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COVID-19 Stress and Sexual Identities

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Abstract

The coronavirus disease 2019 pandemic has disrupted lives and resulted in high levels of stress. Although the evidence at the societal level is clear, there have been no population-based studies of pandemic-based stress focusing on individuals who identify as sexual minorities. Drawing on representative data collected during the pandemic, National Couples' Health and Time Study, the authors find that partnered (cohabiting or married) individuals who identified as sexual minorities experienced higher levels of stress than individuals who identified as heterosexual. However, variation exists observed among sexual minority adults. Although economic resources, discrimination, social and community support, and health conditions are tied to reported stress levels, they do not explain differentials according to sexual identity. These results provide evidence that sexual minority adults faced greater stress during the pandemic and the importance of recognizing that sexual minorities are not a monolithic group with varying stress responses to the pandemic.

Keywords

COVID-19; pandemic; stress; sexual minority; gay or lesbian identity

Although high stress levels associated with the coronavirus disease 2019 (COVID-19) pandemic are well documented in polls with large population samples (Park et al. 2020; Taylor et al. 2020; Witters and Harter 2020), there are no population-based samples of these experiences among individuals identifying as sexual minorities. There have been speculations that sexual minority populations are particularly vulnerable to stress during the pandemic (Banerjee and Nair 2020; Cahill et al. 2020; Fish et al. 2021; Phillips et al. 2020), and research based on convenience samples supports this supposition (Moore et al. 2021; Peterson, Vaughan, and Carver 2020). Relatively little is known about the health of individuals according to sexual or gender identity, as only three states collected sexual orientation and gender identity as part of their COVID-19 surveillance health reporting. A new data source, the National Couples' Health and Time Study (NCHAT), provides the

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first opportunity to assess COVID-19 experiences and stress for a population-representative sample of individuals who identify as sexual minorities in same-gender and different-gender couples. In this article we draw on the minority stress model and examine the stress levels experienced by sexual minority adults during the pandemic. We include key measures of potential mechanisms that may explain variation in stress, including discrimination and social support. Our analysis of stress builds on a growing literature and fills an important gap in research on the public health implications of the pandemic for individuals with sexual minority identities.

Background

The empirical literature on stress related to COVID-19 has shown that nearly 40 percent of individuals are experiencing some distress, and another 16 percent report high distress with needs for mental health services suggesting high emotional costs (Taylor et al. 2020). Similarly, elevated levels of daily worry and stress during the pandemic are evident on the basis of national polls that were conducted prior to and during the pandemic (Witters and Hart 2020). Several conceptualizations of COVID-19 stress have been tested and often include fear of infection, worry about socioeconomic costs, coping, health behaviors, xenophobia, political beliefs, and traumatic stress symptoms (Ahorsu et al. 2020; Lee 2020; Mertons et al. 2020; Taylor et al. 2020). On the basis of research in Canada and the United States during COVID-19, Taylor et al. (2020) reported greater stress among women than men and among racial minorities than whites. To date there are no studies using population-based samples of COVID-19-related stress among sexual minority populations.

A large body of research has provided empirical evidence that individuals with sexual minority identities experience elevated stress and negative mental health, in part because of higher levels of discrimination and microaggressions (NASEM 2020). These empirical findings are consistent with the minority stress model (Meyer 2003), which specifies the multiple ways sexual minority adults confront environments that are not supportive. During the pandemic these disparities in stress and well-being have been hypothesized to be greater than prior to the pandemic. Evidence from smaller convenience samples ($n = 170$) conducted in April and May 2020 indicates higher reports of peritraumatic stress among individuals identifying as sexual minority than heterosexual (Peterson et al. 2020). An Instagram-based sampling in April and July 2020 showed that sexual minority college students reported higher perceived stress than their heterosexual counterparts (Hoyt et al. 2021). Evidence based on an opt-in online sample conducted in April and May 2020 with a substantial oversample of sexual minorities ($n = 541$) reveals higher stress during the pandemic and reported greater increases in stress for bisexual individuals compared with heterosexual respondents (Fish et al. 2021). In a separate survey conducted in April 2020 of a nonprobability sample that included a small number of sexual minorities ($n = 120$) at the bivariate level, there were higher reports of monitoring symptoms among nonheterosexual respondents (Park et al. 2020). A manifestation of stress is poor mental health, and higher scores on depression and anxiety symptoms as well as behavioral disengagement have been reported among respondents with sexual minority identities in convenience or online opt-in samples (Fish et al. 2021; Moore et al. 2021; Park et al. 2020), as well as nationally representative data from the U.S. Census Bureau Household Pulse Survey (Anderson et al.

