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Title

“Constant Stress Has Become the New Normal”: Stress and Anxiety Inequalities among U.S. College Students in the Time of COVID-19

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Abstract

Purpose: To document young adults' perceived stress and anxiety in a diverse sample of college students across the United States (U.S.) during the COVID-19 pandemic.

Methods: We recruited, via Instagram, a sample of full-time college students ages 18-22 from across the U.S. We surveyed them in April (baseline; $N = 707$; mean age = 20.0, $SD = 1.3$) and July (follow-up) 2020. This study presents overall levels of perceived stress and general anxiety symptoms, and inequalities across each of these outcomes by gender, sexual orientation, race/ethnicity, and household income. We also explore potential explanations for these health issues by analyzing baseline qualitative data.

Results: All students, on average, were suffering from perceived stress and anxiety, with especially high levels in April. We also identified inequalities in college student mental well-being, particularly by gender identity and sexual orientation. Women reported worse well-being compared to men; transgender and gender diverse and sexual minority youth reported worse outcomes than their cis-gender, heterosexual peers at both time points. Qualitative data illustrate how the COVID-19 pandemic has generated educational, economic, and environmental stressors that are affecting college students' well-being.

Conclusions: As colleges and universities think about how to manage and mitigate the infectious disease dimensions of COVID-19 among their student populations, they must also consider who is most at risk for increased stress and anxiety during the pandemic.

Keywords: adolescents, anxiety, COVID-19, health equity, mental health, stress

Implications and Contributions: This mixed method study documents perceived stress and anxiety in a diverse sample of young adult college students across the United States at two time points during the COVID-19 pandemic. We also report inequalities in students' well-being, particularly by gender identity and sexual orientation.

“Constant Stress has Become the New Normal”: Stress and Anxiety Inequalities among U.S. College Students in the Time of COVID-19

Before the 2019 novel coronavirus (COVID-19) pandemic, stress was already a pervasive challenge to young adult college students' well-being: 65.7% of college students reported “overwhelming anxiety” and 58.7% reported “more than average” or “tremendous” stress in the previous year [1]. Given the U.S.'s interlocking systems of oppression (i.e., sexism, racism, heterosexism) [2] that disadvantage youth development [3], preexisting disproportionate levels of well-being among college students are unsurprising yet concerning. For instance, anxiety is more common among women than men [4], including in college samples [5]. Transgender and gender diverse (TGD) students report higher anxiety symptoms than cisgender students [5,6], and sexual minority youth have markedly higher anxiety [5] and perceived stress [7] than their heterosexual peers, often stemming from interpersonal and institutional discrimination [8]. There are also well-documented mental health disparities by socioeconomic position (SEP), such that lower-SEP students have a significantly higher average burden of anxiety than higher-SEP students [9].

Now, college students are facing a global pandemic, and their experiences may differ by identity. Structural inequalities, including by race/ethnicity and SEP [10–13], have shown devastating inequalities in COVID-19 exposure, morbidity, and mortality. The Movement for Black Lives protests also heightened awareness of racial inequalities [14]. Extended loss of college-based social support and other structural barriers to mental health services could particularly impact the mental health of sexual minority and TGD youth [15].

There is an urgent need to study the psychological well-being of young people during the COVID-19 pandemic, especially among vulnerable groups [16]. This multi-method, exploratory study documents young adults' perceived stress and anxiety symptoms in a diverse sample of college students in the United States (U.S.) during the COVID-19 pandemic. We examine inequalities in anxiety and stress across gender, sexual orientation, race/ethnicity, and income. Furthermore, qualitative data illustrate

students' experiences, which may help inform the allocation of resources, interventions, and services for college students grappling with the pandemic's long reach.

Methods

Participants and Procedure

Young adult full-time college students in the U.S. were recruited through targeted advertising on Instagram (age range: 18-22 years), an effective strategy to reach diverse youth [17,18]. As described in detail elsewhere [19], 1,331 non-duplicated individuals completed the screening questionnaire. Most (n=1,225, 92.0%) qualified and consented. Participants completed the survey via Qualtrics from April 25-30, 2020 and received a \$10 gift card. Our final analytic sample (N=707) had similar demographics to those of full-time college students nationally [19]. The second survey was conducted via Qualtrics from July 5-31, 2020, and participants (n=544) received a \$5 gift card upon completion. The Fordham University Institutional Review Board approved the study.

