigmatized and marginalized (LeBlanc, Frost and Wight 2015), particularly if those relationships are same-gender or interracial. This unique stress can result from being in a relationship (i.e., having to conceal the relationship from extended

family) or can result from stress-spillover due to their partner's stigma-related stress (i.e., as a result of one's partner being denied a promotion due to their marginalized status) (LeBlanc, Frost and Wight 2015). Thomeer, Reczek and Umberson (2015) found that gay and lesbian partners offer support to depressed partners, suggesting that family functioning could alleviate depression among sexual and gender minorities. The association between family functioning and health is powerful and well-documented (Kiecolt-Glaser and Newton 2001, Kiecolt-Glaser, Gouin and Hantsoo 2010, Robles et al. 2014). Third, mental health and family functioning recovery and/or decline are multiply determined by both distal (e.g., structural discrimination) and proximal (e.g., social support and racial trauma stress) factors. Some are pre-existing strengths, such as racial socialization, and others are pre-existing vulnerabilities, such as adverse childhood experiences. Other factors are dynamic and may change across time, such as stress and social support. Fourth, marginalized populations have unique strengths and advantages, such as racial socialization (Gallo et al. 2009, Keyes 2009) and community support (Fergus and Zimmerman 2005, Hall and Zautra 2010) that have been understudied. These strengths may shield minoritized individuals from some detrimental effects of marginalization and may actually lead to thriving, including better mental health (Keyes 2009) and family functioning (Goldberg, Gartrell and Gates 2014). Further, there is substantial variability among marginalized populations. A factor such as religion may be a source of mental health strength and growth for one marginalized population (Bierman 2006) and a vulnerability and threat for another marginalized population (Sowe, Brown and Taylor 2014, Subhi and Geelan 2012). The context of marginalization matters. Fifth, there will be variability in change in mental health and family functioning following stressors such as the pandemic or the current LGBTQ+ policy environment. During times of crisis, ecological disasters or wars, some individuals or families do well, feeling an increased sense of self-efficacy, an experience that has

been termed “post-traumatic growth”(Tedeschi and Calhoun 2004). Yet others face serious adverse mental health effects that can persist for an extended period (Morganstein and Ursano 2020). Understanding the mechanistic factors impacting growth and decline following the onset of the pandemic and the remarkable growth in anti-LGBTQ+ (ACLU 2023) is critical.

Method

We use data from Waves 1, 2, and 3 of the National Couples’ Health and Time Study (NCHAT). Wave 1 was fielded from September 2020 to April 2021 ($N = 3642$) and Wave 2 from February 2022 to April 2022 ($n = 2723$). Wave 3 entered the field in July 2025, and was completed in February 2026 ($n = 2457$). NCHAT is nationally representative of individuals in the US ages 20-60 years old who were married or cohabiting in 2020. The respondents were primarily members of the Gallup Panel, a probability-based nationally representative panel of over 110,000 individuals. Additional sexual minority respondents were recruited from other population-representative Gallup samples. At each wave, web-based surveys were completed in Spanish and English.

Measures

Dependent Variables. *Depression* was measured using the 10-item CES-D Short Form (Andresen et al. 1994). Respondents were asked how often they felt certain ways (e.g., lonely, depressed) in the past seven days on a 3-point scale from Rarely or none of the time (less than 1 day) to Most or all of the time (5-7 days). The items were summed for the latent growth curve models and averaged to retain the measure for those with item level missing data for the difference-in-difference models ($\alpha = .87$). *Anxiety* was measured using the 7-item Generalized Anxiety Disorder measure (Spitzer et al. 2006, Tiirikainen et al. 2019). Respondents were asked how often they were bothered by seven different problems in the past seven days (e.g., not being

able to stop or control your worrying) on a 4-point scale from not at all to nearly every day. The items were summed ($\alpha = .92$). *Loneliness* was measured using a sum of the 3-item R-UCLA Loneliness measure (Hughes et al. 2004). Respondents were asked how often they were bothered by three different problems (e.g., “How often did you feel that you lack companionship?”) over the past seven days on a 5-point scale from never to very often ($\alpha = .84$).

Independent Variable. Respondents answered the following question about their *sexual identity*, “What do you consider yourself to be? Select all that apply” with eleven responses including heterosexual or straight, gay or lesbian, bisexual, same-gender-loving, queer, pansexual, omnisexual, asexual, don’t know, questioning, and “something else,” with an option to specify. We coded respondents into four mutually exclusive categories heterosexual, gay/lesbian, bisexual/pansexual/omnisexual, and other/multiple sexual identities. Note that for these preliminary models, we only included heterosexual, gay/lesbian, bisexual (plus pansexual and omnisexual). We will include other identities prior to PAA.

Socioeconomic Status. *Education* was coded into four categories: less than high school, high school degree, some college or post-high school education, and a college degree. Respondents reported their current *employment status*, including full-time, part-time, and unemployed. *Household income* was top coded at the 95% level and was logged due to the skewed nature of the variable.

Stressors. *Stress overload* was measured using a sum of the short Stress Overload scale (Amirkhan 2018). Respondents reported how often they felt seven different ways (e.g., overwhelmed by your responsibilities) on a scale from 1 (never) to 5 (very often) over the past seven days. (7-items; $\alpha = .85$). Discrimination in everyday life (Meyer et al. 2016, Williams 1997) was based on respondents’ responses to “In your day-to-day life over the past month, how

often did any of the following things happen to you?” and included nine domains, including “You were treated with less respect than other people” and “You were threatened or harassed” on a scale of 1 (never) to 5 (very often). An average of the 9-items was taken ($\alpha = .85$), with a higher value indicating more frequent experiences of microaggressions.

Relationship Functioning. *Couple Satisfaction Index* (Funk and Rogge 2007) was measured as the sum of four items ($\alpha = .89$) including “Please indicate the level of happiness, all things considered, in your relationship” on a scale from 1 (extremely unhappy) to 7 (perfect); “I have a warm and comfortable relationship with my spouse/partner I have a warm and comfortable relationship with my spouse/partner” on a scale from 1 (not at all true) to 6 (completely true); “How rewarding is your relationship with your spouse/partner?” on a scale from 1 (not at all rewarding) to 6 (completely rewarding); and “In general, how satisfied are you with your relationship?” on a scale from 1 (not at all satisfied) to 6 (completely satisfied).

Social Support. *Social Support* was measured by three questions (Procidano and Heller 1983), “How much do you rely on each of the following people for emotional support ... I rely on my partner for emotional support, I rely on my family for emotional support, I rely on my friends for emotional support.” Responses ranged from 1 (not at all) to 5 (a great deal). Due to a low alpha ($\alpha = .51$), we created domain specific measures of social support for partner, family, and friends. Measured at each wave.

Contextual. *Perceived Community Climate* (Meyer et al. 2016, Poll 2008) was assessed as whether the city or area where the participant lived was a good place for 1) people who are gay, lesbian, or bisexual, and 2) people who are transgender or nonbinary (agender, gender-neutral, gender fluid) on a 1 to 5 scale from “not a good place” to “a good place.”