2021) Given these higher levels of stress in these varying data sources, we hypothesized that individuals with sexual minority identities would experience greater COVID-19-related specific stress than their heterosexual counterparts.

There are several mechanisms that may explain the differential in stress experienced by sexual minority and heterosexual respondents. First, there is evidence of higher levels of discrimination and microaggressions, particularly in the health care setting, that are associated with poorer health outcomes for sexual minorities (e.g., Bostwick et al. 2014; Mays and Cochran 2001; Nadal 2018; Sue 2010). Structural stigma indicators at the community level are associated with lower levels of well-being among sexual minority populations (e.g., Hatzenbuehler et al. 2010; Raifman et al. 2018). During the pandemic, these experiences may be heightened as the need (or even potential need) to interact with and access health care systems has grown. Furthermore, the huge strains on the health care system may result in less supportive environments for all marginalized sexual and racial/ethnic individuals. We include measures tapping both respondents' experiences with microaggressions and perceptions of discrimination in the health care system.

Second, individuals with sexual minority identities may not benefit from family and community support in the same ways that heterosexual-identifying individuals benefit (Kurdek 2004; Tate and Patterson 2019). Social support and connections are associated with higher levels of health and well-being among adults with sexual minority identities (Umberson and Thomeer 2020), and the pandemic may have interrupted these connections to sexual minorities in particular. We include measures that capture whether respondents live in communities that are supportive of gays, lesbians, and bisexuals as well as the level of emotional support from family and friends. Third, individuals with sexual minority identities face higher levels of comorbidities that may heighten their risk for COVID-19, such as obesity, diabetes, asthma, smoking, and hypertension (e.g., Beach, Elasy, and Gonzales 2018; Caceres et al. 2017; Conron, Mimiaga, and Landers 2010; Drope et al. 2018; Everett and Mollborn 2013; Gonzales and Henning-Smith 2017). We draw on indicators measuring whether respondents had been told by a physician or health care provider that they currently had specific physical health conditions.

Fourth, employment as essential workers, and concerns about loss of insurance because of unemployment may place individuals with sexual minority identities at greater risk for stress related to COVID-19. Earnings are lower and poverty is higher for bisexual men and women than heterosexuals and gay or lesbian men and women (Badgett 2018; Mize 2016). On the basis of Household Pulse Survey data collected during the pandemic, LGBT adults and gender minorities experienced more food and housing insecurity as well as lost employment income than non-LGBT adults (Carpenter, Lee, and Nettuno 2022; File and Marshall 2021). Furthermore, stigma in the workforce has implications for earnings and employment stability among sexual minorities (Baumle, Badgett, and Boutcher 2019; Mahowald, Gruberg, and Halpin 2020; NPR, Robert Wood Johnson Foundation, and Harvard T. H. Chan School of Public Health 2017). Our analyses include measures of household income that may buffer or exacerbate the impact of the pandemic.

The Present Investigation

Our objective is to assess COVID-19-specific stress experienced during the pandemic across several domains, and we hypothesize that individuals with sexual minority identities experienced higher levels of stress. We consider variation among individuals with sexual minority identities by distinguishing gays and lesbians, bisexuals, and individuals who identify as multiple identities or whose identities were not listed. We build on a growing body of research supporting this hypothesis using nonprobability samples (Fish et al. 2021; Park et al. 2020). A second objective is to determine whether differentials in stress are explained in part by economic resources (household income), discrimination (micro-aggressions or health discrimination), social support (community and social ties), and physical health. Although researchers have called for the examination of why differentials in COVID-19 may exist, to our knowledge no other data collected during the pandemic include measures that capture these important processes. This research will help address critical gaps in our knowledge about how individuals with sexual minority identities are navigating the stress associated with the pandemic and provide important insights into ways to potentially alleviate these differentials.

Data

NCHAT entered the field on September 1, 2020, and was completed by April 30, 2021. It is a nationally representative sample of 3,642 respondents 20 to 60 years old who are married or cohabiting, with oversamples of individuals with racial and ethnic minority and sexual minority identities. A unique feature of the survey is that the questionnaire is inclusive, with a broad set of sexual and gender identities, allowing respondents to report multiple identities, and it avoids use of heteronormative terms and items. The respondents were members of the Gallup Panel, a probability-based nationally representative panel of more than 65,000 individuals. Respondents were invited to participate in the Web-based survey, and once completed their spouses or partners are invited to participate in an identical survey. Surveys were completed in Spanish and English. The survey instrument took 40 minutes on average to complete.

