Stress and Mental Health: A Focus on COVID-19 and Racial Trauma Stress

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In the United States, COVID-19 unfolded alongside profound racial trauma. Drawing on a population-representative sample of twenty- to sixty-year-olds who were married or cohabiting, the National Couples' Health and Time Study (N = 3,642), we examine two sources of stress: COVID-19 and racial trauma. We leverage the fully powered samples of respondents with racial-ethnic and sexual minority identities and find that COVID-19 and racial trauma stress were higher among individuals who were not White or heterosexual most likely due to racism, xenophobia, and cis-heterosexism at the individual and structural levels. Both COVID-19 and racial trauma stress were associated with poorer mental health outcomes even after a rich set of potential mechanistic indicators, including discrimination and social climate, were taken into account. We argue that the inclusion of assessments of stress are critical for understanding health and well-being among individuals affected by systemic and interpersonal discrimination.

Keywords: COVID-19, racial trauma, stress, mental health

The COVID-19 pandemic upended American family life and drew inequities in the United States into stark relief. The closing of schools, the loss of jobs, conflicting public health messages and measures, and the general stress of life in a pandemic have led scholars to suggest that the pandemic has "alarming implications for individuals and collective health and emo-

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tional functioning" (Pfefferbaum and North 2020, 512). The effects of the pandemic were uneven with individuals racialized as non-White who already faced high levels of discrimination and structural racism experiencing a heavy toll (Hardeman and Karbeah 2020). COVID will reduce the life expectancy of Black and Latina/o/x populations by two and three years, respectively, which is three to four times the reduction for the White population (Andrasfay and Goldman 2021). Americans who are racialized as Black and Latina/o/x have an elevated, and diverse set of risk factors for COVID, including living in densely populated neighborhoods, inability to work from home, and elevated hypertension (Shah, Sachdeva, and Dodiuk-Gad 2020; Webb Hooper, Nápoles, and Pérez-Stable 2020; Alcendor 2020). Yet even as scholars consider the implications of the COVID-19 pandemic for human risk and resilience, a second major stressor of 2020 and 2021 has been lost in the shuffle—racial trauma.

COVID unfolded alongside profound racial trauma with clear visual accountings of police violence against Blacks, including George Floyd (Liu and Modir 2020; Brodie, Perdomo, and Silberholz 2021) and with more than 9,081 reports of hate incidents against Asians and Asian Americans between March 2020 and June 2021 (Yellow Horse et al. 2021). Much research examining the impact of the COVID-19 pandemic on American life has ignored the co-occurring racial trauma from police violence and anti-Asian hate. Following the murder of George Floyd, the percentage of Americans racialized as Black reporting that discrimination was a source of stress grew from 42 percent to 67 percent, and 78 percent agreed that it was difficult being Black in America during summer 2020 (APA 2020a, 2020b). Between 2013 and 2017, Black Americans who lived closer to acts of anti-Black violence reported poorer mental health than their White neighbors (Curtis et al. 2021). Further, Asian and Pacific Islander Americans also experienced profound racial trauma given that they are experiencing more discrimination than they did before the pandemic (Jeung et al. 2021; OCA-Asian Pacific American Advocates 2020; Ruiz, Menasce Horowitz, and Tamir 2020) and serious acts of violence against Asian Americans have been on the rise (Gover,

Harper, and Langton 2020). Hence it may be unsurprising that Asians are reporting more mental health problems during the pandemic (Wu, Qian, and Wilkes 2021) and have also reported high rates of suicidal ideation and behaviors (Shih, Chang, and Chen 2019).

Sexual and gender minorities, who also face high levels of stress and discrimination (White, Sepúlveda, and Patterson 2020), have also been profoundly affected by the pandemic. Cross-sectional evidence indicates that individuals who do not identify as heterosexual experienced exacerbated mental health problems and stress than heterosexuals (Moore et al. 2021; Hoyt et al. 2021; Peterson, Vaughan, and Carver 2021; Manning and Kamp Dush 2022). Further, about half of sexual minorities reported that their stress increased, relative to 29 percent of heterosexual respondents (Manning and Kamp Dush 2022).

Thus, rather than rely on a general indicator, we focus on two particular domains of stress: the pandemic and the movement for racial equity. We examine the characteristics associated with more, or less, of each type of stress and identify the associations between pandemic and racial trauma stress and mental health. Based on a stress process framework (Pearlin et al. 1981), heightened levels of stress are expected to be associated with well-being. We test two hypotheses. First, consistent with the minority stress model (Meyer 1995), we expect that individuals who experience elevated structural discrimination at the macro and the interpersonal levels, including individuals racialized as non-White and those who do not identify as heterosexual, will report heightened stress. Individuals who are not White or heterosexual in the United States not only confront everyday stress due to discrimination (Berjot and Gillet 2011) but are expected to experience greater levels of stress as they bear more of the deleterious effects of the pandemic and the movement for racial equity due to structural discrimination. Second, we expect that elevated COVID and racial trauma stress will be associated with increased symptoms of depression and anxiety, as well as loneliness and stress overload even after accounting for demographic correlates. In addition, we include indicators (economic resources, discrimination, support from their

partner or spouse, social support, physical health) that may buffer the negative effects of structural discrimination that manifests in elevated pandemic and racial trauma stress and stress and well-being. This article advances our understanding of how specific sources of stress are associated with well-being.

RISK AND RESILIENCE IN WELL-BEING AND RACIAL TRAUMA

The risk and resilience in family well-being during the COVID-19 pandemic model (Prime, Wade, and Browne 2020) suggests that the COVID-19 pandemic led to social disruption, including financial insecurity and social distancing, which in turn increased psychological distress. We extend this model and argue that George Floyd's murder led to collective trauma (Barbot 2020), particularly for Black Americans, but also for all of U.S. society (Hirschberger 2018), which in turn led to social disruption and psychological distress. We also apply the concept of existing family vulnerabilities (Prime, Wade, and Browne 2020), such as economic hardship, racism and marginalization, physical health conditions, and couple relationship functioning to these crises. Yet we name the cause of these vulnerabilities—structural racism and cis-heterosexism are associated with increased economic hardship and poor physical health conditions (Hardeman et al. 2022; Pachankis et al. 2021). Heather Prime, Mark Wade, and Dillon Browne (2020) claim that family vulnerabilities, which we argue have their roots in structural racism and heterosexism, make families particularly susceptible to the stress of the pandemic and George Floyd's murder.

THE MINORITY STRESS MODEL

The minority stress model (Meyer 1995; Meyer and Frost 2013) suggests that because of marginalization and discrimination at the structural level, individuals who inhabit an identity that is not privileged, in particular a nonheterosexual identity, experience elevated stress, which results in poorer mental health. Clearly, the pandemic was particularly stressful for individuals who experienced discrimination on the basis of non-White or nonheterosexual identities at the structural and interpersonal

levels. In regard to pandemic-related stress, Black and Latina/o/x populations were more likely to contract COVID-19, experience severe symptoms if they contracted COVID-19, and more likely to die from COVID-19 (Andrasfay and Goldman 2021). This elevated risk was at least partly due to the negative and long-reaching negative effects of racism and cis-heterosexism on educational and occupational outcomes for non-White, nonheterosexual individuals, exacerbating health disparities. Thus, some research has indicated that Black and Latina/o/x individuals in the United States are experiencing higher health-related stress than their White counterparts. Further, racist attacks against and murders of Asians and Asian Americans have increased during the pandemic, stemming from rhetoric racializing COVID-19 as the China virus, causing significant distress to Asian and Asian American communities. Steven Taylor and his colleagues (2020), whose measure of COVID stress included being infected by COVID, found that White respondents had the lowest COVID stress, Black and African American respondents had intermediate stress, and Asian and Latina/o/x respondents had the highest. Mark Czeisler and his colleagues (2020), using population-representative panel data, find that Whites and Asian Americans reported the lowest levels of COVID-specific trauma and stressor-related disorders, and that Latina/o/x and non-Latina/o/x Black respondents had the highest levels.