Demographic Controls. Demographic controls were measured at Wave 1. Respondents

reported their *race/ethnicity*, coded as: non-Latine White, non-Latine Black, non-Latine Asian, non-Latine other race, non-Latine Multirace, or Latine. Respondents reported their *gender identity* from five options, including Woman, Man, Trans Woman, Trans Man, and some other gender identity. For these analyses, three categories were created: cis-women, cis-men, and transgender/non-binary. Respondents reported if they were legally *married* to their spouse/partner; we will update marital status at each Wave and include it as a time-varying covariate. *Age* was constructed using the respondent's birth month and year and the month and year they completed the survey. Respondents completed a household roster and reported demographic characteristics of all members of their household. We created a code for the number of *household children* under the age of 18 and the variable was dichotomized to any children. We will include this for each wave. A dichotomous indicator for *interracial couples* was constructed if the main respondent's race and ethnicity did or did not match their spouse/partner's race and ethnicity and a dichotomous indicator for *foreign born* was constructed if the main respondent was born outside of the United States. *Cohabitation duration* was measured from the month and year couples moved in together and the month and year of the main respondents survey.

Weights

The data were weighted to be population representative of 20- to 60-year-old married or cohabiting couples in the United States using targets from the ACS (United States Census Bureau 2019) and the NHIS (Center for Disease Control and Prevention 2019). After constructing the base weights, they were adjusted using a multiple iterative raking procedure to post-stratify by age, sex, education, race, ethnicity, and marital status. Further, longitudinal weights took into account attrition.

Analytic Plan

First, we conducted weighted difference-in-difference models to examine within-person change between Waves 1 and 3, limiting the sample to only those who remained in stable relationships using survey mean and xtreg with fixed effects in Stata. Next, to examine the role of time invariant and time varying covariates as well as between person change, we used structural equation modeling (SEM) to further test how mental health changed from the early pandemic to five years later, whether those changes varied by sexual identity, and what role explanatory variables played in that change. We fit weighted multi-group unconditional latent growth curve models (LGCM) for depression, anxiety, and loneliness across the three waves. To examine group differences in the mean, variance, covariance, and residual variance in the growth parameters, we fit four nested multi-group models, each relaxing additional model constraints. We began with the invariance model, where all estimated parameters were invariant across groups. Then we allowed the means of the intercept and slope parameters to vary across groups. The next model allowed for the means, variances, and covariances to be estimated separately for each group. And the final model allowed all estimated parameters of the linear growth model (all parameters in the previous model plus the residual variances) to be group specific. Our results indicated that the model with the group mean differences in depression, anxiety, and loneliness intercept and slope parameters was the most appropriate. Once we identified that model defined the best fitting pattern of change across the groups (Model 1 in our latent growth curve tables), our next step was to test the role of vulnerabilities (income, discrimination, stress), strengths (social support, community support), and family functioning (relationship quality) in buffering or exacerbating these trajectories. We first began by adding vulnerabilities, the potential exacerbating effects, which are reported as Model 2. These models

served to establish the baseline impact of minority stress and structural disadvantages on loneliness across the three groups. Subsequently, a full model (reported as Model 3) was estimated by adding time-varying strength factors, including social support and community connectedness. This multistep process allowed us to examine whether the inclusion of strengths attenuated the longitudinal associations between discrimination and loneliness established in the vulnerability model.

We used the Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) to assess absolute model fit (Raykov and Marcoulides 2006), where the $RMSEA < 0.05$ and $SRMR < 0.08$ were considered good fit. Because no one fit index could assess all aspects of goodness of fit (Sun 2005), we also examined the Comparative Fit Index (CFI), Akaike Information Criterion (AIC) and χ^2 difference test to compare model fit of each nested model after relaxing equality constraints across groups. Lower AIC values indicated better model fit (Byrne, 2016) and $CFI > 0.90$ indicate good model fit. Model fit statistics are reported in Table 3.

Descriptive Results

We plotted spaghetti plots of the change in depression anxiety, and loneliness from Waves 1 to 3. As Figure 1 illustrates, on average there was stability in wellbeing, but substantial variability within the sample. Descriptive statistics by wave are reported in Table 1.

Weighted Difference-in-Difference Results

The weighted difference-in-difference models (see Table 2 and Figure 2) suggested that on average, there was no significant substantial within-person average change in depressive symptoms, anxiety, or loneliness between Waves 1 and 3. Further, there was no difference in the average change between any of the sexual identity groups.

Weighted Latent Growth Curve Results

As indicated in the baseline model, the intercept for the loneliness trajectories were statistically significant for all three sexual identities examined (see Table 6). Those that were exclusively gay or lesbian had slightly higher baseline loneliness than exclusively heterosexual (6.17 vs. 5.89), but lower than bisexual/other (7.52). However, the change in loneliness was not statistically significant for any of the sexual identities.

To evaluate the potentially protective role of social support, community support, and family functioning, we added these time varying covariates to the vulnerabilities model. Including these strength variables resulted in an attenuation of the effect of discrimination on loneliness. For both the gay/lesbian and bisexual/other groups, the magnitude of the effect of discrimination on loneliness at both Wave 1 and Wave 3 was substantially reduced (at Wave 3 from 1.00 to .62 for heterosexual, 1.31 to 1.02 for gay/lesbian, and 1.66 to .97 for bisexual/other). See Figure 5.

Interestingly, for the bisexual/other group, education at Wave 1 was not significant in the vulnerabilities model. However, after controlling for strengths, it emerged as a significant predictor of loneliness at Wave 1 (1.51). This suggests that once the social benefits of educational attainment are accounted for, then the structural or environmental challenges (i.e. vulnerabilities) associated with higher education for bisexual individuals contributed significantly to feelings of isolation.

Across all three sexual identity groups examined, couple satisfaction significantly predicted lower loneliness at every wave. This result highlights the role of relationship quality in buffering loneliness.

Model comparisons were made using Information Criteria (AIC, BIC) and a comparison

of global fit indices. We found that the inclusion of strength factors provided a statistically superior representation of the data compared to the vulnerability-only model. The full model demonstrated superior fit compared to the other less complex models, evidenced by a substantial reduction in the AIC, BIC, RMSEA and an improvement in the CFI and TLI. These results confirm that the addition of psychosocial strengths provides a more complete explanation of loneliness than vulnerabilities alone.

We next fit the multigroup longitudinal model for depression (see Table 4 and Figure 3) and found that the impact of discrimination on depression was significant for all three sexual identity groups examined. The effect of discrimination was much stronger on depression than it was for loneliness. The magnitude of this effect for sexual minorities was particularly large, where a 1 unit increase in discrimination led to about a 4 point increase in depression for the bisexual/other group. Even after adding strengths as buffering effects (decreasing the effect to about 2.8) the effect of discrimination was still quite high. While adding social and community support helps, it did not completely buffer the impact of discrimination on depression.

Just as we saw in the loneliness model, couple satisfaction was significant and negative (therefore reducing depression) for all three sexual identities examined. Couple satisfaction had the highest impact for the gay/lesbian group at Wave 3, where higher satisfaction reduced depression by about .5. Community climate at Wave 3 was also a significant protective factor for sexual minority groups, reducing depression by .87 and .70 for gay/lesbian and bisexual/other groups respectively. Interestingly, for the gay/lesbian group, Wave 1 actually showed a positive significant impact of friend support on depression, where every one unit increase in friend support was associated with a .9 unit increase in depression. This may suggest that those who were most depressed were reaching out to friends more.