The analytic sample was limited to 3,612 respondents who provided valid responses to the dependent indicators. There were low levels of missing data on many of the remaining indicators, and any further missing data were replaced with mean values if less than 5 percent were missing.

Measures

Sexual Identity

Sexual identity was based on a series of questions and not a single item on the basis of the gender composition of the couple or one question about sexual orientation. Importantly, bisexuals are a critical and large share of sexual minorities and represent the majority of women who are sexual minorities (Williams Institute 2019). Furthermore, we include respondents who do not identify with the more traditional categories of heterosexual, gay or lesbian, or bisexual. The question used for these analyses appeared in the middle of

the survey and was “What do you consider yourself to be? Select all that apply” with 11 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 categories: exclusively heterosexual; exclusively gay/lesbian; exclusively bisexual or bisexual along with queer, omnisexual, or pansexual; and “another or multiple identities.” There were not enough individuals in any single response category outside of the initial three to generate fully powered groups for those identities. Thus, we relied on an overarching, and admittedly not descriptive, label for those with the remaining identities, and those who chose more than one identity, as “another or multiple identities.” In an effort to further refine this category we did attempt to distinguish those with “another” label from those with multiple identities and did not find statistically significant differences. We do not believe this is a meaningful distinction and argue for more in-depth analysis of the meanings of the full range of terms used to identify sexual identities.

Dependent Variables

The stress items included three general indicators (overall stress, self-reported increase in stress, life disruption) and three domain-specific (health, relationship, and economic) stress measures. The overall stress measure was based on the question “In the past week, how stressed have you been?” with responses ranging from 1 (“not at all stressed”) to 5 (“very stressed”). Change in stress was based on the question “In the past week, have you been less stressed, more stressed or had about the same stress as before the coronavirus pandemic?” A subjective indicator about COVID-19’s disruption of life was based on the question “To what extent has your life been affected or disrupted by the coronavirus situation?” with responses ranging on a four-point scale from “not at all” to “a great deal.”

The domain-specific indicators were measured as follows. COVID-19 health stress is based on the index of three questions leading with “How stressed are you about ... getting coronavirus, my spouse or partners getting coronavirus, my parenting, siblings or other family members getting coronavirus?” The response categories range from 1 (“not at all stressed”) to 5 (“very stressed”). The α value was .88. COVID-19 Relationship stress is based on responses to three questions that tap level of agreement about the pandemic and their relationship: “will be stronger” (reverse coded), “making me question my relationship,” and “probably break up, separate or divorce.” Responses ranged from “strongly agree” to “strongly disagree” on a five-point scale. The α value was .71. The economic stress indicator was based on three items: “how stressed are you about ... money and finances, my job, getting food and supplies.” The response categories ranged from 1 (“not at all stressed”) to 5 (“very stressed”). The α value was .72.

Independent Variables

The distribution of the independent variables is presented in Table A1 in the Appendix by sexual identity. The survey included a broad range of questions that were used to account for differentials in stress by sexual minority status. Economic circumstances were based on income. Household income was top coded at the 95 percent level (individuals who scored

above 95 percent were coded to the 95 percent level) and was logged because of the skewed nature of the variable.

To examine sources of discrimination, we included microaggressions and health care discrimination. Respondents were asked, “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.” The responses ranged from “never” to “very often” and the α value was .86. A second measure captured health discrimination with five questions about the respondent’s level of agreement with items including “When seeking healthcare ... I worry about being negatively judged, I worry that diagnoses of me/my health may be negatively because of who I am”; the α value was .81.

Supportive climates included a measure of sexual minority–specific community support and social support from family and friends. Respondents were asked, “Is the city or area where you live a good place to live for ... People who are gay, lesbian, or bisexual?” with responses ranging from 1 (“not a good place”) to 5 (“good place”). Support from friends and family was based on two questions, “How much do you rely on each of the following people 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”). These items did not scale well together into a singular indicator ($\alpha < .50$).

Current physical health condition was based on affirmative responses to a series of questions about whether respondents had “been told by a doctor of health professional” that they currently had 1 of 22 health conditions, including liver disease, cancer, and HIV infection.

