NSF RAPID:

Graduate Student Experiences of Support and Stress During the COVID-19 Pandemic

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CONTENTS

OVERVIEW

COVID-19 has rapidly upended graduate students' learning, research, and teaching. Carefully crafted career paths that often require substantial investments by both students and the students' institution have been placed at risk due to limited access to classrooms and labs, disruption in collaboration, increased stress and anxiety, and new caretaking responsibilities. This impact is particularly acute for graduate students with marginalized identities (e.g., Students of Color, low-income students) who are often already struggling with existing inequalities. In the absence of strategies to support graduate students through this pandemic, students may not thrive, and the U.S. may suffer a dramatic decline in the effectiveness of its graduate-level training, resulting in long-term negative impacts on the U.S. scientific knowledge base and the broader U.S. economy.

About **3,500** graduate students

12 U.S. public institutions

Survey: June—July 2020

Focus groups: August 2020

This brief describes the experiences and perspectives of approximately 3,500 graduate students at 12 U.S. public research universities who responded to our survey during June—July 2020. We also include illustrative narrative data from the surveys and initial responses from focus groups of 56 students that were held in August 2020. Focus group results will be released following the completion of data analysis. Data collection occurred following George Floyd's murder and Black Lives Matter activism, as well as during the period in July when U.S. Immigration and Customs Enforcement announced a new rule related to international student enrollment status. As a result, students' stressful experiences could be related to any number of events that were occurring simultaneously with the pandemic.

In both the survey and focus groups, graduate students reported concerning levels of anxiety, depression, and PTSD symptoms. They described economic precarity related to food and housing insecurity and a lack of institutional support. Further, the pandemic's effects may be long-lasting, as many graduate students are planning longer research timelines and time to degree extensions, feel pessimistic about their career prospects, and anticipate career changes. Graduate students who identify as women or trans*/non-binary/genderqueer, international students, and students who are parenting or caretaking reported more negative mental health effects and degree delays. More graduate students who identified as Black or Indigenous reported having relationships with others at high risk for negative outcomes from COVID-19 or having lost someone close to them due to COVID-19. Because students may be experiencing ongoing trauma responses to these combinations of events and experiences, we close with recommendations for graduate student advisors and university administrators based on our findings and drawing on a trauma-informed framework.

Results

Mental Health Status

In general, about one-third of graduate student respondents reported symptoms consistent with a PTSD diagnosis or at least moderate levels of anxiety or depression. More than two-thirds of graduate student respondents reported low well-being. On average, women, trans*/non-binary/genderqueer students, students parenting or caregiving, and students in the humanities reported more negative mental health symptoms. In focus groups and open-ended text comments, graduate students described the negative effects on their mental health from the combination of the pandemic as well as ongoing and exacerbated racism and anti-Blackness.
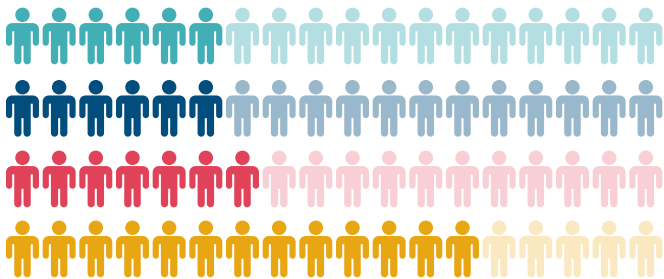
32% Symptoms consistent with PTSD diagnosis (PCL-5)
33% Moderate or higher levels of anxiety (GAD-7)
34% Moderate or higher levels of depression (PHQ-8)
67% Low well-being (WHO-5)

n = 3,335

"

I have never felt so depressed, anxious, and inadequate. Each day I struggle to maintain any level of productivity. I feel like I have no support from my advisor or institution. The graduate school culture feels so toxic that even my peers and I have trouble admitting to each other that we are struggling with productivity because there is so much guilt and anxiety.

- Survey participant

I was in a really bad place, and I'm worried that I'm going to go back to that place in some way. It's not necessarily a COVID thing, but COVID just amplifies everything... I struggled with mental health and anxiety all the time, but I can manage that during normal circumstances.