Finally, we fit the multigroup longitudinal model for anxiety and found that community climate was a significant buffer for all sexual minority groups at Wave 3 (see Table 5 and Figure 4). For every one unit increase in perceived community climate, anxiety was reduced by .53 and .64 for the gay/lesbian and bisexual/other groups respectively. Just as for loneliness and depression, discrimination was a strong driver of anxiety at Wave 3. While including strengths did seem to buffer the effect of discrimination on anxiety, it still remained positive and significant for all sexual identity groups examined. The effect of discrimination on anxiety at Wave 3 was twice as damaging for the gay/lesbian group (2.88) compared to the heterosexual group (1.18). However, including these strengths in the model (specifically community climate and family support) seemed to explain a large reason why discrimination was associated with anxiety for the bisexual/other group (reduced from 2.78 to 1.74 at Wave 3). Interestingly, having full time employment was associated with significantly higher anxiety for the gay/lesbian group at Wave 1, but seemed to be buffered by the addition of support variables. Education also seemed to be a protective factor at Wave 3 for the gay/lesbian group, which is the opposite effect of education on loneliness. For anxiety, after controlling for social strengths, higher education was associated with a significant reduction for the gay/lesbian group. This may indicate that education can provide a mechanism to managing anxiety that was being masked by social and community support. One counterintuitive finding was that as partner support increases, it was associated with a significant increase in anxiety at Wave 1 for the heterosexual group and at Wave 3 for the gay/lesbian group. Overall, couple satisfaction seemed to consistently reduce anxiety for the heterosexual and gay/lesbian groups, whereas community climate was associated with a significant reduction in anxiety for sexual minorities.

Sensitivity Analyses and Robustness Checks

In results not shown, we re-analyzed the data limiting the sample to only those who remained with the same partner. When examining the trajectories for the loneliness outcome variable, for the heterosexual group we saw a slight increase in the effect of discrimination at Wave 1 when considering only those who were in a stable relationship (from .35 to .42), but we actually saw a slight decrease in the effect of discrimination at Wave 3 (from .62 to .59). We saw a slight improvement in the buffering effect of having fulltime employment when considering only those in stable relationships (from -.19 to -.28). We similarly saw a slight increase in the effect of discrimination at Wave 1 for the gay/lesbian group (.66 to .75) as well as at Wave 3 (1.02 to 1.21). We also saw a slight increase in the effect of stress at Wave 1 and Wave 2 (from .16 to .18 and .13 to .14 respectively). For the bisexual/other group, we saw a slight decrease in the effect of education at Wave 1 when considering only those in stable relationships (1.51 to 1.28). We saw a slight decrease in the effect of stress at Wave 1 (from .16 to .15), but an increase at Wave 2 (from .09 to .09).

Turning to depression, for the heterosexual group, the effect of discrimination and stress at Wave 1 was slightly lower when only including those in stable relationships (1.04 to .79 and .58 to .46 respectively). Interestingly, the risk associated with higher education at Wave 1 actually went from non-significant to significant when only looking at those in stable relationships (as education increased, it was associated with a .75 unit increase in depression). It remained non-significant at Wave 3. Working full time at Wave 3 emerged as a significant protective factor when looking at those in stable relationships (-.72). Partner support at Wave 3 was no longer a significant predictor of depression. The effect of discrimination at Wave 1 and 3 for the gay/lesbian group increased slightly when looking at those in stable relationships (1.04 to 1.14 and 2.84 to 3.11 respectively). No other meaningful differences were present. No

meaningful differences were present for any of the vulnerability or strength variables in the bisexual/other group.

When examining the anxiety trajectories, the results were largely the same for the heterosexual group when only examining those in stable relationships. We saw a minor increase in the effect of discrimination and partner social support at Wave 1 (.47 to .52 and .28 to .33 respectively). For the gay/lesbian group, discrimination remained non-significant at Wave 1, but the effect of discrimination at Wave 3 slightly increased when looking only at stable couples (2.88 to 3.33). We saw a slight decline in the buffering effect of education at Wave 3 (-1.23 to -1.07). There was however, a very minor increase in the buffering effect of couple satisfaction across all three waves (-.06 to -.10, -.14 to -.17, and -.32 to -.35). For the bisexual/other group, there was a slight increase in the effect of stress (.53 to .57) but a slight decrease in the effect of discrimination at Wave 3 (1.74 to 1.57). Interestingly increased couple satisfaction was actually associated with an increase in anxiety when only examining those in stable relationships, though it remained non-significant at Waves 2 and 3.

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Table 1. Weighted Descriptive Statistics.

	Wave 1			Wave 2			Wave 3		
	M	SD	%	M	SD	%	M	SD	%
Wellbeing									
Depressive Symptoms	0.76	0.59		0.69**	0.57		0.73	0.58	
Anxiety	1.64	0.72		1.60	0.67		1.57**	0.67	
Loneliness	1.99	0.94		1.92*	0.89		2.03	0.96	
Sexual Identity									
Heterosexual			96.6%						
Gay or Lesbian			1.2%						
Bisexual			1.3%						
Other or multiple identities			0.9%						
Demographic Characteristics									
Race/Ethnicity									
Non-Latina/o/x White			56.1%						
Non-Latina/o/x Black			7.4%						
Non-Latina/o/x Asian			6.6%						
Latina/o/x			21.6%						
Non-Latina/o/x Multirace			3.4%						
Other Racial/Ethnic Identity			4.9%						
Gender									
Cis-Man			48.6%						
Cis-Woman			50.9%						
Another Gender Identity			0.5%						
Married (Cohabiting) at Wave 1			80.9%						
Dissolved at Wave 2 or 3						5.2%			11.7%
Age	42.58	10.44							
Household Children <18									
1			18.5%						18.2%***
2 or more			26.1%						26.5%***
Vulnerabilities									
Discrimination	1.47	0.51					1.38***	0.45	
Stress Overload	2.26	0.93							
Income	11.30	1.50					11.65***	1.38	
Education									
High school or less			36.9%						
Some College			16.6%						
Bachelor's Degree +			46.6%						
Strengths									
Family Support	3.35	1.23					3.14***	1.31	
Friends Support	2.99	1.18					2.84***	1.27	
LGB Community Climate	3.79	1.04					3.69**	1.12	
Family Functioning									
Couple Satisfaction Index	19.10	4.62		19.57*	4.05		18.85***	4.77	
Partner Support	4.07	1.07					3.97***	1.14	
<i>N</i>			3641			2701			2377

Note. National Couples' Health and Time Study Waves 1, 2, and 3. Stars in Wave 2 and Wave 3 cells indicate significant difference from Wave 1, the reference. * $p < .05$ ** $p < .01$ *** $p < .001$.

Table 2. Outcomes, Vulnerabilities, and Strengths by Sexual Identity.