We also included key sociodemographic indicators, including gender identity, age, race/ethnicity, marital status, and number of children. Gender identity was a three-category measure: man (man or transman), woman (woman or trans-woman), or nonbinary. There were too few transgender respondents to analyze them separately, and we coded them according to their gender identity. Age was coded as a continuous indicator. Marital status was a two-category measure indicating cohabiting or married. Respondents were asked detailed questions about their race and ethnicity, and the responses were coded into categories that distinguished “Latinx/Hispanic” identities (referenced here as “Latinx”: “non-Latinx white,” “non-Latinx Black,” “non-Latinx Asian,” “Latinx,” “non-Latinx multirace,” and “another racial identity”). The presence of children younger than 18 years was a measure of whether there were no children, one child, or two or more children younger than 18 years living in the home. Educational attainment was divided into three categories: high school degree or less, some college or post–high school education, and college degree. The final indicator was month of interview, spanning from September 2020 through April 2021, and was included as a dummy variable but was not presented in the models.

The analytic strategy depended on the nature of the dependent variable. Ordinary least squares regression models were estimated for all dependent variables, except increase in stress. Logistic regression was used to estimate models predicting the odds of

experiencing an increase in stress. The first model we present included sexual identity and sociodemographic indicators (with month of interview not shown), and the second model included the full roster of indicators. Initially heterosexuals were the reference category, and then we shifted the reference category to test for differences among sexual minorities with gay or lesbian identity as the reference group. The analyses were weighted using weights developed by Gallup.

Results

Table 1 presents the mean values for the stress indicators under investigation and includes the following: (1) overall stress, (2) stress increase in response to COVID-19, (3) COVID-19 life disruption, (4) COVID-19 health stress, (5) COVID-19 relationship stress, and (6) economic stress. Boldface text indicates that responses were significantly different from those of heterosexuals. The levels of increase in stress, life disruption, and stress related to health were significantly greater for members of each sexual minority category, in contrast to respondents identifying as heterosexual. Respondents who identified as gay or lesbian fared as well as those who identified as heterosexual on measures of overall stress, relationship stress, and economic stress. Variation among individuals with sexual minority identities was evident, and italic text in Table 1 indicates significant differences among respondents with sexual minority identities. The levels of overall stress and economic stress were lower among respondents who identified as gay or lesbian than respondents with bisexual and other or multiple sexual identities. Respondents with bisexual identities reported higher levels of pandemic-driven disruption in their lives than those with gay or lesbian identities. Respondents who identified as other or multiple identities indicated greater health stress and growth in stress than respondents with bisexual or gay or lesbian identities. Thus, on the basis of these mean comparisons, there was variation among sexual minorities in their levels of stress during the pandemic.

Table 2 focuses on the general indicators of stress and includes sociodemographic indicators (model 1) and pandemic-based mechanistic measures that may explain elevated stress levels among respondents with sexually diverse identities (model 2). Respondents with gay and lesbian identities shared similar levels of overall stress as their heterosexual-identifying counterparts. To indicate differentials among individuals with sexual minority identities, we used italic text, treating individuals with gay or lesbian identities as the contrast group. Respondents with bisexual and another or multiple identities reported higher levels of overall stress than respondents with heterosexual identities and gay or lesbian identities (italic text). Respondents with other or multiple identities reported the greatest increases in stress in contrast to respondents with heterosexual identities and those with gay or lesbian identities (italic text). Finally, respondents with heterosexual identities less often reported that the pandemic disrupted their life than respondents with sexually diverse identities. There were no significant differences among sexual diverse identified respondents in their beliefs about the pandemic disruptions. The pattern of results related to sexual identity persisted with the inclusion of the mechanistic indicators.

With regard to the sociodemographic measures, women reported higher levels of stress than men. Older respondents reported lower overall levels of stress but greater increases

in stress during the pandemic. Married respondents indicated that the pandemic was less disruptive to their lives than cohabitators. There was some sensitivity to the association of race and ethnic identity and stress to the inclusion of covariates. Model 2 shows that respondents with non-Latinx Black identities indicated lower levels of stress and less often reported increases in stress. This relationship did not appear in model 1, and the suppression was due to the inclusion of the discrimination indicators (results not shown). Non-Latinx Asian respondents reported greater increases in stress than non-Latinx white respondents. Non-Latinx multiracial respondents indicated that the pandemic disrupted their lives more than non-Latinx white respondents. Respondents with more children under 18 indicated higher levels of stress and life disruption. By education, the respondents who experienced the highest levels of stress, increases in stress, and COVID-19 disruptions were college graduates.

The potential mechanisms that were hypothesized to explain some of the differentials in stress according to sexual identity were associated with stress levels as well. Household income was associated with greater disruptions to life. Respondents who experienced more microaggressions and higher levels of health discrimination reported higher levels of stress, greater odds of increases in stress, and higher levels of COVID-19 disruptions. Friend support was associated with higher levels of overall stress and pandemic-based disruptions, which may mean that those who had more stress turned to friend support. Similarly, family support was associated with higher levels of COVID-19 disruptions. Respondents who lived in communities that they perceived supported sexual minorities experienced lower stress and lower odds of increases in stress. Finally, respondents with health provider–confirmed health issues reported greater stress and pandemic-based disruptions.