Minority stress theory posits that chronically experiencing discrimination and rejection due to a nonheterosexual identity can deplete coping resources and leave individuals more vulnerable to stressors (Meyer 1995; Meyer and Frost 2013). This elevated discrimination and rejection is rooted in structural heterosexism and associated with poor psychological health (Pachankis et al. 2021; Hatzenbuehler 2014). Thus sexual minorities may also experience additional stress due to COVID-19 because they may have depleted coping resources from coping with heterosexism and have fewer resources to call on (Operario et al. 2015; Meyer and Frost 2013). In a convenience sample, sexual minorities reported higher COVID stress, measured with a peritraumatic distress inventory modi-

fied for the pandemic, than their heterosexual counterparts (Peterson, Vaughan, and Carver 2021).

Gender identity may also be related to CO-VID stress. Women have taken on a greater share of the housework and parenting in many different-gender couples, even during the pandemic. Further, women's jobs were at greater risk of being eliminated across the globe (Alon et al. 2021). Scholars have called the hit to women's careers a "shecession" (Gupta 2020; Alon et al. 2021). Violence against women during the pandemic also escalated (Kaukinen 2020). Thus that women have reported elevated COVID stress than men is not surprising (Park et al. 2020).

Racial trauma has been defined as racially and ethnically marginalized individuals' "reactions to dangerous events and real or perceived experiences of racial discrimination" (Comas-Díaz, Hall, and Neville 2019, 1). On May 25, 2020, the murder of an unarmed, handcuffed George Floyd at the hands of the Minneapolis police was captured in a horrific video as officer Derek Chauvin knelt on Floyd's neck for eight minutes and forty-six seconds. The video reverberated around the world, sparking protests and reiterating that Black Lives Matter. The racial trauma of this death was real. After Floyd's death, the percentage of Black Americans who reported that discrimination was a source of stress grew from 42 percent to 67 percent, and 78 percent agreed that it was difficult being Black in America during summer 2020 (APA 2020a, 2020b). Indeed, research showed that Black Americans were more likely to report their mental health as "not good" and were more likely to visit the emergency department for depression when the police killed unarmed Black Americans (Bor et al. 2018; Curtis et al. 2021; Das et al. 2021). We anticipated that stress related to George Floyd's murder and the subsequent movement for racial justice would be greater among Black Americans but could also affect other groups (Hirschberger 2018).

DO MENTAL HEALTH ADVANTAGES AMONG RACIAL MINORITIES PERSIST DURING THE PANDEMIC?

Given that marginalized Americans are at greater risk for COVID-19 stress and Black Americans are at greater risk for racial trauma, it would follow that marginalized Americans would be at greater risk for mental health problems during the pandemic as posited by the both risk and resilience in family well-being during the COVID-19 pandemic model (Prime, Wade, and Browne 2020) and minority stress model (Meyer 1995; Meyer and Frost 2013). Yet a well-documented finding often overlooked in research emerging during the pandemic is that individuals who were not racialized as White entered the pandemic with mental health advantages over their White counterparts (Brody et al. 2013; Brody et al. 2020; Dover, Major, and Glace 2020). Many models, such as the Prime, Wade, and Browne (2020) model, treat resilience as an outcome, yet as Chalandra Bryant, Leslie Anderson, and Maxine Notice's (2022) revisioning resilience model notes, resilience is a process that can lead to both positive and negative health outcomes. For example, Black Americans living under protracted impoverished conditions actually "bounced forward," demonstrating psychosocial competence but still showed significant physical wear and tear on their bodies, a concept known as skin-deep resilience (Bryant, Anderson, and Notice 2022; Brody et al. 2013). We expect individuals who are most influenced by structural racism and heterosexism—individuals who are not White or heterosexual—to report heightened pandemic and racial trauma stress. But we also expect that despite that stress rooted in structural discrimination, individuals not racialized as White may also have positive mental health. For example, Black (Thomas Tobin et al. 2020; Erving, Thomas, and Frazier 2018; Barnes and Bates 2017) and Latina/o/x individuals (Alegría et al. 2008; Calzada et al. 2020) have fewer mental health problems than Whites. Following what is called Black Advantage Vision (Pattillo 2021), framing these findings as a paradox introduces a racist lens (Doucet 2021) and diminishes key social and individual resources available to marginalized groups that shape responses to discrimination (Brown, Mitchell, and Ailshire 2020; Pamplin and Bates 2021). The question is whether these mental health advantages remain during the pandemic and despite racial trauma and COVID-19 stress. Some mixed evidence with Census Pulse data suggests ele-

vated levels of stress and anxiety among Latinos and African Americans that spike during the pandemic (Fowers and Wan 2020). In contrast, Meghan Reading Turchioe and her colleagues (2021) find that the mental health advantages continued during the pandemic despite the particular stress of the pandemic on Black, Asian, and Latina/o/x individuals as suggested by nonsignificant differences between White and non-White respondents in anxiety or depression. Further, Czeisler and his colleagues (2020) find no significant differences in symptoms of anxiety or depressive disorders between non-Latina/o/x Black and White respondents during the pandemic, but do find that Latina/o/x respondents reported significantly more symptoms of anxiety or depressive disorder. Given the particular stress of the pandemic for non-White individuals, we expected poorer mental health among those not racialized as White relative to their White counterparts.

Because the pandemic has also been particularly stressful for sexual minorities (Peterson, Vaughan, and Carver 2021; Manning and Kamp Dush 2022) and the well-documented disparities in mental health for sexual minorities relative to their counterparts before the pandemic (Plöderl and Tremblay 2015), we expected sexual minorities would report lower mental health during the pandemic. Further, because of the particular toll of the pandemic for women (Gupta 2020; Alon et al. 2021) and gender-based disparities in mental health problems such that women more often report internalizing mental health problems such as depression and anxiety (Rosenfield and Mouzon 2013), we expected women to report more mental health problems than men during the pandemic. We also expected both COVID-19 stress and racial trauma stress to be positively associated with poorer mental health during the pandemic given that stress and mental health are significantly associated (Pearlin 1999).

MEDIATORS

Returning to the risk and resilience in family well-being during the COVID-19 pandemic model (Prime, Wade, and Browne 2020), which suggests that existing family vulnerabilities and the social disruption of the pandemic increased psychological distress, we test potential mediators through which race-ethnicity, sexual identity, and gender identity might be associated with COVID-19 stress, racial trauma, and mental health, and through which COVID-19 stress and racial trauma are associated with mental health. Socioeconomic status may buffer the negative effects of the pandemic either through a safety net should job loss occur, or social connections, as discussed in detail in Courtney Page-Tan, Summer Marion, and Daniel Aldrich's article in this issue (2022), that could help secure a new job and buffer the negative impacts of a crisis. Similarly, losing one's job could exacerbate the negative effects of the pandemic. Microaggressions are detrimental to mental health, and could be a pathway through which marginalized identities are associated with stress and poorer mental health. Discrimination in the health-care context (Abramson, Hashemi, and Sánchez-Jankowski 2015) and whether a community supports Black or LGB individuals are individual-level indicators of structural racism and heterosexism that increase stress accordingly, and may be a pathway through which marginalized identities are associated with mental health problems (Hatzenbuehler et al. 2010; Bailey et al. 2017). Romantic relationships (Feinstein et al. 2016) and social support are a key buffers of stress (Wang et al. 2014), yet sexual minorities tend to have less access to social support (Tate and Patterson 2019; Gustafson, Manning, and Dush 2022). Further, some evidence indicates that social support reduced the risk of mental health problems during the pandemic (Grey et al. 2020). Sexual minorities (Institute of Medicine 2011) and Latina/o/x and Black individuals (Raifman and Raifman 2020; Macias Gil et al. 2020) are more likely to have comorbid conditions that put them at greater risk of death should they contract COVID-19 and hence may have increased stress. Thus we also include physical health conditions as a potential mediator. Finally, we also include an indicator of working from home more than before the pandemic. Workers in the United States scrambled to adapt to changes in their work while experiencing the social isolation of quarantine and social distancing recommendations (Goldberg, Mc-

Cormick, and Virginia 2021). Together we provide a broad set of indicators that may explain the role of stress on mental health.