	Wave 1			Wave 2			Wave 3		
	Hetero- sexual	Gay/ Lesbian	Bi/ Other	Hetero- sexual	Gay/ Lesbian	Bi/ Other	Hetero- sexual	Gay/ Lesbian	Bi/ Other
	<i>M/(SD)/%</i>	<i>M/(SD)/%</i>	<i>M/(SD)/%</i>	<i>M/(SD)/%</i>	<i>M/(SD)/%</i>	<i>M/(SD)/%</i>	<i>M/(SD)/%</i>	<i>M/(SD)/%</i>	<i>M/(SD)/%</i>
<i>Wellbeing</i>									
Depressive Symptoms	0.75 (0.44)	0.84** (2.66)	1.26*** (2.21)	0.68 (0.44)	0.81 (2.50)*	1.08*** (2.09)	0.72 (0.45)	0.89 *** (2.60)	1.14*** (2.03)
Anxiety	1.62 (0.54)	1.76*** (3.00)	2.17*** (2.76)	1.59 (0.52)	1.73 (2.97)	1.99*** (2.45)	1.56 (0.51)	1.75*** (3.00)	2.02*** (2.49)
Loneliness	1.98 (0.71)	2.05 (3.86)	2.58*** (3.27)	1.92 (0.69)	2.07 (3.75)	2.22*** (3.34)	2.01 (0.74)	2.08 (4.10)	2.48*** (3.25)
<i>Vulnerabilities</i>									
Discrimination	1.47 (0.38)	1.39* (2.00)	1.58* (1.94)				1.38 (0.35)	1.38 (1.88)	1.51*** (1.54)
Stress Overload	2.25 (0.70)	2.36* (4.21)	2.87*** (3.44)						
Income (logged)	11.31 (1.13)	11.45 (6.22)	10.95*** (4.90)				11.65 (1.08)	11.68 (6.51)	11.42** (3.34)
<i>Education</i>									
High school or less	37.1%	22.0%***	32.3%						
Some College	16.5%	19.2%	19.7%						
Bachelor's Degree +	46.4%	58.7%***	48.0%						
<i>Strengths</i>									
Family Support	3.36 (0.93)	2.92 *** (5.12)	2.91*** (4.06)				3.15 (1.02)	2.73*** (5.26)	2.84*** (3.92)
Friends Support	2.98 (0.89)	3.23*** (5.02)	3.17* (3.72)				2.83 (0.99)	3.16*** (5.10)	3.15*** (3.69)
Perceived LGB Community Climate	3.79 (0.79)	3.90 (4.38)	3.67 (3.26)				3.69 (0.87)	3.76 (4.78)	3.55 (3.57)
<i>Family Functioning</i>									
Couple Satisfaction Index	19.11 (3.49)	19.31 (17.89)	18.42 (15.79)	19.59 (3.14)	19.58 (14.81)	18.62* (14.55)	18.85 (3.67)	19.05 (18.49)	18.63 (14.79)
Partner Support	4.07 (0.81)	4.16 (4.11)	4.03 (3.54)				3.96 (0.87)	4.23*** (4.30)	4.12 (3.28)
N	2021	830	790	1606	527	568	1396	480	501

Note. Each wave weighted to that waves' weight. Within each wave, stars indicate that the sexual minority group differs significantly from the Heterosexual reference. Tests are weighted regressions. * p<.05 ** p<.01 *** p<.001.

Table 2. Difference-in-Difference Estimates of Change in Wellbeing: Stable Relationship Sample Only.

Sample	Depressive Symptoms			Anxiety			Loneliness		
	Difference	SE	n	Difference	SE	n	Difference	SE	n
Heterosexual vs. Gay/Lesbian									
Heterosexual	-0.022	0.016	1229	-0.065	0.021	1227	0.027	0.030	1233
Gay/Lesbian	-0.009	0.039	409	-0.009	0.049	409	-0.052	0.059	408
Difference-in-difference estimate	0.013	0.043	1638	0.057	0.053	1636	-0.079	0.066	1641
F statistic (p value)	0.09 (0.761)			1.15 (0.284)			1.45 (0.229)		
Cohen's <i>d</i>	0.026			0.092			-0.092		
Heterosexual vs. Bisexual									
Heterosexual	-0.022	0.016	1229	-0.065	0.021	1227	0.027	0.030	1233
Bisexual/Another Sexual Identity	-0.044	0.042	382	-0.045	0.055	381	-0.035	0.078	382
Difference-in-difference estimate	-0.022	0.045	1611	0.021	0.059	1608	-0.062	0.084	1615
F statistic (p value)	0.24 (0.624)			0.12 (0.724)			0.55 (0.457)		
Cohen's <i>d</i>	-0.045			0.033			-0.072		
Gay/Lesbian vs. Bisexual									
Gay/Lesbian	-0.009	0.039	409	-0.009	0.049	409	-0.052	0.059	408
Bisexual/Another Sexual Identity	-0.044	0.042	382	-0.045	0.055	381	-0.035	0.078	382
Difference-in-difference estimate	-0.035	0.057	791	-0.036	0.074	790	0.017	0.098	790
F statistic (p value)	0.37 (0.542)			0.24 (0.625)			0.03 (0.860)		
Cohen's <i>d</i>	-0.060			-0.049			0.017		

Source: National Couples' Health and Time Study Waves 1 and 3.

Table 3. Weighted Multi-Group Unconditional Latent Growth Curve Models Fit Statistics.

	Loneliness			Depression			Anxiety		
	M1	M2	M3	M1	M2	M3	M1	M2	M3
AIC	41959.160	26809.464	21639.417	53158.350	33720.729	28789.325	51674.320	31788.705	27599.983
BIC	42021.163	27222.888	22223.504	53220.353	34145.326	29384.330	51736.323	32213.302	28194.988
CFI	0.877	0.756	0.847	0.941	0.791	0.823	0.863	0.814	0.814
TLI	0.935	0.614	0.763	0.969	0.663	0.723	0.928	0.700	0.708
RMSEA	0.057	0.082	0.070	0.050	0.098	0.080	0.062	0.089	0.075
SRMR	0.131	0.098	0.056	0.116	0.108	0.073	0.178	0.101	0.073

Source: National Couples' Health and Time Study Waves 1, 2, and 3. Model 1 estimated the group differences, Model 2 added the vulnerability indicators, and Model 3 added the strengths indicators.

Table 4. Weighted Multi-Group Unconditional Latent Growth Curve Model: Depression.

Parameter	Model 1			Model 2			Model 3		
	Hetero- sexual	Gay/ Lesbian	Bi/ Other	Hetero- sexual	Gay/ Lesbian	Bi/ Other	Hetero- sexual	Gay/ Lesbian	Bi/ Other
Intercept	7.34	8.256	12.405	1.316	2.751	3.628	7.43	4.369	8.602
Slope on	-0.147	0.243	-0.417	3.913	6.039	2.823	5.245	4.62	9.781
Intercept with Slope		-1.63			0.635			-0.223	
Demographic Controls									
Intercept on	Woman			-0.039	-0.477	1.268	0.127	-0.006	1.279
	Other Gender			6.118	-0.617	1.172	2.695	-0.568	0.513
	Non White			-0.458	0.043	-1.25	-0.467	-0.596	-0.636
	Marital Status			0.163	1.132	-0.522	-0.043	0.603	-0.558
	Age			-0.007	-0.018	-0.015	-0.023	-0.032	-0.026
	Children<18			-0.237	-0.638	-0.239	-0.223	-0.44	-0.473
Slope on	Woman			0.345	0.542	-0.055	0.332	-0.071	-0.164
	Other Gender			-1.863	2.964	1.121	-1.992	3.473	1.605
	Non White			0.127	0.806	0.194	0.326	0.517	-0.208
	Marital Status			-0.3	-1.076	-0.451	-0.25	-0.123	0.027
	Age			-0.022	-0.013	-0.032	-0.021	0.011	-0.025
	Children<18			-0.087	-0.042	0.06	-0.054	0.218	-0.208
Vulnerabilities									
Depression_w1 on	Discrimination_W1			0.839	1.198	1.83	0.757	1.041	1.052
	Stress Overload_W1			0.511	0.563	0.5	0.458	0.582	0.5
	Employment Status_W1			-0.062	0.32	-0.349	0.202	0.162	-0.318
	Income_W1			-0.31	-0.056	0.156	-0.346	-0.159	-0.116
	Education_W1			0.444	1.34	0.114	0.72	1.752	-0.343
Depression_w2 on	Stress Overload_W2			0.432	0.458	0.496	0.37	0.405	0.429
Depression_w3 on	Discrimination_W3			2.394	3.664	4.006	1.954	2.836	2.793
	Employment Status_W3			-0.599	-0.277	-1.519	-0.557	-0.432	-0.831
	Income_W3			0.169	-0.052	0.216	0.126	-0.026	0.142
	Education_W3			0.409	0.628	0.476	0.425	-0.764	0.152
Strengths									
Depression_w1 on	Partner Support_w1						0.194	0.115	-0.059