Table 3 includes the multivariable models estimating domain-specific stress (health, relationship, and economic). Sexual minority–identifying respondents reported higher levels of health stress than their heterosexual counterparts even after accounting for the full array of indicators. Respondents with other or multiple sexual identities reported greater levels of health stress than respondents with gay or lesbian identities (italic text). With regard to relationship stress, it appeared that bisexual identifying respondents experienced more relationship stress than heterosexual or gay- or lesbian-identifying respondents. The economic stress experienced by heterosexual-, gay-, and lesbian-identifying respondents was similar. Respondents with bisexual sexual identities reported higher levels of economic stress than those with heterosexual or gay or lesbian identities. Respondents with another or multiple sexual identities experienced higher levels of economic stress than respondents with heterosexual or gay or lesbian identities, and this association was explained with the inclusion of the mechanistic indicators, specifically the discrimination measures (results not shown).

Women reported higher levels of health and economic stress. Older respondents reported higher levels of relationship stress and lower levels of economic stress. Married respondents experienced lower levels of health, relationship, and economic stress. In model 1, all racial and ethnic minority groups experienced higher health stress, and the differentials between respondents identifying as non-Latinx Black and those identifying as non-Latinx white were explained with the inclusion of the health discrimination or microaggression

measure (results not shown). Similarly, the lower levels of economic stress experienced by respondents identifying as non-Latinx Black in model 2 was due to the inclusion of microaggressions (results not shown). Overall, accounting for discrimination was a critical factor in the understanding the association between race/ethnicity and stress. Greater numbers of resident children were associated with lower health stress (perhaps because of age) and higher levels of relationship and economic stress. There was an education gradient in terms of health stress with more educated respondents indicating greater stress.

Turning to the potential mechanisms that may be important factors in stress experiences, higher household income was associated with lower levels of health and economic stress. Discrimination, measured by microaggressions and health discrimination, was associated with greater health, relationship and economic stress. Respondents with greater friend support had higher levels of relationship stress and family support was associated with higher levels of health and lower levels of relationship stress. Those who lived in more supportive climates for people who were gay, lesbian, or bisexual reported lower health and economic stress. Respondents who had health provider–diagnosed conditions experienced more health and economic stress.

Discussion

The pandemic has put health and stress disparities in stark relief, but groups often ignored from these conversations are individuals with diverse sexual and gender identities. Our findings indicated that individuals who identified as sexual minorities experienced higher levels of stress than individuals who identified as heterosexual. These differentials were not just a continuing pattern of heightened stress among individuals who identified as sexual minorities but individuals who were sexual minorities themselves reported that their stress increased in response to the pandemic. Indeed, about half of respondents who identified as sexual minorities reported that their stress increased during the pandemic, in contrast to 30 percent of respondents who were heterosexual. Importantly, individuals who are sexual minorities experience stress differently and are not a monolithic group. This is not a new conclusion (NASEM 2020), but one that requires data collections that include detailed and nuanced measures of sexual identities. Conclusions about sexual minorities and their well-being often fail to differentiate gay, lesbian, and bisexual respondents. Furthermore, we identify an important category that is often excluded from prior studies, individuals who have multiple sexual identities or individuals who have identities that do not fit within the “LGB” framework. Younger generations more often have identities that fall outside the traditional LGB grouping (Gates 2017). Admittedly, this not a clearly delineated category of individuals, and it requires more attention. Our efforts to distinguish multiple from “another” category did not reveal significant differences, but it is still important to delve deeper into the meanings of all sexual identities. We find that respondents who identify as bisexual or other or multiple identities experience the highest levels of stress, even surpassing stress experienced by gays and lesbians. This is consistent with empirical results focusing on physical (Bostwick and Dodge 2019) and mental health (Salway et al. 2019) and resonates with research focusing on individuals who identify as bisexual another sexual identities as “invisible” minorities (Arbeit et al. 2016; Bostwick and Dodge 2019). There is some evidence that bisexual individuals experience minority stress (Meyer 2003) from

both individuals who are heterosexual and those who are lesbian or gay, which is rooted in heterosexism, which values intimate relationships and attraction between cis men and cis women (Balsam, Beadnell, and Molina, 2013), and monosexism, which values those who are attracted to one gender and includes heterosexual individuals as well as gay and lesbian persons (Roberts, Horne, and Hoyt 2015). Individuals with other or multiple sexual identities share some of the experiences of bisexual individuals and deal with both hetero- and monosexism (Feinstein et al. 2020).