- Focus group participant

It's kind of complicated in terms of my interactions with faculty during the Black Lives Matter movement, I've faced some pretty intense racism regarding really simple attempts to just get a more diverse representative sample within [my] program. So this is a weird moment for me, where I'm feeling like a great deal of support to do a lot of COVID related research and look at that, and then an entirely different perspective with regards to diversity and equity in the program.

- Focus group participant

The Black Lives Matter movement also was very impactful and emotionally intense - it was complicated to consider COVID and attending protests for Black lives at the same time, and also upsetting to see protests about wearing masks. However, it has also been very good to get away from the department - less microaggressions experienced on a daily basis, but it's been difficult to be productive, and I am often considering leaving the program.

- Survey participant
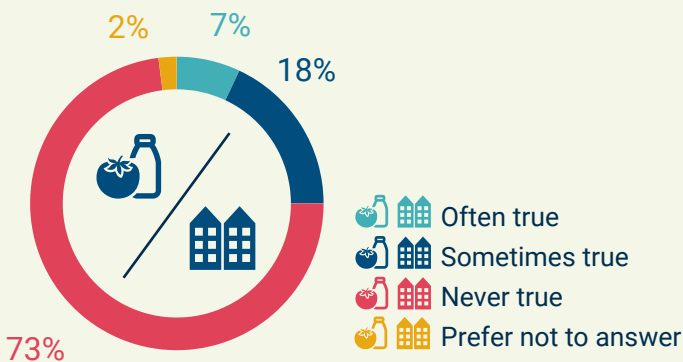
Food and Housing Insecurity

More than one quarter of graduate students indicated some levels of food and/or housing insecurity.

I worried whether my food would run out before I got money to buy more.
n = 3,224

I worried about having secure housing options.
n = 3,220

- 2%
- 7%
- 18%
- 73%

Legend:
- Often true
- Sometimes true
- Never true
- Prefer not to answer

"

My institution is located in the city with the highest cost-of-living in the state, and very few (if any) protections were put in place to ensure anyone, let alone students, had secure housing--or, if housing was secured prior to the switch to remote learning for 2020-21, it is unclear if local companies will let folks out of their leases due to changing conditions. The university does not seem to be cognizant of exactly how expensive it is to live near it, and none of its COVID policies reflect our material reality.

- Survey participant

Being an international student, I used to fund my living expense through on campus job. However, due to loss of that job I often have to ration my food and worry about my housing expense. I am facing difficulties to manage my living expense. I am waiting for University to open in fall so that I can work at campus and manage my living expense.

- Survey participant

Parenting and Caregiving

More than 18% of graduate student respondents indicated they had parenting or caregiving responsibilities. Of those parenting, half were caring for their children themselves most or all of the time.

Do you have substantial parenting or caretaking responsibility?

Yes 18%   **No 82%**

n = 3,604

What has been your main form of child care in the past two months?

50% I am caring for my child(ren) most or all of the time
34% Splitting time with a partner or co-parent
6% Care by another relative (not your partner)
5% Other
3% Child-care center
1% Care from a babysitter

n = 563

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Balancing childcare, with my children doing remote learning, was a major challenge, and if schools do not resume in the fall, I worry that I may have to delay my degree to care/provide educational support for my children.
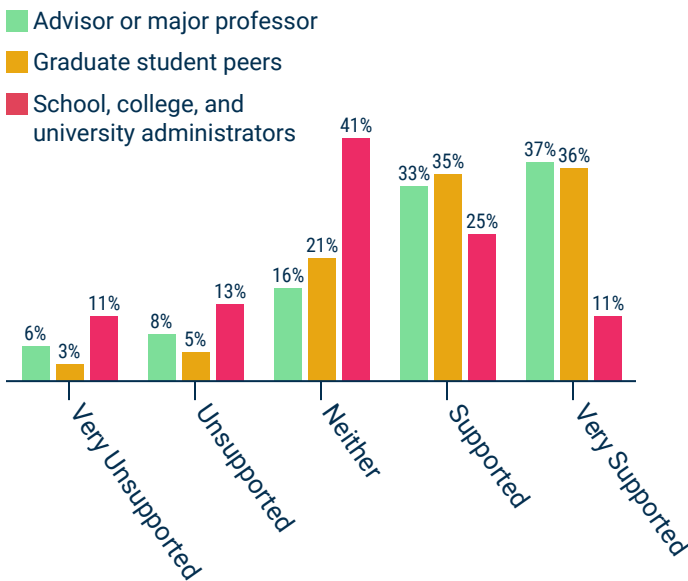
- Survey participant

I was in the same space - physically and mentally - and expected to perform FT work duties and graduate work at my computer all day long while trying to care for my children. The transition to working at home was a huge strain and I was working extra hours just to stay caught up with few resources. It was very stressful.