	Family Support_w1	-0.076	-0.002	-0.395
	Friends support_w1	0.068	0.9	0.003
	Perceived Community Climate_w1	-0.036	-0.15	0.09
Depression_w3 on	Partner Support_w3	-0.046	1.058	0.036
	Family Support_w3	0.041	0.177	-0.127
	Friends support_w3	-0.132	0.245	0
	Perceived Community Climate_w3	0.016	-0.866	-0.695
Family Functioning				
Depression_w1 on	Couple Satisfaction_w1	-0.275	-0.277	0.036
Depression_w2 on	Couple Satisfaction_w2	-0.333	-0.323	-0.345
Depression_w3 on	Couple Satisfaction_w3	-0.413	-0.506	-0.38

Source: National Couples' Health and Time Study Waves 1 through 3. Bolding indicates significance at $p < .05$.

Table 5. Weighted Multi-Group Unconditional Latent Growth Curve Model: Anxiety.

Parameter	Model 1			Model 2			Model 3		
	Hetero- sexual	Gay/ Lesbian	Bi/ Other	Hetero- sexual	Gay/ Lesbian	Bi/ Other	Hetero- sexual	Gay/ Lesbian	Bi/ Other
Intercept	11.369	12.254	14.953	6.332	9.544	3.497	6.861	8.905	3.468
Slope	-0.413	-0.158	-0.414	2.982	4.95	3.186	5.018	3.699	11.906
Intercept with Slope		-0.711			0.152			-0.227	
Demographic Controls									
Intercept on	Woman			0.402	-0.096	1.578	0.492	-0.611	1.225
	Other Gender			4.634	0.413	2.365	2.679	0.22	1.203
	Non White			-0.428	1.221	-0.362	-0.373	-0.106	-0.654
	Marital Status			-0.011	0.068	-0.361	-0.099	0.096	-0.352
	Age			-0.025	-0.065	-0.095	-0.027	-0.055	-0.039
	Children<18			-0.154	-0.314	0.241	-0.163	-0.258	-0.307
Slope on	Woman			0.276	0.572	0.17	0.307	0.404	0.276
	Other Gender			-2.078	1.125	0.482	-2.06	1.415	1.082
	Non White			0.106	0.183	0.213	0.236	0.282	0.386
	Marital Status			-0.078	-0.36	-0.336	-0.081	0.42	0.123
	Age			-0.012	-0.005	0.009	-0.016	0.007	-0.01
	Children<18			-0.074	-0.176	-0.068	-0.046	-0.033	-0.359
Vulnerabilities									
Anxiety_w1 on	Discrimination_W1			0.397	0.95	0.705	0.471	0.869	0.522
	Stress Overload_W1			0.446	0.433	0.48	0.434	0.445	0.533
	Employment Status_W1			0.346	0.911	1.136	0.377	0.808	0.843
	Income_W1			-0.022	-0.128	0.721	0.021	-0.335	0.453
	Education_W1			0.361	-0.879	-0.864	0.52	-0.1	-0.98
Anxiety_w2 on	Stress Overload_W2			0.375	0.361	0.436	0.362	0.332	0.42
Anxiety_w3 on	Discrimination_W3			1.463	3.125	2.784	1.181	2.878	1.743
	Employment Status_W3			-0.082	-0.351	-0.832	0.004	-0.404	-0.595
	Income_W3			0.163	0.039	0.196	0.161	0.137	0.124
	Education_W3			0.17	-0.003	0.276	0.135	-1.231	-0.01
Strengths									
Anxiety_w1 on	Partner Support_w1						0.277	0.071	-0.045
	Family Support_w1						-0.187	-0.058	0.21
	Friends support_w1						0.186	0.25	0.191

	Perceived Community Climate_w1	-0.026	0.443	-0.182
Anxiety_w3 on	Partner Support_w3	0.173	1.11	-0.02
	Family Support_w3	0.019	-0.103	0.26
	Friends support_w3	-0.15	0.015	-0.284
	Perceived Community Climate_w3	0.012	-0.53	-0.634
Family Functioning				
Anxiety_w1 on	Couple Satisfaction_w1	-0.069	-0.057	0.18
Anxiety_w2 on	Couple Satisfaction_w2	-0.121	-0.141	-0.062
Anxiety_w3 on	Couple Satisfaction_w3	-0.25	-0.319	-0.12

Source: National Couples' Health and Time Study Waves 1 through 3. Bolding indicates significance at $p < .05$.

Table 6. Weighted Multi-Group Unconditional Latent Growth Curve Model: Loneliness.

Parameter	Model 1			Model 2			Model 3		
	Hetero- sexual	Gay/ Lesbian	Bi/ Other	Hetero- sexual	Gay/ Lesbian	Bi/ Other	Hetero- sexual	Gay/ Lesbian	Bi/ Other
Mean Intercept	5.888	6.165	7.517						
Mean Slope	-0.035	-0.052	-0.177						
Intercept with Slope		-0.052			0.128			-0.114	
Demographic Controls									
Intercept on	Woman			0.25	-0.111	0.123	0.298	0.257	0.571
	Other Gender			3.301	-2.683	-0.49	1.123	-1.572	-0.166
	Non White			-0.1	0.253	-0.264	-0.084	-0.677	-0.717
	Marital Status			0.216	0.314	-0.15	0.077	0.262	-0.105
	Age			-0.003	0.003	0	-0.024	-0.006	0
	Children<18			-0.094	-0.42	-0.214	-0.073	-0.137	-0.204
Slope on	Woman			-0.115	-0.079	-0.234	-0.169	-0.288	-0.197
	Other Gender			-1.623	1.295	0.436	-0.196	1.36	0.725
	Non White			0.124	0.386	0.094	0.163	0.434	0.351
	Marital Status			-0.129	-0.654	0.261	-0.075	-0.324	0.551
	Age			-0.007	-0.015	0	0.004	-0.005	0
	Children<18			-0.045	-0.057	-0.091	-0.016	0.011	-0.363
Vulnerabilities									
Loneliness_w1 on	Discrimination_W1			0.467	0.865	0.842	0.35	0.658	0.425
	Stress Overload_W1			0.158	0.171	0.164	0.126	0.164	0.158
	Employment Status_W1			0.059	-0.092	0.125	0.139	-0.206	0.191
	Income_W1			-0.171	-0.457	-0.152	-0.178	-0.66	-0.195
	Education_W1			0.239	0.185	0.601	0.273	0.663	1.509
Loneliness_w2 on	Stress Overload_W2			0.13	0.194	0.151	0.076	0.133	0.087
Loneliness_w3 on	Discrimination_W3			0.997	1.312	1.657	0.621	1.019	0.969
	Employment Status_W3			-0.09	0.081	-0.938	-0.19	-0.163	-0.568
	Income_W3			0.003	-0.127	0.173	-0.042	-0.136	0.316
	Education_W3			0.152	1.109	-0.301	0.177	0.641	-0.436
Strengths									
Loneliness_w1 on	Partner Support_w1						-0.008	-0.343	0.132
	Family Support_w1						0.071	0.141	-0.529
	Friends support_w1						-0.121	0.154	-0.259