The sample included students (mean age=20.0; standard deviation(SD)=1.3) from 374 U.S. college campuses. Most identified as women (61.0%); the rest were men (34.4%) or another gender identity (4.6%), including transgender, gender non-binary, or genderqueer. For sexual orientation, 71.2% of students identified as heterosexual, 12.6% bisexual, 6.8% gay or lesbian, and 9.4% reported another sexual orientation. Using pre-COVID-19 household income, 12.6% of students' families earned less than \$26,000/year, which is approximately the federal poverty line (FPL) for a family of four in 2020. Another 21.2% lived in households under \$54,000/year (approximately 200% the FPL), 28.2% under \$100,000; the rest of the students came from households earning at least \$100,000 but less than \$250,000 (32.2%) or \$250,000 or more (5.8%) per year. The sample was 54.3% White, 20.4% Asian/Asian American or Pacific Islander, 8.9% Hispanic/Latinx, 5.2% Black/African American, 1.1% Middle Eastern/North African, and 10.1% mixed race/ethnicity (Table 1).

Measures

The first question of the April survey asked participants to describe how the COVID-19 pandemic affects them personally. We analyzed these open-ended responses using a grounded theory approach [20],

with a first round of open coding of emergent themes by Authors 1-2 and the qualitative research manager, focusing on the content [21], then a round of focused coding, and consolidating themes and sample quotes into a codebook. We then reviewed the preliminary codebook with Author 5 and two other research assistants. Two team members independently coded all responses, and disagreements were resolved by committee. Illustrative quotes were selected from responses coded as related to emotional distress and/or mental health. The selected quotes were most representative of similarly coded responses and contained enough detail. The rest of the survey focused on quantitative sociodemographic questions and measures to assess health and well-being commonly used in young adult and college samples.

We examined two outcomes, measured at baseline (April 2020) and follow-up (July 2020). The 10-item Perceived Stress Scale (PSS) [22] has been used with college student samples and is psychometrically superior to the 14-item and 4-item versions [23]. Items assessed frequency of experiences such as “felt nervous and stressed” and “felt that things were going your way” (reverse coded). Answer choices are: never (0), almost never (1), sometimes (2), fairly often (3), and very often (4). However, an error occurred in the April survey such that participants did not receive the “sometimes” option in the baseline survey. Therefore, we assigned never to 0, almost never to 1, fairly often to 3, and very often to 4, such that the cumulative scale would still range from 0-40 (and align with the correct version used at follow-up ($\alpha=.86$ at baseline; $\alpha=.88$ at follow-up)). As a sensitivity check, we rescaled baseline answer choices as (0=0) (1=1.333) (2=2.66) (3=4), to ensure that results were robust to this coding error. Assessing the psychometric properties of the PSS-10 in college students [24] confirmed both the validity and reliability ($\alpha=.89$) of the scale in this population.

The Generalized Anxiety Scale (GAD-7) assesses generalized anxiety disorder symptoms [25], with good validity and reliability in college samples [26]. Participants answered seven questions about symptoms in the past month including “feeling nervous, anxious, or on edge” and “trouble relaxing” on a scale from 0 (not at all) to 3 (severely, it bothered me a lot; $\alpha=.92$ at baseline; $\alpha=.93$ at follow-up). Scores can range from 0-21, with 5 indicating mild anxiety, 10 indicating moderate anxiety, and 15 or above indicating severe anxiety [25]. A sample of college students [27] confirmed validity and reliability

($\alpha=.90$) of the GAD-7 in this population. Prior to data analyses, all outcome data were inspected for outliers and normality. Indices of skewness and kurtosis were within normal limits.