Although not the focus of the study, gender identity was related to COVID-19 stress. Across all the outcomes considered in the article, individuals who identified as women reported higher levels of stress. Respondents who did not identify as man or woman experienced marginally higher levels of overall stress in the initial model and higher levels of economic stress with the inclusion of the mechanistic indicators. These findings warrant further attention, as few studies fielded during the pandemic have sufficient sample sizes to investigate this question. Of note is the study of Carpenter et al. (2022) using Household Pulse Survey data collected between July and October 2021, which revealed lower employment, higher poverty rates, and greater food insecurity among gender minorities and gender diverse populations.

Our goal was to identify potential mechanisms that could explain differentials in stress, and we drew upon novel measurement in NCHAT. Although many of these indicators, including discrimination and microaggressions, supportive communities and social networks, economic constraints, and health conditions, were associated with stress, they did not fully explain why sexual minorities faced elevated stress. We suspect that it is unrealistic to completely explain differentials in stress that existed even prior to the pandemic. However, these indicators serve as the basis of the minority stress framework and are often suggested to be the drivers of differentials in the health and well-being of sexual minorities. We believe that more through attention to these factors, possibly as moderators, may offer potential pathways through which identifying as a sexual minority influences well-being. For example, individuals with sexual minority identities who experience high levels of everyday microaggressions may experience greater stress than their counterparts who encounter low levels of everyday microaggressions. Additionally, considering how these measures operate together and not as singular factors would provide a fuller portrait of key underlying mechanisms. It may be that other approaches such as a focus on structural cis-heterosexism at the local or state level or in-depth narratives available in qualitative research would be particularly useful in helping elucidate the mechanisms driving differences in COVID-19-related stress among various sexual minority groups and between some groups of sexual minorities and heterosexuals and monosexuals. Furthermore, an intersectional approach is warranted moving forward, as the experiences of sexual identity coexist with other identities, such as racial and ethnic identities. We do find that the indicators of discrimination were particularly salient when assessing racial and ethnic differentials in pandemic stress, so further attention to race and ethnicity among individuals with sexual minority identities is needed.

Although this study makes important contributions to assessments of stress, there are a few limitations. One limitation of our study is the cross-sectional design. Longitudinal

data could provide evidence of whether the differences observed during the pandemic were already present before the pandemic. Evidence from Switzerland indicates that this may be the case for men (Marmet et al. 2021). Future research should leverage longitudinal data and causal methods, when possible, to test these associations further. Our study is also limited to individuals in couples. Single individuals tend to be even more stressed than coupled individuals (Ta et al. 2017). Thus, future research should consider stress among single respondents who identify as sexual minorities as well. We limited our classification of who was not heterosexual to identity. Because of a serious lack of measurement of sexual identity, behavior, and attraction in many population health surveys, some studies use sexual behavior and others use sexual attraction to identify individuals who are sexual minorities. Using the National Survey of Family Growth, Mishel (2019) found that 20 percent of women and 10 percent of men aged 15 to 45 years would be considered sexual minorities if identity, attraction, and sexual behavior were each considered. Future research could consider a broader definition of sexual minority. Finally, we considered specific domains of stress (health, relationship, and economic) but did not explore the conditions under which stress may be elevated. For example, Joyner, Manning, and Prince (2019) found no difference in the qualities of young adults in same-gender and different-gender relationships, but perhaps sexual minorities who had lower relationship quality experienced elevated stress about their relationship. We will delve deeper into domain-specific indicators of stress in future work.

Overall, these data suggest that the pandemic has been particularly stressful for sexual minorities, and no potential mechanisms measured in this study could account for these associations. This does not mean that discrimination, social climate, economic conditions, and support are not important; we just have not yet identified the specific pathways through which they matter. It is time to complicate our theoretical approaches and be more specific about the ways in which sexual identities influence well-being. Furthermore, our data confirm that individuals who do not identify as hetero- or monosexual may be at particular risk for stress. Future research should explore other potential mechanisms underlying these associations, identify the long-term consequences of the pandemic for these vulnerable groups, and examine intersectional associations between sexual and racial/ethnic identity.