	Perceived Community Climate_w1		-0.195	-0.344	-0.345
Loneliness_w3 on	Partner Support_w3		0.04	0.091	0.075
	Family Support_w3		-0.098	-0.004	-0.128
	Friends support_w3		-0.001	-0.185	-0.265
	Perceived Community Climate_w3		0.004	0.043	-0.224
Family Functioning					
Loneliness_w1 on	Couple Satisfaction_w1		-0.266	-0.252	-0.19
Loneliness_w2 on	Couple Satisfaction_w2		-0.299	-0.328	-0.292
Loneliness_w3 on	Couple Satisfaction_w3		-0.3	-0.336	-0.289

Source: National Couples' Health and Time Study Waves 1 through 3. Bolding indicates significance at $p < .05$.

Mental Health Trajectories: W1 to W3

Individual respondents (translucent) with weighted mean (bold)

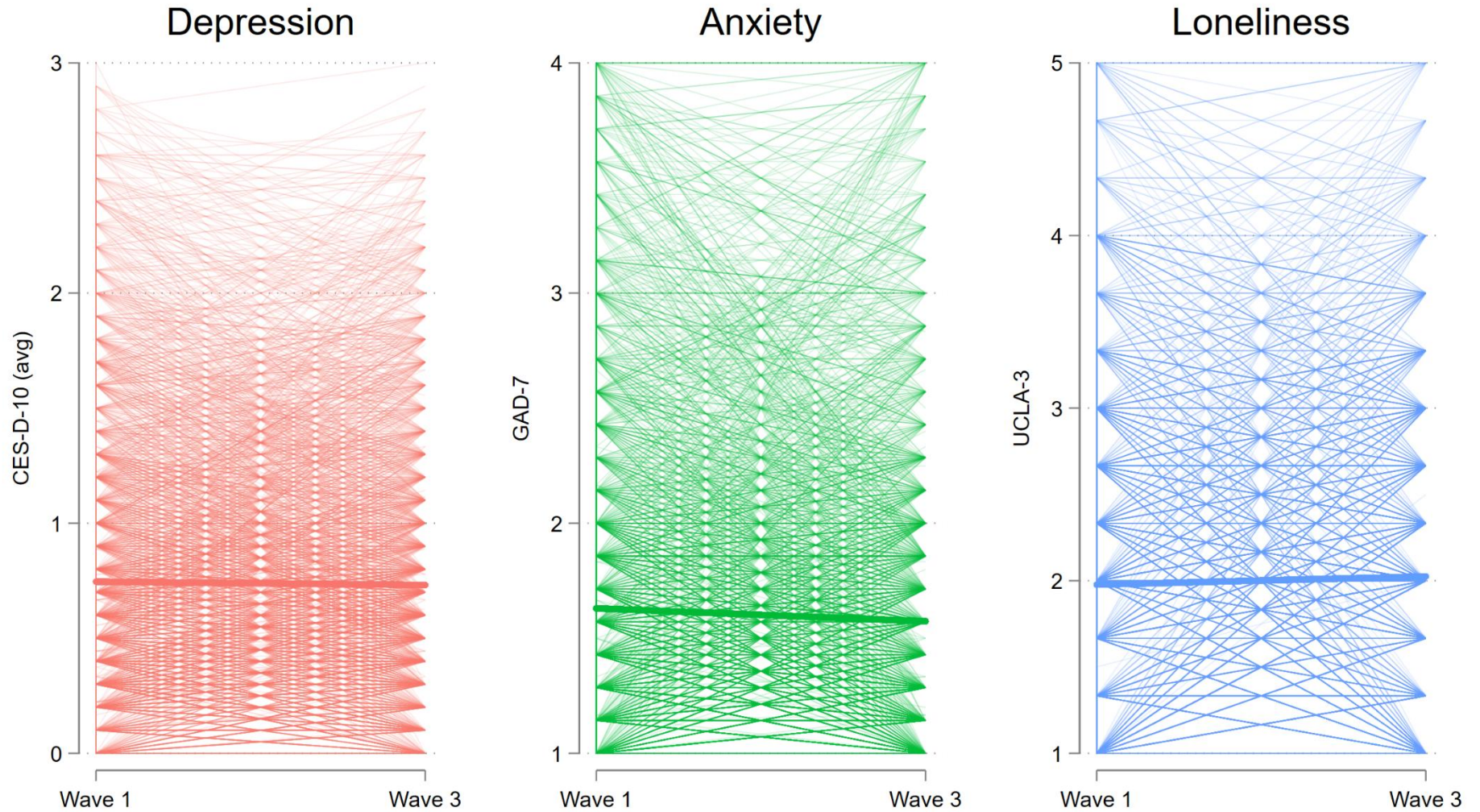


Figure 1. Spaghetti Plots of Change in Depression, Anxiety, and Loneliness, Waves 1 to 3.