The four sociodemographic variables were gender, sexual orientation, race/ethnicity, and income. We examined three gender groups: men, women, and TGD. We also examined two sexual identity groups (heterosexual or sexual orientation minority), five racial/ethnic groups (White, Black/African American, Asian/Asian American or Pacific Islander, Hispanic/Latinx, and mixed race/ethnicity); we dropped Middle Eastern/North African participants from analyses by race/ethnicity due to small sample size, $n=8$), and three income groups (i.e., lower-income, with annual household income $< \$54,000$; middle-income ($\geq \$54,000$ and $< \$100,000$), and higher-income ($\geq \$100,000$)).

Analysis

Quantitative analyses were conducted in Stata 14 using t-tests (for binary independent variables) and ANOVA (for categorical independent variables) with Bonferroni multiple comparison tests to identify statistically significant pairwise differences. We also conducted multivariable linear regressions to examine how multiple sociodemographic predictors together influenced the outcome variables of interest, and tested models with interactions between pairs of independent variables (e.g., gender and income) to examine intersecting identities. Finally, we ran a multiple linear regression to examine if sociodemographic factors predicted changes in perceived stress and anxiety from baseline to follow-up.

Results

The mean (M) GAD-7 score in this sample at baseline was 10.49, with a SD of 5.95; the PSS mean was 22.72 (SD = 9.00). Sensitivity tests for all analyses described below were robust to different versions of coding the PSS.

In response to the open-ended item, over one-third of participants ($n=252$; 35.6%) described experiencing emotional distress due to the COVID-19 pandemic and 27 participants (3.8%) described how the COVID-19 pandemic had adversely affected their mental health specifically in reference to one or more mental health disorders (most commonly, anxiety; $n=13$) and/or access to mental health

resources. One student described, “Constant stress has become the new normal.” (White, man, higher-income, heterosexual).

Qualitative responses provide insight into some of ways the COVID-19 pandemic has affected college students’ well-being, with many students describing specific stressors within their shelter-in-place environments, such as a lack of access to technology (e.g., “I don’t have stable internet at home”) and quiet places to work/study (e.g., “ [my siblings] do not give me enough quiet time for my classes”). Many young adults described multiple influences on psychological well-being, including academic, financial, and social stressors.

Group Differences in Spring 2020

Means, standard deviations, and statistically significant group differences are in Tables 2-3. Women and TGD students had higher perceived stress and anxiety symptoms than men, and students who identified as sexual minorities reported more perceived stress and anxiety than heterosexual youth. Qualitative analyses highlight potential sources of these differences. In particular, several women described added caretaking responsibilities upon returning home when their college closed: “As a daughter of immigrants, moving home is treated as a vacation by my parents, so I am tasked with several home duties and taking care of my siblings.” (Asian, woman, higher-income, heterosexual).

Another woman (White, lower-income, heterosexual) described experiencing financial, environmental, and caretaking responsibilities, which cumulatively contributed to increased stress:

Not only was I laid off from my job, but I had to move overseas to my military family's station with only one backpack. Now I'm paying for the school to store my belongings and pay full tuition without a job or bedroom. I'm sleeping on a floor, babysitting my siblings full time on top of 15.5 units.

School closures may have also been particularly difficult for lesbian, gay, bisexual, transgender, queer and/or questioning (LGBTQ) young adults, as students described changes to or loss of access to mental health services (e.g., on-campus counseling centers) and/or peer support. For instance, as one sophomore (multiracial, woman, middle-income, lesbian) describes: “As a member of the LGBT+

community, it was especially hard to leave all my support at school and come back to a homophobic household where I have to remain in the closet.” Another student (White, genderqueer, middle-income, asexual) explained: “I also lost access to therapy by moving back home (across state lines), and my mental and physical health have been rapidly declining.”

Next, we examined differences by race/ethnicity and family income. Across all racial/ethnic groups, the only statistically significant difference in well-being to emerge was that Asian students had lower anxiety symptoms than White students. However, we did find group differences by income. Specifically, lower-income students reported marginally higher anxiety and stress than higher-income students ($p < .10$). From the qualitative analysis, we observed that several students from lower-income households reported that their income was inadequate to meet their needs, with several students referring to the economic impact payment (i.e., stimulus check) that was distributed to individuals or families who filed a 2019 federal tax return. For instance, one student describes: “My family is struggling with money because the stimulus check is not enough for six people. We do have some outside support from friends and family but they are struggling as well.” (Asian, man, heterosexual). A senior (Latinx, man, lower-income, gay) said, “my family's finances are the same in 2008 recession, only this time I am aware and the university is refusing to refund immediately. My family cannot receive stimulus checks, either so there is a lot of financial stress and worry.” Another student (Asian, woman, lower-income, heterosexual) similarly described her family income as inadequate during this time:

I currently have no income coming in and it has been really rough for my family, as I live in a single parent household where annual income is [$< \$15,000$]. My mom also currently has no job at the moment too due the closure of her work due to the virus. It's rough trying to pay for rent at home and my upcoming apartment rent with no work. We're having to result to our [sic] savings which should've been for my and my younger sister's college tuition.

Students' qualitative responses also provided illustrative examples of how *changes* in individual and familial finances due to the pandemic were affecting their well-being. Some reported loss of personal income, such as one student (Latinx, woman, lower-income, heterosexual) who said, “I'm extra broke and

depressed, the job I thought I was going to start is no longer available to me,” whereas others reported benefiting from changes caused by the pandemic (e.g., “I am lucky and grateful to not be affected economically much (in fact its helped me save money on rent)” [Asian, man, higher-income, heterosexual]).

The regression models (Table 4) supported the unique effects of gender, sexual orientation, race/ethnicity, and income on both perceived stress and anxiety, aligning with the mean differences reported in the ANOVA results. There were no statistically significant interactions.

Follow-Up Quantitative Findings From Summer 2020

Of the 707 students in our baseline sample (April), 77% completed the follow-up survey in July (n=543). The longitudinal sample did not differ on baseline levels of stress or anxiety, however, attrition analyses show that the longitudinal sample included statistically significantly fewer men, Black students, and those from higher-income homes. Despite this nonrandom attrition among groups with lower baseline stress and anxiety (i.e., men, higher-income students), both the mean PSS (M=20.36, SD=8.06) and GAD-7 (M=9.85, SD=6.04) scores were lower in July (compared to April). Similar to baseline, we found group differences by gender and sexual orientation for both outcomes (Tables 2-3).

In the longitudinal analysis (Table 4), we found that women had significantly higher PSS and GAD-7 scores in July, controlling for symptoms of stress or anxiety in April, compared to men. TGD and sexual minority students reported significantly higher GAD-7 scores from April to July than men and heterosexual students, respectively. There were no statistically significant longitudinal changes in perceived stress or anxiety symptoms by race/ethnicity or income. However, across all sociodemographic groups examined in this study, students who identified as Black (n=21) and mixed race/ethnicity (n=54) were the only groups of students to show increased anxiety from April to July (see Table 3), and Black students showed marginally higher GAD-7 scores than White and Asian students. These results need to be interpreted with caution given limited sample sizes.

Discussion

Consistent with extant COVID-19 mental health studies, we found that college students, on average, are suffering from moderate levels of perceived stress and anxiety during the pandemic. Further, we expanded on previous work by identifying inequalities in college student well-being during the pandemic, by gender identity, sexual orientation, and income. In particular, we found that women reported worse well-being, compared to men. Although gender differences in anxiety are already well-documented [9], there are mixed findings in terms of perceived stress [28–30]. As our qualitative analysis suggests, family expectations and social norms may have disproportionately increased women's responsibilities during the pandemic [31], potentially increasing students' daily stressors. This hypothesis aligns with new longitudinal data showing that women experienced greater increases in perceived stress during the pandemic, compared to men [32].

Additionally, TGD and sexual minority participants reported worse well-being than their cisgender, heterosexual peers, aligned with trends before the pandemic [5,7,33–35]. These findings underscore that LGBTQ youth may be especially vulnerable during the COVID-19 pandemic, as youth lost access to safety nets (e.g., mental health services), were separated from key social support networks on campus, and may have found themselves in uncomfortable (and potentially dangerous) shelter-in-place situations due to unsupportive household members [36]. Importantly, while overall levels of stress and anxiety decreased for most study participants during the summer (when many were not taking classes, and when perhaps the COVID-19 pandemic had become more of an expected reality), levels remained relatively high for LGBTQ students, and both TGD and sexual minority identities were associated with *increases* in generalized anxiety symptoms over time. Schools could consider forming online groups and/or clubs so that LGBTQ students can continue to receive support and resources during times of interruption, both during remote schooling and during school breaks [37]. In addition, educating faculty and students about inclusivity and the unique challenges that LGBTQ students face, both during and outside of the COVID-19 pandemic, can help to ensure positive online and in-person interactions [37].