METHOD

We draw on the National Couples' Health and Time Study (NCHAT), which was fielded from September 2020 to April 2021. NCHAT is a nationally representative sample of 3,642 respondents ages twenty to sixty who were married or cohabiting with oversamples of racial and ethnic minorities and sexual minorities. The respondents were primarily members of the Gallup Panel, a probability-based nationally representative panel of more than 110,000 individuals. Additional sexual minority respondents were recruited from other population-representative Gallup samples. Web-based surveys were completed in Spanish and English and respondents took on average forty minutes to complete them. The data are weighted to be population representative of twenty- to sixty-year-old married or cohabiting couples in the United States using targets from the 2019 National Health and Interview Survey and the 2019 American Community Survey.

Measures

Two indicators of stress are initially dependent variables and then key independent variables in analyses estimating levels of mental health. *COVID-19 Stress* was measured by the mean of three items ($\alpha = .89$), assessing stress about yourself getting coronavirus; your partner getting coronavirus; or your parents, siblings, or other family members getting coronavirus on a 5-point scale from not at all to very stressed. *Racial Trauma Stress* was measured by asking, "How has the recent movement for racial equity sparked by the killing of George Floyd influenced your stress?" on a 4-point scale from not at all to a great deal.

We used four mental health 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 (for example, lonely, depressed) in the past seven days on a 3-point scale from rarely or none of the time (less than one day) to most or all of the time (five to seven days). The items were summed ($\alpha = .87$). *Anxiety* was mea-

sured using the 7-item generalized anxiety disorder measure (Tiirikainen et al. 2019; Spitzer et al. 2006). Respondents were asked how often they were bothered by seven problems in the past seven days (for example, not being able to stop or control your worrying) on a 4-point scale from not at all (1) to nearly every day (4). 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 problems (for example, "How often did you feel that you lack companionship?") over the past seven days on a 5-point scale from never to very often ($\alpha = .84$). *Stress overload* was measured using a sum of the short stress overload scale (seven items; $\alpha = .85$; Amirkhan 2018). Respondents reported how often they felt seven ways (for example, overwhelmed by your responsibilities) on a scale from never (1) to very often (5) over the past seven days.

We used three key independent variables. Respondents reported their *race-ethnicity*, coded as non-Latina/o/x White, non-Latina/o/x Black, non-Latina/o/x Asian, non-Latina/o/x other race, non-Latina/o/x multirace, or Latina/o/x. 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 (including queer, pan, and omni), and other or multiple sexual identities. Respondents reported their *gender identity* from five options, including woman, man, trans woman, trans man, and Other. For these analyses, women and trans women, and men and trans men, were grouped together.

Eight mediator variables came into play. *Working from home* was a dichotomous variable created to capture respondents who reported that they were working from home more than they usually do in the previous week because of the coronavirus pandemic (0 = no; 1 = yes). Respondents' *income to poverty ratio* was calcu-

lated by dividing total household income, which was top coded at the 95 percent level, by the 2020 federal poverty guidelines based on the number of individuals living in the respondent's house. *Microaggressions* were 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 never (1) to very often (5). (Williams et al. 1997; Meyer 2020) An average of the nine items was taken (α = .85), a higher value indicating more frequent experiences of microaggressions. Respondents answered five questions about *Health-Care Discrimination* by indicating their agreement with items including "When seeking health care . . . I worry about being negatively judged, I worry that diagnoses of me/my health may be negative because of who I am" on a scale from strongly disagree to strongly agree (α = .85) (Abdou and Fingerhut 2014). Responses were averaged with higher scores indicating more discrimination. *Community Support for Race and Ethnic Minorities* was measured by respondents reporting whether the city or area where they live was a good place (5) or not a good place (1) to live for racial and ethnic minorities (Gallup 2008; Meyer 2020). *Community Support for LGB* identifying individuals was measured by respondents reporting the city or area where they live is a good place (5) or not a good place (1) to live for those who are gay, lesbian, or bisexual (Gallup 2008; Meyer 2020). *Support from Partner or Spouse* was measured by asking respondents (Procidano and Heller 1983), "How much do you rely on each of the following people for emotional support . . . I rely on my spouse or partner for emotional support." Responses ranged from not at all (1) to a great deal (5). *Social Support* was measured by two questions (Procidano and Heller 1983), "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 not at all (1) to a great deal (5) (r =.29, p < .001). *Physical Health Condition.* Current physical health condition was based on an affirmative response to a series of questions about whether respondents had "been told by a doctor or health professional" that they currently had any one of twenty-two health conditions, including liver disease, cancer, and HIV.

We use ten sociodemographic variables. *Couple Type* was constructed using the respondent's gender identity and their reports of their partner's gender identity. Respondents were coded as being in a same-gender couple if their gender identity matched their partner's gender identity, for example, men with men (including trans men) and women with women (including trans women). Respondents reported if they were legally *Married* to their spouse or partner. *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 the demographic characteristics of all members of their household. We created a code for the number of *Household Children* under the age of eighteen living in their household, including grandchildren, which ranged from 0 to 7. Categories were collapsed to be 0, 1, and 2 or more. A dichotomous indicator for *interracial couples* was constructed if the main respondent's race and ethnicity did or did not match their spouse or partner's race and ethnicity. A dichotomous indicator for *Foreign-born* was constructed if the main respondent was born outside the United States. *Education* was divided 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. *Cohabitation duration* was measured from the month and year couples moved in together and the month and year of the main respondent's survey. The *month of survey* spanned from September 2020 through March 2021 and was included as dummy variables, although these variables are not shown in the tables to save space.

Analytic Plan
We first present descriptive statistics for all study variables and then ordinary least squares regression results for models predicting COVID-19 and racial trauma stress from race-

ethnicity, sexual identity, gender identity, and demographic controls. Next are nested ordinary least squares models for each of four mental health outcomes: depression, anxiety, loneliness, and stress overload. The first model includes only race-ethnicity, sexual identity, gender identity, and demographic controls. COVID-19 stress is added to the second model. Model three adds racial trauma stress to the model. Finally, model four adds potential mediators including working from home, income to poverty ratio, microaggressions, health-care discrimination, community support in the context of race, community support in the context of sexual identity, partner-spouse support, social support, and physical health conditions. In results not shown, we also test the interaction of COVID-19 stress and racial trauma stress for our mental health outcomes to examine whether these sources of stress further exacerbate mental health problems. Finally, we stratify the sample by race and ethnicity to examine the association between COVID-19 and racial trauma stress separately for non-Latina/o/x White, non-Latina/o/x Black, non-Latina/o/x Asian, Latina/o/x, and non-Latina/o/x multirace respondents.

All analyses were weighted using the population subset command and were conducted in STATA 16.0. Unconditional subpopulations analyses are recommended instead of dropping cases that are not in the subpopulation, which can result in restricted estimates and variances (West, Berglund, and Heeringa 2008). Models were checked for multicollinearity prior to estimation. All variance inflation factors were below three, indicating low concern for multicollinearity.

RESULTS

Sample characteristics. The weighted distribution and unweighted n's of the variables used in analyses are presented in table 1. COVID-19 and racial trauma stress were above the midpoint of their scales, which is unsurprising given that the data were collected from September 2020 to April 2021. One in eight (12 percent) of the sample reported experiencing high levels of racial trauma and one-quarter (23 percent) reported the very lowest levels. In regard to COVID-19 stress, one in ten (11 percent) of re-

spondents reported high levels (one standard deviation above the mean). The mental health measures of depression, anxiety, loneliness, and stress overload were below their midpoints on average. After weighting, about 8 percent of the sample was non-Latina/o/x Black ($n = 336$), 7 percent non-Latina/o/x Asian ($n = 209$), 5 percent non-Latina/o/x multirace ($n = 206$), 22 percent Latina/o/x ($n = 585$), and 1 percent as an other racial or ethnic identity ($n = 57$). After weighting, approximately 95 percent of the sample identified as heterosexual ($n = 2021$), 1 percent as gay or lesbian ($n = 734$), 1 percent as bisexual ($n = 422$), and 3 percent as an other sexual identity or multiple sexual identities ($n = 465$). The sample was about evenly split between men (49 percent; $n = 1,787$) and women (51 percent; $n = 1,757$), and less than 1 percent identified as an other gender identity ($n = 98$). After weighting, 2 percent of couples were same-gender couples ($n = 994$), and 1 percent were nonbinary couples ($n = 141$). About 81 percent were married ($n = 2,682$) and the average age was forty-three. After weighting, 54 percent of the sample had no children ($n = 2,368$). Thirty percent of the sample was in an interracial couple ($n = 1,075$). Ten percent were born outside the United States ($n = 344$). After weighting, approximately one-third (31 percent; $n = 641$) had a high school education or less, 29 percent ($n = 949$) had some college or technical training, and 40 percent ($n = 2,051$) had a bachelor's degree or more. Most respondents worked full time (64 percent; $n = 2,473$). Approximately one-third worked from home (31 percent; $n = 1,380$). The average income to poverty ratio was 5.48. Microaggressions and health-care discrimination were reported below the midpoint. Community support in terms of race and sexual identity, partner-spouse social support, and overall social support, were above the midpoint. About half (53 percent) reported at least one physical health care condition.