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Claire M. Kamp Dush is Professor of Sociology and the co-director of the Development Core at the Minnesota Population Center at the University of Minnesota Twin Cities. She is a family demographer who studies intimate relationships and their intersection with human development, with a particular focus on mental health. She is the lead or co-lead investigator of two large data collection focused on intimate relationships and health – the two wave National Couples' Health and Time Study and the Work and Family Life Study.

Appendix

Table A1.

Distribution of Independent Variables by Sexual Identity.

	Total	Heterosexual	Gay/Lesbian	Bisexual	"Another"/ Multiple
	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)
Gender					
Man	48.88	49.47	60.04	13.63	33.38
Woman	50.03	50.51	39.62	82.99	57.38
"Another"	.003	.0002	.003	3.38	9.25
Age (20–60 years)	43.11 (10.47)	43.43 (10.36)	42.85 (10.59)	35.64 (10.03)	34.68 (9.92)
Marital status					
Cohabiting	19.27	81.93	45.19	45.57	42.37
Married	80.73	18.07	54.81	54.43	57.63
Race/ethnicity					
NH White	56.08	55.64	68.15	66.45	63.16
NH Black	7.47	7.48	5.85	5.57	8.83
NH Asian	6.68	6.78	5.07	2.89	5.27
Hispanic	21.52	21.91	14.53	12.86	13.47
NH multirace	3.42	3.32	2.75	7.25	5.70
"Another"	4.82	4.87	3.64	4.99	3.57
Children					
None (reference)	55.47	54.63	89.74	69.32	66.99
One	18.36	18.71	5.64	14.29	12.14
Two or more	26.17	26.66	4.62	16.39	20.87
Education					
Less than HS or HS	31.20	31.65	29.02	30.19	19.41
Some college	22.05	21.96	21.51	25.53	24.09
College graduate	46.75	46.39	58.46	44.28	56.50
Log HH income (1–13.12)	11.38 (1.54)	11.39 (1.51)	11.55 (1.52)	11.00 (1.75)	10.83 (2.28)
Microaggressions (1–4.6)	1.47 (.51)	1.47 (.51)	1.39 (.46)	1.51 (.57)	1.68 (.58)

	Total	Heterosexual	Gay/Lesbian	Bisexual	“Another”/ Multiple
	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)	% or Mean (SD)
Health discrimination (1–5)	2.24 (.81)	2.21 (.80)	2.28 (.99)	2.71 (.91)	2.86 (.89)
Friend support (1–5)	2.98 (1.17)	2.97 (1.18)	3.20 (1.14)	3.19 (1.28)	3.04 (1.07)
Family support (1–5)	3.43 (1.23)	3.37 (1.22)	2.95 (1.16)	2.98 (1.34)	2.73 (1.31)
Community support (1–5)	3.78 (1.04)	3.79 (1.04)	3.90 (.99)	3.83 (1.00)	3.54 (1.04)
Health condition					
No	49.87	50.26	42.71	38.10	43.08
Yes	50.13	49.74	57.29	61.9	56.92
<i>n</i>	3,612	2,001	732	418	461

Source: National Couples' Health and Time Study.

Note: Weighted percentage or mean and unweighted *n*. HH = household; HS = high school; NH = non-Hispanic.

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Table 1.

Stress Indicators for Sexual Minority and Heterosexual Respondents ($n = 3,612$).

	Overall Stress (1–5)	Increase Stress (0–1)	Disrupt Life (1–4)	Health Stress (1–5)	Relationship Stress (1–5)	Economic Stress (1–5)
Heterosexuals ($n = 2,001$)	2.64	.30	2.94	2.68	1.74	2.32
Sexual minorities						
Gay/lesbian ($n = 732$)	2.78	.37	3.10	3.03	1.79	2.45
Bisexual ($n = 418$)	<i>3.41</i>	.46	<i>3.26</i>	3.28	2.01	<i>3.05</i>
“Another”/multiple ($n = 461$)	<i>3.56</i>	<i>.61</i>	3.23	<i>3.55</i>	2.01	<i>2.97</i>

Source: National Couples' Health and Time Study.

Note: Unweighted n 's are provided, and all analyses are weighted. Boldface text indicates a significant ($p < .05$) difference between heterosexual and sexual minority categories. Italic text indicates significant ($p < .05$) difference among sexual minorities with reference group gay and lesbian identity.

Table 2.

Pandemic Stress Levels for Sexual Minority and Heterosexual Respondents.