Aligned with pre-pandemic research [38], White youth in our sample had the highest levels of perceived stress and general anxiety symptoms in April. However, Black and multiracial students had the

highest scores on both measures in July. These trends are likely linked to both the disproportionate health and economic effects of the pandemic on people of color [39], as well as the simultaneous stressors related to structural racism, specifically with increased national attention on police violence in summer 2020. While Black American college youth's activism has been previously linked to positive mental health [14], it may be that the activism spurred by the newest wave of national protests present unique stressors in terms of the COVID-19 context as well as the increased backlash to the Black Lives Matter movement [40]. Meanwhile, multiracial youth may be experiencing heightened, stress-inducing questions about ethnic-racial belonging amidst the national conversation about anti-Black racism [41]. Importantly, the COVID-19-triggered economic downturn may further amplify long-term racial/ethnic and income inequalities that were not yet detected in April 2020, as was seen in the aftermath of the 2008 Great Recession [42–44].

Surprisingly, there were few income group differences in our sample. This could be due to the way income was measured in our sample, which was based on self-reported pre-pandemic family income (and therefore does not account for pandemic-related job loss). Further, our measure of income does not take into account a participant's geographical location nor family size, which could shape youth's level of financial security. It is vital to assess longitudinal income and mental health data to help uncover “sleeper effects” (i.e., pandemic-related stress that is not immediately observed until some later period of development) and “sensitizing effects” (i.e., pandemic experiences may lower the threshold for tolerating later stress), which may trigger psychopathology among vulnerable youth in the future [45]. As our qualitative data illustrate, there is considerable variability in how the COVID-19 pandemic has affected students' financial situations and how these changes subsequently affect students' well-being. As the pandemic persists and its economic ramifications accumulate, financial stressors for students may increase (e.g., for those currently relying on savings, unemployment income, or financial support from friends/family), which may contribute to later changes in students' well-being.

We note several other limitations to our study. First, our study began in April 2020, during the first peak of the COVID-19 pandemic, so we have no data on pre-pandemic well-being, preventing us

from determining if the inequalities we observed may have existed pre-COVID-19. Instead, we can only compare to research done by others. For example, compared to a national sample of 43,632 college students using the GAD, cisgender heterosexual students' average anxiety was 6.2 while TGD youth's average anxiety was 10.2, gay/lesbian students was 7.6 and bisexual students was 9.9 [5]; in our sample, the anxiety levels are higher for all groups but the gaps widened for cisgender women and TGD students compared to men, and for sexual minority students compared to heterosexual students. These suggest widening inequalities may be emerging due to COVID-19. Future research using prospective, longitudinal data should continue to examine how the pandemic exacerbates disparities over time and examine (e.g., using a MAIHDA approach) how the intersections of one's social identities differentially impact mental health.

There are additional limitations in our methods. While our sample is diverse in many domains, it is not necessarily representative of all college students. This may be in part due to our sampling method, Instagram. Even though pre-pandemic data shows that at least 80% of college students are on Instagram [46], it is not clear how college student Instagram users differ from non-college student Instagram users. We also restricted our sample to only on full-time, young adult college students. Additionally, due to limited statistical power, we also did not split out gay/lesbian and bisexual students. However, given increasing knowledge about the distinct mental health experiences of bisexual students [47], we encourage future researchers to take this on. There was an error in how the PSS items were asked in the baseline survey, but our analyses are robust to this error. Finally, in our qualitative data, 36.6% of students *explicitly* mentioned emotional distress, mental health issues, or both when asked how the COVID-19 pandemic affects them personally. This is likely an underestimate of students who experienced reduced psychological well-being, given that participants were not explicitly prompted to discuss this.