Disparities in COVID-19 Stress and Racial Trauma Stress

COVID-19 stress. Table 2 includes ordinary least squares regression results predicting COVID-19 and racial trauma stress. Overall, respondents who were Asian, Latina/o/x, or multirace reported higher COVID-19 stress than non-

Table 1. Descriptive Statistics for All Study Variables

	Weighted *M* or Proportion	SE	Unweighted *n*	Minimum	Maximum	% Missing
COVID-19 stress	8.10	0.10	—	3	15	1.15
Racial trauma stress	2.12	0.03	—	1	4	0.41
Depression	7.60	0.20	—	0	30	2.91
Anxiety	11.47	0.18	—	7	28	1.48
Loneliness	5.97	0.08	—	3	15	0.16
Stress overload	15.85	0.22	—	7	35	1.40
Race-ethnicity	—	—	—	—	—	0.05
Non-Latina/o/x White	0.59	—	2,247	—	—	—
Non-Latina/o/x Black	0.08	—	336	—	—	—
Non-Latina/o/x Asian	0.07	—	209	—	—	—
Latina/o/x	0.22	—	585	—	—	—
Non-Latina/o/x multirace	0.04	—	206	—	—	—
Other racial-ethnic identity	0.01	—	57	—	—	—
Sexual identity	—	—	—	—	—	0.00
Heterosexual	0.97	—	2,021	—	—	—
Gay or lesbian	0.01	—	734	—	—	—
Bisexual	0.01	—	422	—	—	—
Other or multiple identities	0.01	—	465	—	—	—
Gender	—	—	—	—	—	0.00
Man or trans man	0.49	—	1,787	—	—	—
Woman or trans woman	0.51	—	1,757	—	—	—
Other gender identity	0.002	—	98	—	—	—
Couple type	—	—	—	—	—	0.00
Different gender	0.98	—	2,507	—	—	—
Same gender	0.02	—	994	—	—	—
Nonbinary	0.01	—	141	—	—	—
Married (cohabiting)	0.81	—	2,682	—	—	0.11
Age	43.14	0.97	—	20	60	0.00
Household children <18	—	—	—	—	—	0.00
One	0.19	0.01	585	—	—	—
Two or more	0.27	0.02	689	—	—	—
Interracial couple (same race)	0.30	0.01	1,075	—	—	5.30
Foreign born (native born)	0.11	0.01	344	—	—	0.58
Education	—	—	—	—	—	0.03
High school or less	0.31	0.03	641	—	—	—
Some college	0.29	0.03	949	—	—	—
Bachelor's degree +	0.40	0.03	2,051	—	—	—
Employment	—	—	—	—	—	0.11
Full-time	0.65	0.02	2,473	—	—	—
Part-time	0.11	0.11	369	—	—	—
Unemployed	0.25	0.25	796	—	—	—
Cohabitation length	15.88	0.68		0	58.58	3.46
Work from home	0.31	0.02	1,380	—	—	0.00

Table 1. (*continued*)

	Weighted *M* or Proportion	SE	Unweighted *n*	Minimum	Maximum	% Missing
Income to poverty ratio	5.48	0.19	—	0.00	29.00	2.03
Microaggressions	1.47	0.02	—	1	4.55	0.14
Health-care discrimination	2.23	0.02	—	1	5	0.14
Community support race	3.86	0.03	—	1	5	0.14
Community support LGB	3.79	0.03	—	1	5	0.19
Support from partner or spouse	4.07	0.03	—	1	5	0.16
Social support	3.17	0.03	—	1	5	0.14
Physical health condition	0.53	—	—	—	—	0.38
Month of survey	—	—	—	—	—	0.00
September	0.22	—	1,233	—	—	—
October	0.04	—	180	—	—	—
November	0.14	—	366	—	—	—
December	0.07	—	352	—	—	—
January	0.30	—	769	—	—	—
February	0.04	—	178	—	—	—
March	0.18	—	452	—	—	—
April	0.03	—	112	—	—	—

Source: Authors' calculations based on Kamp Dush and Manning 2022.
Note: Reference category listed in parentheses.

Latina/o/x White respondents. Additional analyses indicate that among racial and ethnic minorities, there are no statistically significant differences in COVID-19 stress. Further, respondents with other sexual identity/multiple sexual identities reported more COVID-19 stress than heterosexual respondents. Supplemental analyses focusing on sexual minorities indicate that there are no statistically significant differences in COVID-19 stress. Women reported more COVID-19 stress than men. Married respondents reported less COVID-19 stress than cohabiting respondents. Respondents with two or more household children reported less COVID-19 stress than respondents with no household children. Foreign-born respondents reported higher COVID-19 stress. Respondents with some college or a bachelor's degree or more reported more COVID-19 stress than respondents with a high school diploma or less. Respondents who were employed part-time or unemployed reported more COVID-19 stress than respondents who were employed full time.

Racial trauma stress. Turning to racial trauma stress (see Table 2), Black and multirace respondents reported higher racial trauma stress than non-Latina/o/x White respondents. Supplemental analyses indicate that among racial and ethnic minorities, Asian, Latina/o/x, multiracial and other racial and ethnic identities reported less racial trauma stress than Black respondents. Multiracial respondents reported more racial trauma stress than Asian, Latina/o/x, and other racial and ethnic identity respondents. Bisexual and those who were other or multiple sexual identities also reported higher racial trauma stress than their heterosexual counterparts. Supplemental analyses among sexual minority respondents indicate no differences based on specific identities. Women and individuals with another gender identity reported more racial trauma stress than men. Respondents with some college or a bachelor's degree or more reported more COVID-19 stress than respondents with a high school diploma or less.

Table 2. Ordinary Least Squares Regression Results Estimating Stress

	COVID-19 Stress		Racial Trauma Stress	
	B	SE	B	SE
Race-ethnicity (Non-Latina/o/x White)				
Non-Latina/o/x Black	0.53	0.30	0.52***	0.08
Non-Latina/o/x Asian	1.05*	0.41	−0.03	0.10
Latina/o/x	0.75**	0.25	−0.10	0.06
Non-Latina/o/x multirace	0.98*	0.46	0.23*	0.11
Other racial-ethnic identity	−0.15	0.83	−0.06	0.13
Sexual identity (heterosexual)				
Gay or lesbian	0.35	0.68	0.45	0.26
Bisexual	0.93	0.53	0.48***	0.13
Other or multiple identities	1.13*	0.50	0.50***	0.11
Gender (man or trans man)				
Woman or trans woman	0.96***	0.19	0.27***	0.05
Other gender identity	−0.48	1.01	0.40*	0.19
Couple type (different gender)				
Same gender	0.24	0.66	−0.18	0.26
Nonbinary	1.67*	0.80	−0.09	0.13
Married (cohabiting)	−0.89***	0.24	−0.08	0.07
Age	0.00	0.01	0.00	0.00
Household children <18 (0)				
One	0.10	0.21	0.01	0.06
Two or more	−0.62**	0.21	−0.05	0.06
Interracial couple (same race)	−0.17	0.28	0.09	0.05
Foreign born (native born)	0.66*	0.33	−0.06	0.08
Education (high school or less)				
Some college	0.71**	0.25	0.20**	0.07
Bachelor's degree +	1.21***	0.23	0.35***	0.07
Employment (full-time)				
Part-time	0.66*	0.30	0.06	0.08
Unemployed	0.72***	0.24	0.04	0.06
Cohabitation length	−0.01	0.01	0.00	0.00
Constant	7.24	0.58	1.94	0.17
N	3,276		3,302	
F	8.69***		14.01***	
R^2	0.10		0.12	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: Reference category in parentheses. Month of survey included but not shown.