Mental Health W1 to W3 by Sexual Identity

Weighted estimates, stable-relationship sample

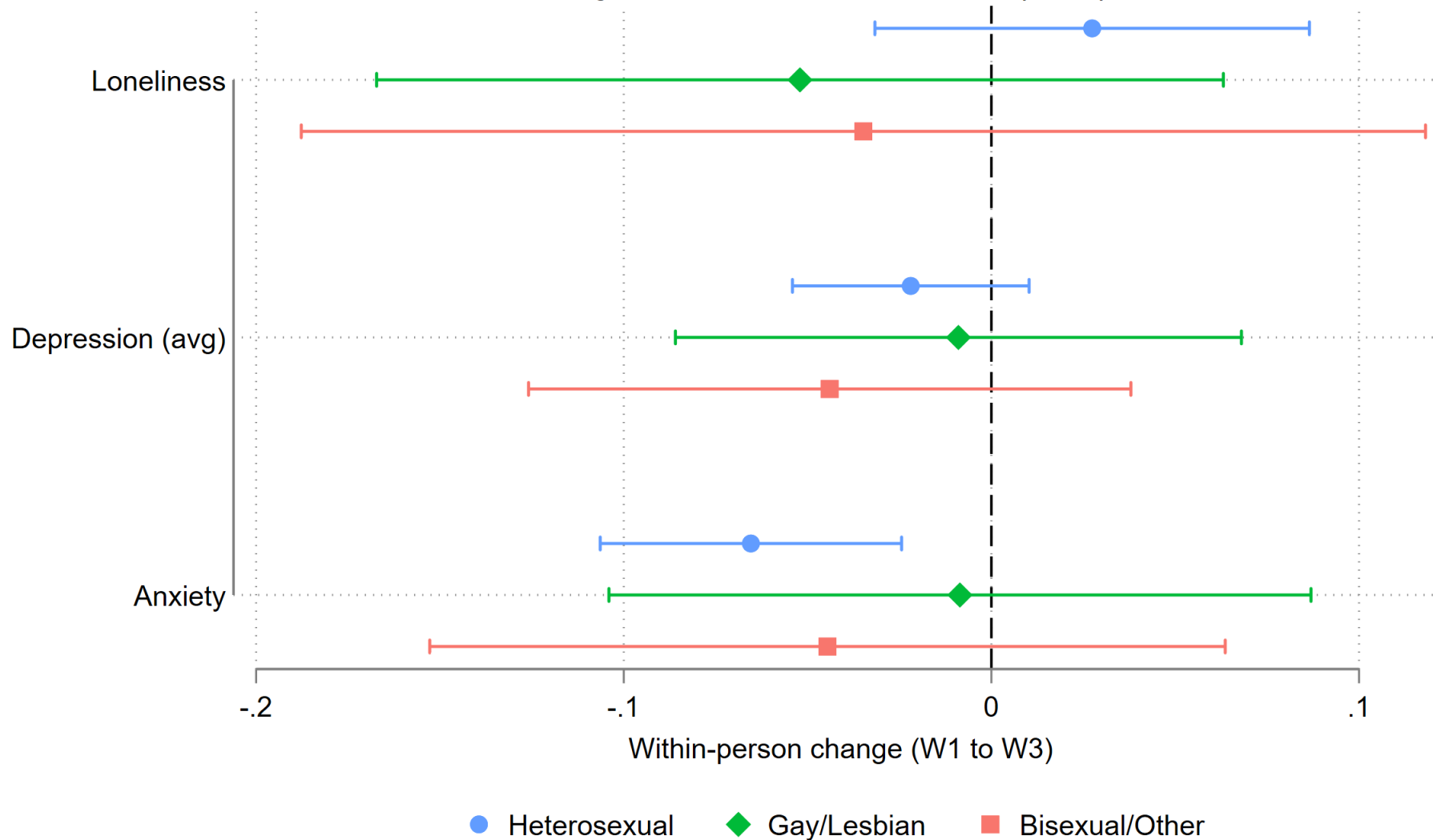


Figure 2. Weighted Estimates of Within-Person Change in Mental Health by Sexual Identity – Stable Relationships Only.

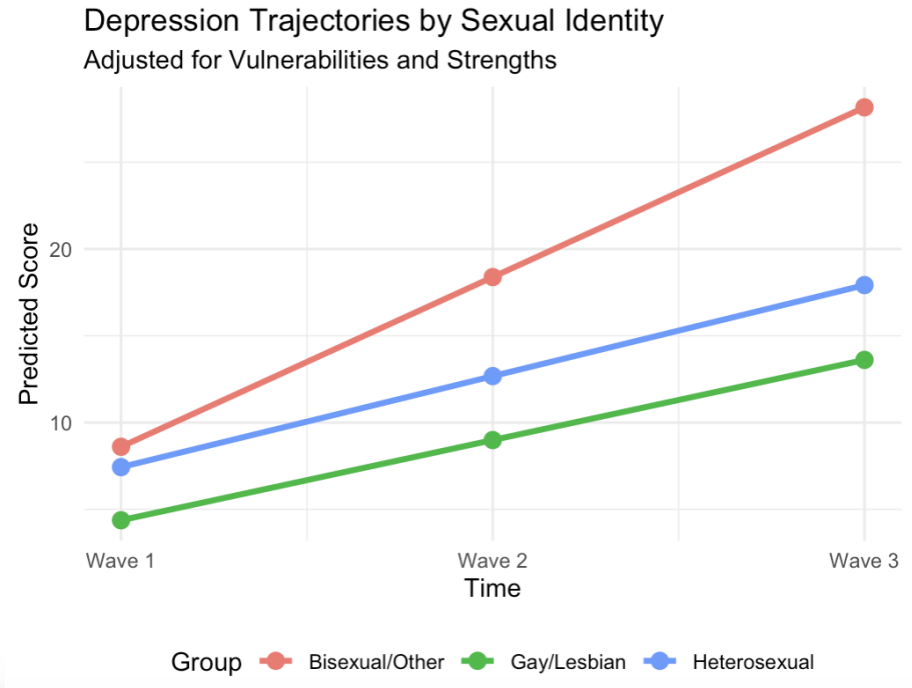
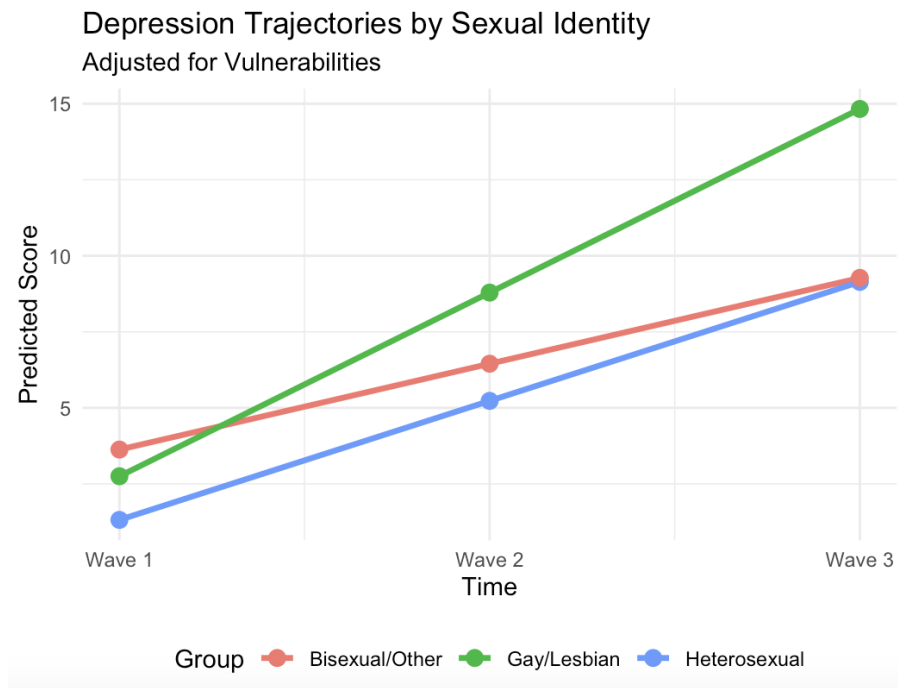


Figure 3. Weighted Depression Trajectories by Sexual Identity Adjusted for Vulnerability and Strengths: Full Sample.