	Overall Stress		Increase Stress ^a		COVID-19 Disrupt Life	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Sexual identity						
Heterosexual (reference)						
Gay/lesbian	.09	.05	1.24	1.18	.12*	.11 [†]
Bisexual	.41***	.28**	1.30	1.15	.26***	.22***
“Another”/multiple	.58**	.34**	2.66***	2.15**	.22**	.15 [†]
Sociodemographic						
Gender (man)						
Woman	.35***	.29***	1.57***	1.42**	.15***	.13***
“Another”	.39 [†]	.18	1.61	1.26	.14	.08
Age (20–60 years)	-.02***	-.02***	.97***	.98***	.002	.003
Marital status (cohabiting)						
Married	-.19**	-.05	.81	.95	-.14**	-.10*
Race/ethnicity (NH White)						
NH Black	-.07	-.37***	.88	.65*	.09	-.02
NH Asian	.16	-.06	1.66*	1.54 [†]	.1	.06
Hispanic	-.16*	-.12 [†]	1.08	1.12	.06	.07
NH multirace	.05	.00	1.12	1.13	.22**	.21*
“Another”	-.11	-.13	.84	.81	.05	.03
Children (none)						
One	.06	.06*	.95	.93	.05	.04
Two or more	.16*	.18**	1.06	1.09	.09 [†]	.09 [†]
Education (less than HS/HS)						
Some college	.09	.11	1.20	1.21	.21***	.20***
College graduate	.25***	.33***	1.53**	1.67**	.41***	.41***

Mechanisms	Overall Stress		Increase Stress ^a		COVID-19 Disrupt Life	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Log HH income (1-13.12)		.01		.99		.03*
Microaggressions (1-4.6)		.38***		1.34*		.13**
Health discrimination (1-5)		.28***		1.35***		.13***
Friend support (1-5)		.04 ⁺		1.11*		.004
Family support (1-5)		-.03		.98		.03 ⁺
Community support (1-5)		-.07***		.90 ⁺		.004
Health condition (0-1)		.28***		1.20		.08 ⁺

Source: National Couples' Health and Time Study ($n = 3,612$).

Note: *Italic text indicates significant ($p < .05$) differences among sexual minorities with gay/lesbian as the reference category. Month of survey is included in the models but not presented. COVID-19 = coronavirus disease 2019; HH = household; HS = high school; NH = non-Hispanic.*

^a Logistic regression odds ratios are presented.

⁺ $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3. Pandemic Domain-Specific Stress Levels among Sexual Minority and Heterosexual Respondents.

	Health Stress		Relationship Stress		Economic Stress	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Sexual identity						
Heterosexual (reference)						
Gay/lesbian	.21**	.20*	.002	-.01	.05	.06
Bisexual	.39**	.29*	.25*	.20 ⁺	.41***	.30**
“Another”/multiple	.72***	.52***	.25 ⁺	.14	.38***	.13
Sociodemographic						
Gender (man)						
Woman	.36***	.28***	-.01	-.01	.19***	.15***
“Another”	.17	.001	.03	-.06	.46**	.31 ⁺
Age (20–60 years)	.001	.001	.01***	.01***	-.02***	-.01***
Marital status (Cohabiting)						
Married	-.34***	-.21**	-.32***	-.25***	-.36***	-.16**
Race/ethnicity (NH White)						
NH Black	.23*	.01	.09 ⁺	-.05	.02	-.29***
NH Asian	.38**	.35**	.03	-.02	.12	.05
Hispanic	.22**	.22**	-.06	-.05	.03	.04
NH multirace	.26*	.23*	.02	-.01	.17	.11
“Another”	-.14	-.14	-.03	-.05	.01	-.003
Children (none)						
One	.07	.05	.06	.07 ⁺	-.03	-.04
Two or more	-.14*	-.15*	.11**	.12**	.10	.12*
Education (less than HS/HS)						
Some college	.16 ⁺	.17*	-.02	-.01	-.08	-.03
College graduate	.34***	.44***	.04	.07 ⁺	-.18**	-.03
Mechanisms						

	Health Stress		Relationship Stress		Economic Stress	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Log HH income (1-13.12)		-.05*		-.003		-.06***
Microaggression (1-4.6)		.13*		.20***		.42***
Health care discrimination (1-5)		.29***		.11***		.26***
Friend support (1-5)		-.01		.04*		-.01
Family support (1-5)		.05*		-.06***		-.01
Community support (1-5)		-.11***		-.02		-.06**
Health condition (0-1)		.18**		-.02		.21***

Source: National Couples' Health and Time Study ($n = 3,612$).

Note: Italic text indicates significant ($p < .05$) difference among sexual minorities with reference group gay and lesbian identity. Month of survey is included in the models but not presented. HH = household; HS = high school; NH = non-Hispanic.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

**** $p < .001$.