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

The Role of COVID-19 Stress and Racial Trauma Stress in Mental Health Outcomes

Race-ethnicity main effects. Nested ordinary least square regression results for depression, anxiety, loneliness, and stress overload are reported in tables 3, 4, 5, and 6. Black respondents reported significantly lower levels of anxiety and stress overload than White respondents. Latina/o/x respondents reported significantly lower depression levels and scores on

stress overload than White respondents. Among racial and ethnic minorities, Black and Latina/o/x respondents reported lower depression levels than Asian respondents.

Sexual identity and gender main effects. Bisexual and those with other or multiple sexual identities reported significantly more depressive and anxious symptoms than heterosexual individuals. Bisexuals reported significantly more stress overload and loneliness than heterosexual individuals. Among sexual minorities, gay and lesbian respondents reported lower levels of depression than bisexual respondents and those with other or multiple identities. Bisexual respondents reported more anxiety and loneliness than gay or lesbian respondents. Women reported significantly elevated depressive and anxious symptoms, loneliness, and stress overload than men. Individuals in nonbinary couples reported significantly more stress overload and loneliness than those in different-gender couples.

COVID-19 stress models. Next, we added COVID-19 stress to the models. Higher COVID-19 stress was associated with significantly higher depression and anxiety levels, more loneliness, and more stress overload even with controls for race-ethnicity, sexual identity, gender identity, and demographic characteristics.

Racial trauma stress models. In the third set of models, we added racial trauma stress to the models. Greater racial trauma was significantly associated with elevated depression, anxiety, loneliness, and stress overload net of COVID-19 stress, race-ethnicity, sexual identity, gender identity, and demographic characteristics. Although COVID-19 stress remained significantly associated with mental health in these models, notably, racial trauma stress accounted for 15 percent of the COVID-19 stress association for depression levels, 17 percent for anxiety levels, 12 percent for loneliness, and 19 percent for stress overload.

Mediator models. The final set of models included the mediating variables of working from home, income to poverty ratio, microaggressions, health-care discrimination, community support in the context of race, community sup-

port in the context of sexual identity, support from their partner or spouse, social support, and physical health conditions. Greater COVID-19 and racial trauma stress remained significantly associated with higher depression and anxiety levels and higher stress overload. Additionally, greater COVID-19 stress remained significantly associated with loneliness. However, the size of the associations decreased; the COVID-19 stress effects decreased between 16 percent and 33 percent, and the racial trauma stress effects decreased between 28 percent and 38 percent. Additionally, the association between racial trauma stress and loneliness became nonsignificant. Thus some evidence indicates that these mediators could be candidates for further study as we seek to alleviate the negative impact of the pandemic and racial trauma on mental health.

The inclusion of the rich set of indicators did not change the associations between sexual identity and mental health, in that bisexual respondents reported more depressive and anxious symptoms, loneliness, and stress overload than heterosexuals. Additionally, individuals with other or multiple sexual identities reported more depressive symptoms than heterosexuals. Turning to racial identity, in the model without mediators, Latina/o/x respondents reported significantly lower anxiety levels than White respondents, but this association was no longer statistically significant in the full model with the mediators. Thus, the mediators explained the differentials between White and Latina/o/x respondents and in analyses not shown, community support for race had a particular impact. Additionally, Latina/o/x respondents continued to indicate significantly lower levels of depression and stress overload, and non-Latina/o/x multirace respondents reported significantly lower levels of stress overload than non-Latina/o/x White respondents. In these models, Black respondents continued to indicate significantly lower levels of depression, anxiety, and stress overload than White respondents. In contrast, Black respondents reported significantly lower levels of loneliness in the full model and not in the model without the mediators, and partner support was the pri-

Table 3. Ordinary Least Squares Regression Results for Depression

	Depression							
	B	SE	B	SE	B	SE	B	SE
COVID-19 stress	—	—	0.55***	(0.05)	0.47***	0.05	0.35***	0.04
Racial trauma stress	—	—	—	—	1.08***	0.17	0.67***	0.17
Race-ethnicity (Non- Latina/o/x White)								
Non-Latina/o/x Black	-0.43	0.43	-0.73	0.43	-1.30**	0.45	-2.69***	0.43
Non-Latina/o/x Asian	1.07	0.68	0.45	0.68	0.55	0.65	-0.02	0.61
Latina/o/x	-0.89*	0.38	-1.30**	0.38	-1.12***	0.38	-0.98**	0.37
Non-Latina/o/x multirace	0.13	0.74	-0.49	0.76	-0.64	0.74	-0.87	0.73
Other racial-ethnic identity	0.92	1.45	1.49	1.38	1.50	1.34	1.00	1.43
Sexual identity (heterosexual)								
Gay or lesbian	0.82	0.99	0.76	1.12	0.28	1.26	1.20	0.77
Bisexual	3.59***	0.80	3.23***	0.77	2.76***	0.71	2.63***	0.59
Other or multiple identities	2.57***	0.69	2.14**	0.65	1.69*	0.69	1.67**	0.55
Gender (man or trans man)								
Woman or trans woman	1.07**	0.36	0.53	0.32	0.35	0.32	0.42	0.29
Other gender identity	3.29	2.09	2.22	1.74	1.84	1.69	0.41	1.39
Couple type (different-gender)								
Same-gender	-0.27	0.91	-0.49	1.08	-0.28	1.23	-1.14	0.68
Nonbinary	0.71	1.52	-0.25	1.48	-0.02	1.41	-0.33	1.05
Married (cohabiting)	-1.31**	0.40	-0.76*	0.38	-0.77*	0.36	-0.06	0.34
Age	-0.07**	0.02	-0.07***	0.02	-0.07***	0.02	-0.06**	0.02
Household children <18 (0)								
One	0.13	0.39	0.14	0.36	0.14	0.36	0.10	0.34
Two or more	0.48	0.42	0.86*	0.39	0.82*	0.37	0.69	0.40

	(1)		(2)		(3)		(4)	
Interracial couple (same race)	0.81*	0.40	0.90*	0.36	0.80*	0.35	0.57	0.32
Foreign born (native born)	-0.90*	0.40	-1.26**	0.45	-1.11**	0.43	-0.93*	0.38
Education (high school or less)								
Some college	0.26	0.54	-0.23	0.48	-0.35	0.46	-0.20	0.47
Bachelor's degree +	0.09	0.45	-0.66	0.41	-0.91*	0.43	-0.17	0.49
Employment (full-time)								
Part-time	0.73	0.47	0.34	0.44	0.33	0.44	0.17	0.39
Unemployed	2.19***	0.54	1.76**	0.51	1.74***	0.49	1.67*	0.55
Cohabitation length	-0.02	0.02	-0.01	0.02	-0.01	0.02	-0.01	0.02
Work from home							0.71*	0.33
Income to poverty ratio							-0.04	0.04
Microaggressions							1.91***	0.31
Health-care discrimination							1.18***	0.20
Community support race							-0.47*	0.20
Community support LGB							-0.03	0.17
Support from partner or spouse							-0.74***	0.13
Social support							-0.26	0.16
Physical health condition							1.12***	0.28
Constant	10.21***	0.91	6.30***	0.98	4.80***	1.01	5.63	1.37
N	3,222		3,184		3,173		3,094	
F	10.98***		19.60***		21.64***		29.30***	
R^2	0.10		0.20		0.23		0.34	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: Reference category listed in parentheses. Nominal variables reference category proportion is also listed in parentheses. Month of survey included in all models but not shown.