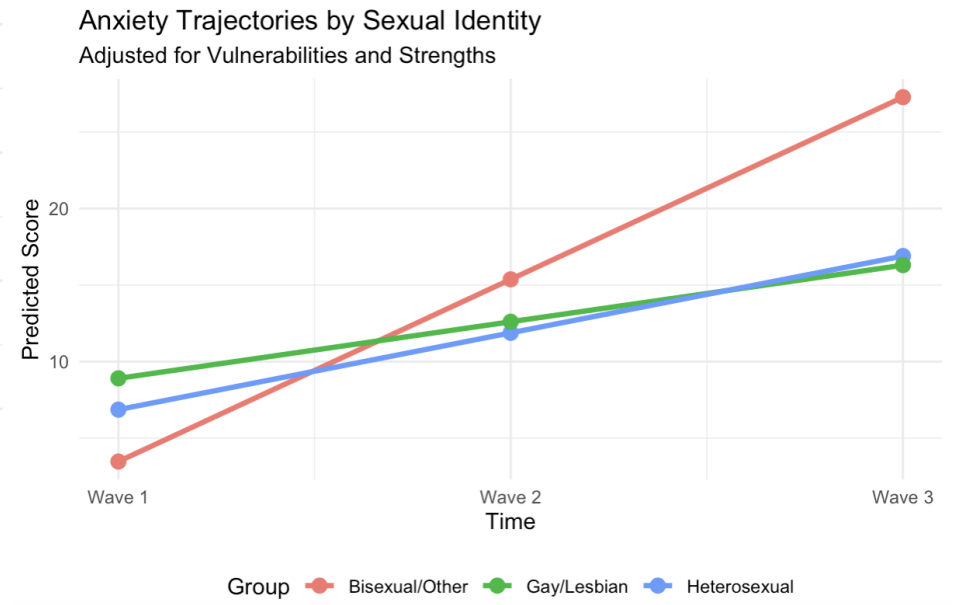
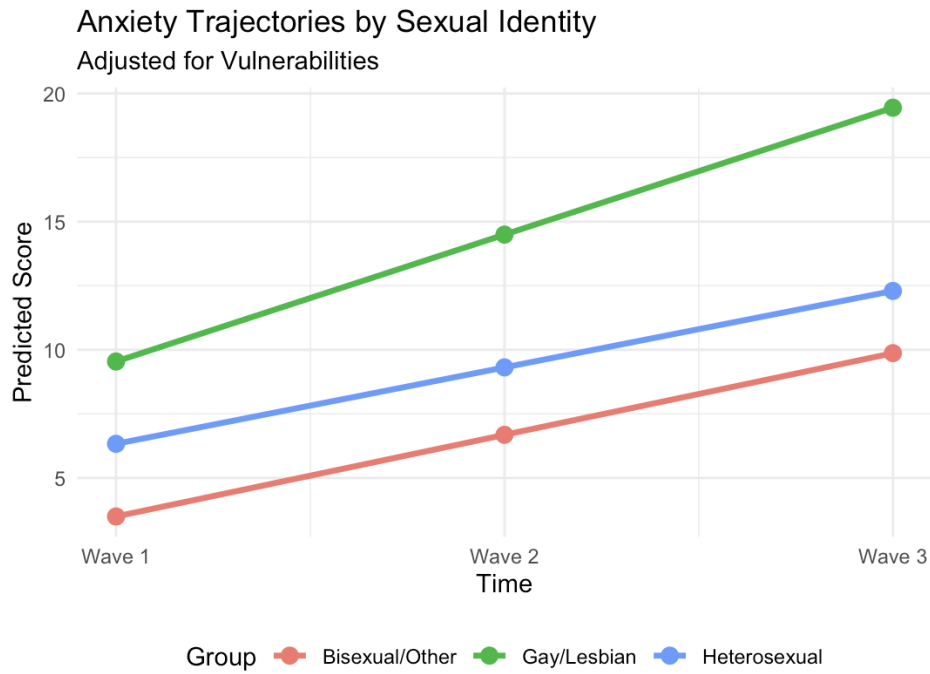


Figure 4. Weighted Anxiety Trajectories by Sexual Identity Adjusted for Vulnerability and Strengths: Full Sample.

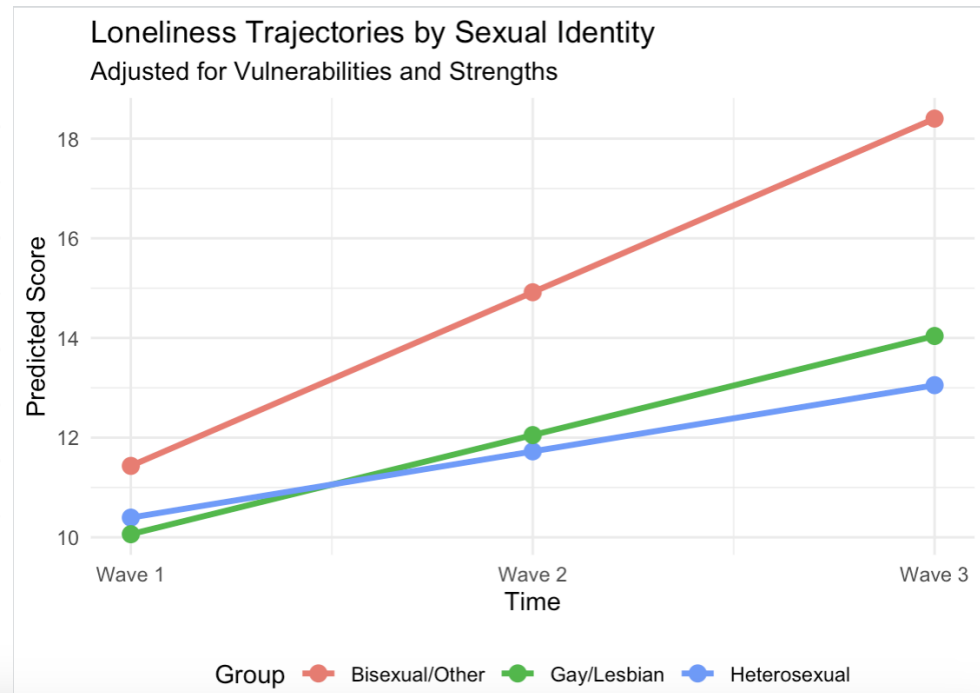
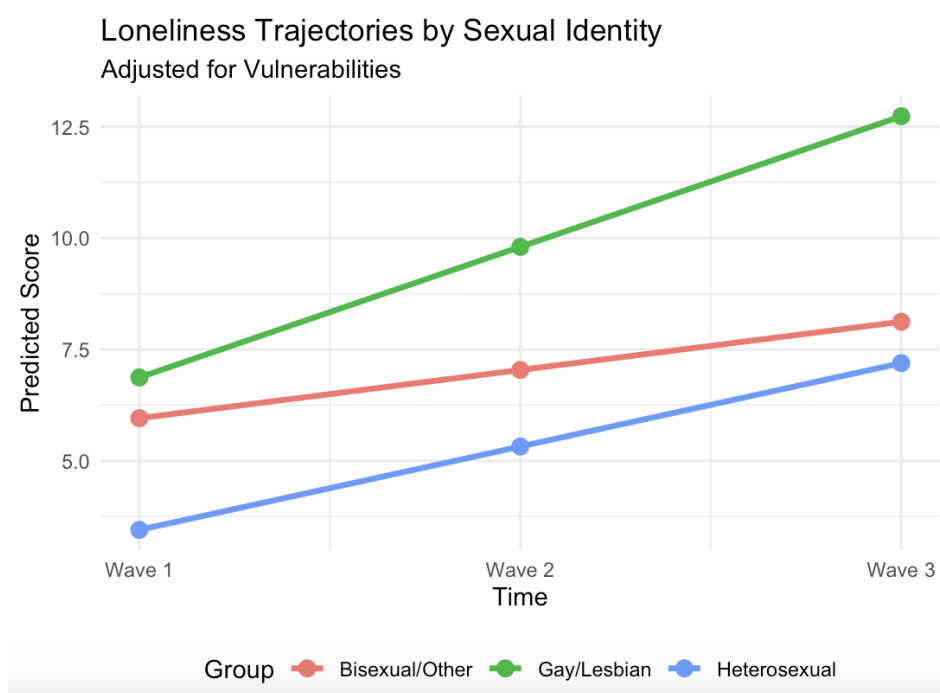


Figure 5. Weighted Loneliness Trajectories by Sexual Identity Adjusted for Vulnerability and Strengths: Full Sample.