Conclusion

This study provides novel data about overall perceived stress and anxiety levels in the time of COVID-19 among college students ages 18-22, who are in the age range when many lifelong mental

health issues often emerge. Many of the interventions that emerged to reduce COVID-19 transmission (e.g., closing college campuses to avoid in-person contact, shelter-in-place policies) can affect mental health outcomes and also reduce access to resources and care. As we continue through this new COVID-19 era, multi-pronged approaches that address COVID-19 transmission, morbidity, and mortality while simultaneously minimizing creating other health problems are essential.

Article In Press

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Table 1. Study sample demographic characteristics (N=707).

Measure	%	N
College year in April 2020		
First year	27.7%	196
Sophomore	26.3%	186
Junior	22.8%	161
Senior	22.4%	158
Other	0.8%	6
Race/ethnicity ^{1,2}		
White	54.3%	384
Black/African American	5.2%	37
Asian/Asian American or Pacific Islander	20.4%	144
Middle Eastern/North African	1.1%	8
Hispanic/Latinx	8.9%	63
Mixed race/ethnicity	10.1%	71
Gender ¹		
Woman	61.0%	431
Man	34.4%	243
Non-binary, genderqueer, or gender non-conforming	2.8%	20
Trans man	1.4%	10
Different identity	0.4%	3
Sexual orientation ¹		
Heterosexual or straight	71.2%	503
Bisexual	12.6%	89
Gay or lesbian	6.8%	48
Queer	2.4%	17
Questioning	3.4%	24
Pansexual	2.1%	15
Asexual	1.1%	8
Another sexual identity	0.4%	3
Family's typical annual household income (pre-COVID-19)		
Less than \$26,000	12.6%	89
\$26,000 to \$53,399	21.2%	150
\$54,000 to \$99,999	28.2%	199
\$100,000 to \$249,000	32.2%	228
\$250,000 and over	5.8%	41

¹ Students self-identified their race/ethnicity, gender, and sexual orientation and we list the percentages for each answer choice that was endorsed by at least one student. ²Students who reported two or more racial and/or ethnic groups (e.g., Black/African American and Hispanic/Latinx, Black/African American and White, Hispanic/Latinx and White) were coded as mixed race/ethnicity.

Table 2. Group differences in PSS scores at baseline (April) and follow-up (July)

	Baseline	Follow-up
Gender		
a. Men	18.57 (8.47) ^{b***, c***}	16.60 (7.56) ^{b***, c***}
b. Women	24.60 (8.49) ^{a***, c*}	21.90 (7.70) ^{a***}
c. Trans and Gender Diverse (TGD) ¹	28.70 (7.94) ^{a***, b*}	23.97 (7.52) ^{a***}
Sexual Orientation		
a. Heterosexual	21.18 (8.88) ^{b***}	19.18 (7.94) ^{b***}
b. Sexual minority ²	26.50 (8.19) ^{a***}	23.24 (7.64) ^{a***}
Race/ethnicity ³		
a. White	23.26 (8.97) ^{c†}	20.27 (8.09)
b. Black	23.16 (7.72)	20.57 (9.71)
c. Asian	20.90 (8.96) ^{a†}	19.47 (7.63)
d. Hispanic/Latinx	22.75 (8.71)	20.84 (9.00)
e. Mixed race/ethnicity	23.00 (9.62)	22.13 (6.94)
Income		
a. Lower-Income	23.42 (8.90) ^{c†}	20.75 (8.41)
b. Middle-Income	23.46 (8.87) ^{c†}	20.65 (7.65)
c. Higher-Income	21.51 (9.11) ^{a†, b†}	19.73 (8.03)

Note. PSS = Perceived Stress Scale. Alphabetical superscripts show statistically significant differences between groups, at the following levels: *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < 0.10$. (For example, at baseline, the difference between women and men is statistically significant with a $p < .001$, and the difference between women and people who are TGD is marginally significant with a $p < .05$.) ¹TGD includes gender non-binary, genderqueer, and transgender; ²Sexual minority includes bisexual, gay/lesbian, questioning, pansexual, asexual, or another sexual identity; ³Middle Eastern/North African students ($n=8$) were dropped from analyses due to small sample size; mixed race/ethnicity includes all students who reported two or more racial and/or ethnic groups.