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

Table 4. Ordinary Least Squares Regression Results for Anxiety

	Anxiety							
	B	SE	B	SE	B	SE	B	SE
COVID-19 stress	—	—	0.48***	(0.05)	0.40***	0.05	0.31***	0.04
Racial trauma stress	—	—	—	—	1.06***	0.15	0.77***	0.16
Race-ethnicity (Non-Latina/o/x White)								
Non-Latina/o/x Black	-1.17***	0.34	-1.44***	0.34	-1.95***	0.35	-2.86***	0.34
Non-Latina/o/x Asian	-0.21	0.54	-0.77	0.52	-0.63	0.50	-0.88	0.47
Latina/o/x	-0.50	0.33	-0.89**	0.32	-0.70*	0.32	-0.55	0.32
Non-Latina/o/x multirace	-0.53	0.58	-1.06	0.58	-1.20*	0.57	-1.30*	0.54
Other racial-ethnic identity	0.57	1.15	0.60	1.03	0.65	1.01	0.56	1.12
Sexual identity (heterosexual)								
Gay or lesbian	0.95	0.78	0.84	0.87	0.36	0.94	0.94	0.67
Bisexual	2.80***	0.77	2.42**	0.74	1.98**	0.68	2.04**	0.61
Other or multiple identities	1.62**	0.60	1.21*	0.59	0.77	0.60	0.82	0.54
Gender (man or trans man)								
Woman or trans woman	1.42***	0.30	0.93**	0.27	0.77**	0.26	0.97***	0.25
Other gender identity	2.25	1.63	1.52	1.45	1.16	1.39	0.66	1.36
Couple type (different-gender)								
Same-gender	-0.15	0.70	-0.32	0.81	-0.10	0.89	-0.55	0.58
Nonbinary	1.19	1.06	0.33	1.20	0.57	1.12	0.36	1.09
Married (cohabiting)	-0.73	0.41	-0.26	0.40	-0.28**	0.38	0.14	0.34
Age	-0.05**	0.02	-0.06**	0.02	-0.06	0.02	-0.04**	0.02
Household children <18 (0)								
One	0.11	0.29	0.10	0.26	0.09	0.26	0.06	0.25
Two or more	0.69	0.36	1.02**	0.34	0.97**	0.32	1.02**	0.34

	Model 1 est	Model 1 (SE)	Model 2 est	Model 2 (SE)	Model 3 est	Model 3 (SE)	Model 4 est	Model 4 (SE)
Interracial couple (same race)	0.66	0.39	0.78*	0.33	0.67*	0.32	0.45	0.27
Foreign born (native born)	−0.37	0.33	−0.66	0.35	−0.55	0.34	−0.53	0.34
Education (high school or less)								
Some college	0.02	0.56	−0.37	0.50	−0.49	0.47	−0.38	0.47
Bachelor's degree +	−0.35	0.42	−0.98*	0.39	−1.22**	0.39	−0.60	0.45
Employment (full-time)								
Part-time	0.50	0.41	0.11	0.39	0.09	0.38	−0.02	0.37
Unemployed	0.98*	0.41	0.63	0.38	0.61	0.36	0.41	0.40
Cohabitation length	−1.17*	0.34	−0.03	0.02	−0.02	0.02	−0.02	0.01
Work from home							0.30	0.30
Income to poverty ratio							−0.01	0.03
Microaggressions							1.65***	0.27
Health-care discrimination							0.84***	0.16
Community support race							−0.13	0.16
Community support LGB							−0.31*	0.14
Support from partner/spouse							−0.06	0.11
Social support							−0.37*	0.16
Physical health condition							0.74**	0.24
Constant	13.76***	0.88	10.31***	0.83	8.82***	0.82	7.45***	1.20
N	3,268		3,233		3,222		3,142	
F	9.92***		16.59***		19.24***		22.31***	
R^2	0.10		0.21		0.24		0.32	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: Reference category listed in parentheses. Nominal variables reference category proportion is also listed in parentheses. Month of Survey included in all models but not shown.

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

Table 5. Ordinary Least Squares Regression Results for Loneliness

	Loneliness							
	B	SE	B	SE	B	SE	B	SE
COVID-19 stress	—	—	0.17***	0.02	0.15***	0.02	0.10***	0.02
Racial trauma stress	—	—	—	—	0.36***	0.08	0.15	0.08
Race-ethnicity (Non- Latina/o/x White)								
Non–Latina/o/x Black	0.07	0.21	-0.04	0.21	-0.25	0.22	-0.95***	0.21
Non–Latina/o/x Asian	0.25	0.32	0.06	0.32	0.09	0.31	-0.39	0.29
Latina/o/x	-0.29	0.19	-0.41*	0.18	-0.35	0.18	-0.28	0.18
Non–Latina/o/x multirace	0.31	0.32	0.02	0.32	-0.04	0.31	-0.15	0.31
Other racial-ethnic identity	-0.03	0.61	-0.01	0.67	0.00	0.65	-0.19	0.55
Sexual identity (heterosexual)								
Gay or lesbian	0.00	0.46	0.01	0.46	-0.15	0.40	0.37	0.46
Bisexual	1.41***	0.32	1.31***	0.31	1.16***	0.31	1.12***	0.28
Other or multiple identities	0.55	0.35	0.46	0.33	0.31	0.34	0.30	0.33
Gender (man or trans man)								
Woman or trans woman	0.48**	0.16	0.32*	0.15	0.25	0.15	0.29*	0.14
Other gender identity	-0.24	0.92	-0.78	0.66	-0.90	0.65	-1.34	0.73
Couple type (different gender)								
Same gender	0.18	0.43	0.09	0.37	0.16	0.37	-0.35	0.46
Nonbinary	1.25*	0.61	0.92	0.50	0.99	0.51	0.97	0.64
Married (cohabiting)	-0.56**	0.18	-0.40*	0.19	-0.41*	0.18	-0.02	0.16
Age	-0.02	0.01	-0.02	0.01	-0.02	0.01	-0.02*	0.01
Household children <18 (0)								
One	0.20	0.19	0.19	0.19	0.19	0.19	0.09	0.17
Two or more	0.34*	0.16	0.46**	0.15	0.44**	0.15	0.28	0.16

	Model 1		Model 2		Model 3		Model 4	
Interracial couple (same race)	0.36	(0.19)	0.40*	(0.18)	0.37*	(0.18)	0.34*	(0.16)
Foreign born (native born)	-0.10	(0.23)	-0.23	(0.25)	-0.18	(0.24)	-0.18	(0.21)
Education (high school or less)								
Some college	0.04	(0.21)	-0.12	(0.21)	-0.17	(0.21)	-0.07	(0.20)
Bachelor's degree +	0.37	(0.21)	0.15	(0.21)	0.07	(0.22)	0.34	(0.23)
Employment (full-time)								
Part-time	0.09	(0.21)	0.00	(0.21)	-0.02	(0.21)	-0.09	(0.20)
Unemployed	0.82**	(0.27)	0.71**	(0.26)	0.69**	(0.26)	0.71*	(0.29)
Cohabitation length	-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.01)	0.00	(0.01)
Work from home							0.40*	(0.16)
Income to poverty ratio							-0.01	(0.02)
Microaggressions							0.90***	(0.15)
Health-care discrimination							0.55***	(0.10)
Community support race							-0.19*	(0.09)
Community support LGB							0.05	(0.08)
Support from partner or spouse							-0.72***	(0.07)
Social support							0.01	(0.07)
Physical health condition							0.26*	(0.12)
Constant	6.47***	(0.41)	5.20***	(0.43)	4.69***	(0.43)	6.03	(0.62)
N	3,309		3,271		3,260		3,178	
F	7.77***		11.13***		11.62***		24.52***	
R^2	0.07		0.12		0.13		0.28	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: Reference category listed in parentheses. Nominal variables reference category proportion is also listed in parentheses. Month of survey included in all models but not shown.

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

Table 6. Ordinary Least Squares Regression Results for Stress Overload

	Stress Overload							
	B	SE	B	SE	B	SE	B	SE
COVID-19 stress	—	—	0.53***	0.06	0.43***	0.06	0.30***	0.05
Racial trauma stress	—	—	—	—	1.32***	0.19	0.89***	0.20
Race-ethnicity (Non-Latina/o/x White)								
Non-Latina/o/x Black	-1.47***	0.50	-1.88***	0.50	-2.52***	0.51	-4.00***	0.47
Non-Latina/o/x Asian	-0.14	0.80	-0.72	0.76	-0.56	0.74	-1.26	0.69
Latina/o/x	-0.93*	0.44	-1.35**	0.46	-1.11*	0.45	-0.95*	0.44
Non-Latina/o/x multirace	-0.89	0.71	-1.40*	0.70	-1.59*	0.70	-1.79*	0.69
Other racial-ethnic identity	-0.33	1.42	-0.26	1.46	-0.18	1.39	-0.62	1.30
Sexual identity (heterosexual)								
Gay or lesbian	1.22	0.96	1.41	0.90	1.04	0.80	1.36	0.76
Bisexual	2.88**	0.87	2.55**	0.90	2.02*	0.81	1.90*	0.75
Other or multiple identities	1.68	0.87	1.43	0.87	0.96	0.87	0.76	0.83
Gender (man or trans man)								
Woman or trans woman	2.16***	0.37	1.65***	0.34	1.42***	0.33	1.65*	0.31
Other gender identity	-0.19	2.48	-1.43	2.02	-1.84	2.11	-2.71	2.31
Couple type (different gender)								
Same gender	-0.69	0.88	-1.18	0.83	-1.13	0.70	-1.19	0.66
Nonbinary	3.91*	1.61	2.89	1.64	3.15	1.71	3.17	1.99
Married (cohabiting)	-1.16*	0.54	-0.64***	0.52	-0.65	0.49	0.13	0.41
Age	-0.07***	0.02	-0.08	0.02	-0.08***	0.02	-0.07***	0.02
Household children <18 (0)								
One	0.69	0.39	0.71*	0.36	0.71	0.37	0.73*	0.35
Two or more	1.34	0.40	1.71***	0.38	1.67***	0.37	1.62***	0.37

Interracial couple (same race)	1.00	0.47	1.08**	0.42	0.95*	0.41	0.72*	0.34
Foreign born (native born)	-0.61	0.54	-0.99	0.60	-0.83	0.56	-0.83	0.50
Education (high school or less)								
Some college	0.72	0.62	0.30	0.55	0.14	0.50	0.44	0.55
Bachelor's degree +	0.22	0.47	-0.43	0.43	-0.75	0.43	0.26	0.51
Employment (full-time)								
Part-time	-0.40	0.49	-0.85	0.45	-0.87	0.46	-0.93*	0.42
Unemployed	0.09	0.48	-0.33	0.45	-0.34	0.42	-0.69	0.43
Cohabitation length	-0.03	0.02	-0.02	0.02	-0.02	0.02	-0.01	0.02
Work from home							-0.16	0.36
Income to poverty ratio							0.01	0.03
Microaggressions							2.77***	0.31
Health-care discrimination							1.21***	0.20
Community support race							-0.34	0.23
Community support LGB							-0.23	0.18
Support from partner or spouse							-0.56***	0.15
Social support							-0.23	0.22
Physical health condition							0.50	0.32
Constant	18.62***	1.13	14.73***	0.02	12.90***	1.01	11.69***	1.49
N	3,269		3,233		3,223		3,143	
F	9.83***		14.94***		17.55***		24.94***	
R^2	0.10		0.18		0.21		0.32	

mary mediator of this association. Thus important suppression appears to be operating. The mediators are important to consider in assessments of race-ethnicity and well-being.

Specifically, having a supportive partner or spouse was protective and associated with significantly lower levels of depression, less loneliness, and lower stress overload. Social support from friends and family was associated with lower levels of anxiety. As microaggressions increased, depression and anxiety levels, loneliness, and stress overload significantly increased. Health-care discrimination was significantly associated with higher depression and anxiety levels, greater loneliness, and elevated stress overload. Working from home was associated with higher depression levels and more loneliness. Community support for racial and ethnic minorities was protective and associated with lower depression levels and less loneliness. Community support for LGB individuals was associated with lower levels of anxiety. Having a physical health condition was associated with higher levels of depression and anxiety and more loneliness.

Testing the exacerbating effect of COVID-19 stress and comorbid racial trauma stress. In ordinary least squares results not shown, we test the interaction of COVID-19 stress and racial trauma stress to examine whether the co-occurrence of these dual sources of stress further exacerbates mental health problems. COVID-19 stress and racial trauma stress do not significantly interact and suggest that each source of stress has a unique association with mental health.

Stratified by race-ethnicity. To further explore the experiences of individuals based on how they are racialized, a series of ordinary least squares regressions were estimated separately according to racial and ethnic group predicting mental health based on COVID-19 stress, racial trauma stress, and demographic and mediator variables. Only the main effects of COVID-19 stress and racial trauma stress are reported in table 7. Overall, among both non-Latina/o/x White and Latina/o/x respondents, higher COVID-19 and racial trauma stress were significantly positively associated with levels of depression and anxiety and stress overload. For non-Latina/o/x White respondents, only

COVID-19 stress was positively associated with greater loneliness. For Latina/o/x respondents, COVID-19 stress and racial trauma stress were significantly positively associated with greater loneliness. Among non-Latina/o/x Black respondents, COVID-19 stress was significantly positively associated with levels of depression, loneliness, and stress overload. Black respondents who reported more racial trauma stress reported less loneliness. Supplemental analyses indicate that racial trauma was linked to higher anxiety for Black respondents when only racial trauma and sociodemographic indicators were included in the model, but not with depressive symptoms or stress overload. The inclusion of COVID-19 stress explained the racial trauma association for anxiety among Black respondents. Among Asian Americans, COVID-19 stress was associated with significantly more loneliness, but no other associations between COVID-19 and racial trauma stress and mental health were evident. Among individuals who identified as non-Latina/o/x multirace higher racial trauma stress was associated with higher levels of anxiety. COVID-19 stress was only associated with more stress overload among non-Latina/o/x multirace respondents.

DISCUSSION

The stress of the pandemic has hit individuals in the United States hard, in particular, those most affected by structural discrimination. Respondents who identify as Latina/o/x, Asian, and multirace, and other or multiple nonheterosexual, and women had elevated COVID-19 related stress than their more privileged counterparts. Simultaneously, the racial trauma associated with the murder of George Floyd and other Black Americans at the hands of police was associated with higher stress for Black and non-Latina/o/x multirace respondents, bisexual, and other or multiple nonheterosexual respondents, and women and those having a nonbinary gender identity. The stress of these shared traumas has serious implications.

Even before the pandemic, Black Americans were more likely to experience the death of a loved one, including family members and friends, with serious life course implications including a loss of social support and detri-

Table 7. Race-Ethnic Specific Ordinary Least Squares Regression Models of Mental Health Outcomes

	Non-Latina/o/x White		Non-Latina/o/x Black		Non-Latina/o/x Asian		Latina/o/x		Non-Latina/o/x Multirace	
	B	SE	B	SE	B	SE	B	SE	B	SE
Depression										
COVID-19 stress	0.44***	(0.05)	0.27*	(0.10)	0.25	(0.15)	0.29***	(0.08)	0.01	(0.12)
Racial trauma stress	0.59**	(0.23)	0.10	(0.34)	0.61	(0.45)	1.29***	(0.36)	1.41	(0.74)
Anxiety										
COVID-19 stress	0.39***	(0.05)	0.13	(0.08)	0.16	(0.12)	0.25**	(0.08)	−0.13	(0.12)
Racial trauma stress	0.73***	(0.19)	0.46	(0.30)	0.15	(0.35)	1.26**	(0.38)	1.17*	(0.57)
Loneliness										
COVID-19 stress	0.10***	(0.03)	0.18**	(0.05)	0.13*	(0.06)	0.10**	(0.04)	0.003	(0.06)
Racial trauma stress	0.12	(0.11)	−0.39*	(0.18)	0.01	(0.25)	0.39*	(0.18)	0.51	(0.32)
Stress overload										
COVID-19 stress	0.38***	(0.06)	0.31*	(0.13)	0.15	(0.18)	0.18*	(0.09)	0.28*	(0.12)
Racial trauma stress	0.90***	(0.23)	0.07	(0.37)	1.04	(0.72)	0.99*	(0.47)	0.96	(0.60)
N	2,247		336		209		585		206	

Source: Authors' calculations based on Kamp Dush and Manning 2022.

Note: All models included sexual identity, gender, couple type, marital status, age, household children, interracial couple, foreign born, education, employment, month of survey, cohabitation length, working from home, income to poverty ratio, microaggressions, health-care discrimination, community support race, community support LGB, support from partner or spouse, social support, and physical health condition.

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

ments for health and well-being (Umberson 2017; Stroebe, Schut, and Stroebe 2007). This disparity has been exacerbated during the pandemic. In Connecticut, mortality increased by 74 percent for Black and 65 percent for Latina/o/x individuals versus 30 percent for non-Latina/o/x Whites (Laurencin et al. 2021). The bereavement of Black and Latina/o/x families occurred in the context of heightened risk of COVID-19 exposure and financial stress due to higher risk of unemployment (Bokun et al. 2020; Parolin and Wimer 2020; Golestaneh et al. 2020). It also occurred in the context of racial trauma, as our evidence shows.