Table 3. Group differences in GAD-7 scores at baseline (April) and follow-up (July)

	Baseline	Follow-Up
Gender		
a. Men	7.90 (5.74) ^{b***, c***}	6.46 (5.16) ^{b***, c***}
b. Women	11.68 (5.54) ^{a***, c†}	11.21 (5.68) ^{a***}
c. Trans and Gender Diverse (TGD) ¹	13.88 (6.00) ^{a***, b†}	13.16 (6.75) ^{a***}
Sexual Orientation		
a. Heterosexual	9.49 (5.90) ^{b***}	8.85 (5.83) ^{b***}
b. Sexual minority ²	12.94 (5.33) ^{a***}	12.28 (5.87) ^{a***}
Race/ethnicity ³		
a. White	11.20 (5.83) ^{c***}	10.04 (6.04)
b. Black	9.62 (7.01)	10.95 (7.80)
c. Asian	8.78 (5.92) ^{a***}	8.411 (5.442) ^{e*}
d. Hispanic/Latinx	9.92 (5.45)	9.839 (6.08)
e. Mixed race/ethnicity	10.89 (5.92)	11.389 (6.02) ^{c*}
Income		
a. Lower-Income	11.03 (6.04) ^{c†}	10.398 (6.13)
b. Middle-Income	10.70 (5.77)	9.94 (6.10)
c. Higher-Income	9.83 (5.96) ^{a†}	9.21 (5.87)

Note. GAD-7 = General Anxiety Disorder scale. Alphabetical superscripts show statistically significant differences between groups, at the following levels: *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < 0.10$. (For example, at baseline, the difference between women and men is statistically significant with a $p < .001$, and the difference between women and people who are TGD is marginally significant with a $p < 0.10$.) ¹TGD includes gender non-binary, genderqueer, and transgender; ²Sexual minority includes bisexual, gay/lesbian, questioning, pansexual, asexual, or another sexual identity; ³Middle Eastern/North African students ($n=8$) were dropped from analyses due to small sample size; mixed race/ethnicity includes all students who reported two or more racial and/or ethnic groups.

Table 4. Multiple linear regressions predicting PSS and GAD-7 at baseline (April) and follow-up (July).

	PSS (baseline)	PSS (follow-up)	GAD-7 (baseline)	GAD-7 (follow-up)
Gender ¹				
Women	5.76 (.67)***	2.04(.64)**	3.63 (.44)***	2.42 (.43)***
Trans and Gender Diverse (TGD)	6.87 (1.63)***	1.17(1.37)	3.81 (1.07)***	2.45 (.92)***
Sexual minority ²	3.93 (.73)***	1.19(.37) †	2.49 (.48)***	.97 (.45)*
Race/ethnicity ³ (ref=White)				
Black	.80(1.43)	.40(1.44)	-1.11(.94)	1.58 (.99)
Asian	-2.38(.81)**	.33(.17)	-2.51 (.54)***	-.31 (.48)
Hispanic/Latinx	-.53(1.15)	.51(.95)	-1.39 (.76)†	-.01 (.65)
MENA	2.75(2.96)	.88(2.90)	1.16 (1.95)	.83 (1.97)
Mixed race/ethnicity	-1.06(1.07)	1.36 (.95)	-.84 (.71)	.61 (.65)
Income ⁴				
Lower-Income	1.62(.76)*	.11(.67)	1.25 (.50)*	.38 (.46)
Middle-Income	1.33(.77)†	.04(.69)	.52 (.51)	.08 (.47)
Baseline PSS		.48(.03)***		
Baseline GAD-7				.60 (.03)***

Note. PSS = Perceived Stress Scale; GAD-7 = General Anxiety Disorder scale. *** p < .001, ** p < .01, * p < .05, † p < 0.10. ¹Men were the reference group; TGD includes gender non-binary, genderqueer, and transgender; ²Straight/heterosexual was the reference group; sexual minority includes bisexual, gay/lesbian, questioning, pansexual, asexual, or another sexual identity; ³White was the reference groups; MENA = Middle Eastern/ North African; mixed race/ethnicity includes all students who reported two or more racial and/or ethnic groups; ⁴Higher-Income was the reference group.