The cascade of stress among Black and Latina/o/x respondents suggests their compromised mental health relative to that of White respondents, who had a lower risk of COVID-19 stress and racial trauma stress given popular theories such as the Risk and Resilience in Family Well-Being during the COVID-19 Pandemic Model (Prime, Wade, and Browne 2020) and Minority Stress Model (Meyer 1995; Meyer and Frost 2013). Yet, our analyses align with the Black Advantage Vision (Pattillo 2021) show a mental health advantage for respondents racialized as Black (for all mental health outcomes) and Latina/o/x (for depression and stress overload) that is consistent with research prior to the pandemic (Thomas Tobin et al. 2020; Erving, Thomas, and Frazier 2018; Barnes and Bates 2017; Calzada et al. 2020; Alegría et al. 2008), even with the inclusion of stress. COVID-19 and racial trauma stress were both associated with elevated levels of depression and anxiety, more loneliness, and more stress overload, net of demographic and mediator controls. But Black and Latina/o/x individuals reported significantly lower depression levels and less stress overload than White individuals, and Black individuals also reported significantly less anxiety and loneliness than White individuals. Multirace individuals also reported significantly less stress overload and anxiety than White individuals.

The ability to maintain mental health in the face of serious adversity, such as the stress of COVID-19 and racial trauma, is an indication of some form of elevated resilience (Keyes 2009) or even a Black advantage (Pattillo 2021). Yet Chalandra Bryant, Leslie Anderson, and Max-

ine Notice (2022, 19) argue that promoting "resilience" without acknowledging the chronic adversities and marginalizing contextual factors that result from structural racism and discrimination ignores the negative toll to the body of this "unwavering commitment to succeed." We included several significant covariates of COVID-19 stress, racial trauma stress, and mediators (such as microaggressions, discrimination, support from their partner ot spouse, and physical health conditions) in the model, and yet the magnitude of the advantage between Black, Latina/o/x, and multirace respondents and White respondents persisted. Our study includes only a narrow scope of potentially important indicators of resilience as a process for the Black, Latina/o/x, and multirace population. Corey Keyes (2009) suggests that religion, racial socialization, and group identification may be important factors underlying this advantage. In particular, racial socialization (Hughes et al. 2006) and identification with one's race (Neblett, Shelton, and Sellers 2004) grounded in the family of origin is a compelling mechanism for future research. Yet research on resilience needs to move beyond the dichotomy of resilience as a positive or negative and examine resilience as a process, particularly if the full implications of structural racism and cis-heterosexism are to be understood. As Chalandra Bryant, Leslie Anderson, and Maxine Notice (2022) highlight, resilience can be both a negative and a positive for health outcomes, and further research is needed to understand the full picture of the experience of individuals who were not racialized as White during the pandemic.

Respondents with other or multiple sexual identities reported significantly higher COVID-19 and racial trauma stress than heterosexual individuals, and bisexual respondents reported significantly more racial trauma stress than heterosexual individuals. Further, even after controlling for COVID-19 and racial trauma stress, demographic controls, and mediators, bisexual respondents reported elevated depression, anxiety, loneliness and stress overload. Respondents with other or multiple sexual identities reported more depressive symptoms. This is consistent with pre-pandemic work indicating that sexual minorities experience

greater stress and mental health problems due to discrimination and structural heterosexism (Meyer 2003; White, Sepúlveda, and Patterson 2020). Our results suggest that gay and lesbian respondents fared as well as heterosexual respondents during the pandemic but individuals with bisexual, multiple or other sexual minorities have suffered disproportionately during the pandemic relative to their heterosexual counterparts. No narrative relates sexual minority responses to the pandemic. Perhaps the lack of access to families of choice and a lack of support from religious institutions (White, Sepúlveda, and Patterson 2020), and the lack of sexual identity socialization from the family of origin (Bregman et al. 2013) are potential mechanisms underlying the mental health disparities we observed. Although LGBTQI+ acceptance has grown in the United States, microaggressions and discrimination are still rampant for sexual minorities, and structural heterosexism and monosexism—the privileging of attraction to a single gender—continues to undermine sexual minority health (White, Sepúlveda, and Patterson 2020; Roberts, Horne, and Hoyt 2015).

The COVID-19 pandemic "shecession" not only has resulted in a loss of jobs for women (Gupta 2020; Alon et al. 2021), but also is linked to higher COVID-19 and racial trauma stress, anxious symptoms, and increased loneliness and stress overload for women, even after accounting for a roster of potential explanatory factors relative to men. The crisis for women has been highlighted in the popular press—the New York Times even set up a Primal Scream line for mothers to vent their pandemic frustration (Grose 2021). Our results join a growing body of research that suggests women experience elevated mental health problems and stress during the pandemic relative to men (Reading Turchioe et al. 2021; Park et al. 2020; Almeida et al. 2020). An increased and gendered burden of care (Power 2020; Calarco et al. 2021; Calarco et al. 2020) combined with higher unemployment (Alon et al. 2021) has exposed women to psychological distress. The potential for long-term negative consequences of the pandemic for women's career and family responsibilities is alarming. That said, women exhibited elevated internalizing mental health symptoms such as depression and anxiety relative to men even before the pandemic (Rosenfield and Mouzon 2013). The continued gendered division of labor even as women's labor-force participation grew has led some to suggest that the gender revolution has stalled (England 2010); these results support that supposition.

In all mediator models, social support emerged as key buffers of poorer mental health. Individuals who reported more support from their partner or spouse reported less depression, less loneliness, and less stress overload. Individuals who reported more social support from friends and family reported less anxiety. When individuals perceived their community to be a good place to live for racial and ethnic minorities, they reported less depression and less loneliness. These findings highlight the importance of social relationships and connectedness for health and well-being, similar to the findings focusing on social ties and health behaviors in Courtney Page-Tan, Summer Marion, and Daniel Aldrich's article in this issue (2022). Of course, these models were cross-sectional, and it is also likely that individuals with elevated mental health problems were more likely to receive social support. Future longitudinal research is needed to disentangle the direction of causality in these associations.

Limitations. Although this study provides new understandings of how the experiences during the first year of the COVID-19 pandemic were associated with well-being, it has limitations. The most significant is the cross-sectional design that prevents us from causal analysis and determining whether racial-ethnic and sexual minority patterns and levels of mental health observed during the pandemic were present before the pandemic. We are unable to identify causal direction in our study, and cannot examine pre to post-pandemic change in mental health. Our study is also limited to individuals in couples. Single individuals tend to be even more stressed than coupled individuals (Ta et al. 2017). Additional research on the experience of being single during the pandemic is warranted. The measure of racial trauma in this study is based on a single item related to the murder of George Floyd. Future research

should capture racial trauma more broadly, particularly for Asian and Asian Americans who experienced profound increases in discrimination during the pandemic (Jeung et al. 2021). We also focused exclusively on stress stemming from a health risk perspective of becoming infected by COVID-19. There certainly are additional stressful domains related to COVID-19 that are worth examining in future research such as stress related to work during the pandemic (Manning and Kamp Dush 2022). Further, we accounted for multiple mediators in our analyses, but our indicators may be inadequate and require more refined measurement. Future work should examine a broader and richer set of measures that may tap into multiple sources of structural and systematic racism, sexism and heterosexism.

In conclusion, the social impact of the COVID-19 pandemic and the accompanying racial trauma could have implications years into the future. The toll of acute stress on the body is well documented (Brotman, Golden, and Wittstein 2007; Yaribeygi et al. 2017), and with regard to the length of the pandemic and the seemingly never-ending racial trauma, these stressors have been chronic. Indeed, the mental health disparities we identified are not new. Future research needs to identify the mechanisms through which individuals particularly affected by structural discrimination, including non-White, nonheterosexual, and women and gender nonbinary individuals, were susceptible to and victims of the pandemic. One place to start would be identifying policies, interventions, and prevention efforts that could reduce or exacerbate the effects of historically based and ongoing structural racism, heterosexism, monosexism, and sexism.

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