- Survey participant
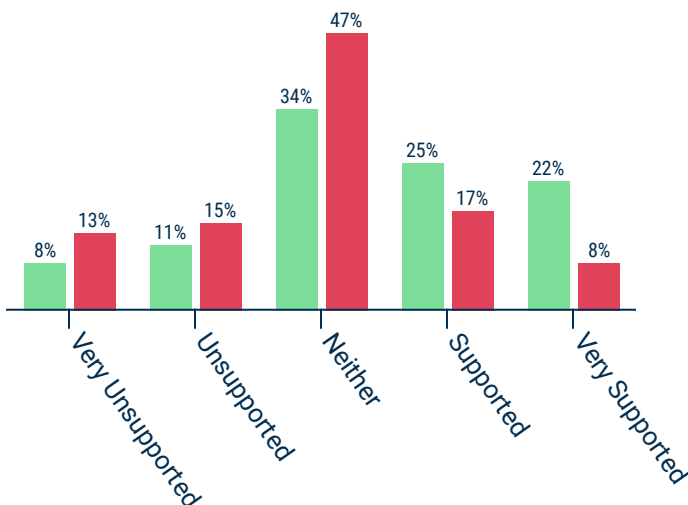
Institutional Support

In general, graduate student respondents reported feeling more support from their advisors or major professors and from their peers than from school, college, or university-level administrators. Graduate students reported feeling more support for their physical and mental health than for their economic well-being.

In terms of your physical and mental health and well-being, how supported have you felt by the following people since March 2020?

Legend:
- 🟩 Advisor or major professor
- 🟧 Graduate student peers
- 🟥 School, college, and university administrators

	Advisor or major professor	Graduate student peers	School, college, and university administrators
Very Unsupported	6%	3%	11%
Unsupported	8%	5%	13%
Neither	16%	21%	41%
Supported	33%	35%	25%
Very Supported	37%	36%	11%

n = 2,581

In terms of your material or economic well-being, how supported have you felt by the following people since March 2020?

	Advisor or major professor	School, college, and university administrators
Very Unsupported	8%	13%
Unsupported	11%	15%
Neither	34%	47%
Supported	25%	17%
Very Supported	22%	8%

n = 2,400

> *This experience really highlights how precarious being a graduate is. You get the worst case option in the question of 'is this person a student or an employee'. If there's an expectation to [give] grace to students because of the situation, we're considered employees being paid a stipend and tuition remission to do work so must get things done 'now' no matter what we're experiencing. If the expectation is that an employee will be given some kind of accommodation because of what is going on, we're not employees entitled to such accommodations as we're students. Short-shrift on both ends, as usual, but exacerbated.*

- Survey participant

> *A handful of faculty in my department set up an unofficial fund to help graduate students in need. My teaching stipend isn't enough to cover at-home internet, and I needed broadband to teach my spring and summer courses. The university offered nothing, so I asked the faculty member who was managing the fund, and she sent me $200 by Venmo with no proof necessary. Without that help, I don't know how I would have been able to teach.*

- Survey participant

COVID-19 Experiences

12% of graduate student respondents indicated they were in a high-risk category for negative outcomes if they contracted COVID-19. In addition, **19% of graduate student** respondents needed to regularly interact with someone who is in a high-risk category. There were disparities in the effects of COVID-19, with **9% of Black student respondents**, **9% of American Indian respondents**, and about **3% of all others** reporting having lost someone close to them to COVID-19.[1]

4%
12%
19%
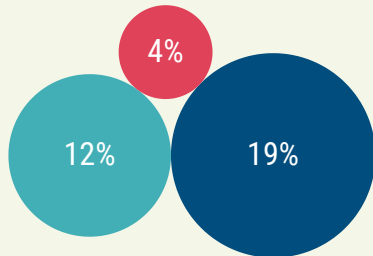
I am in a high-risk category for negative outcomes if I contract COVID-19.

I live with or must regularly interact with someone who is in a high-risk category for negative outcomes if they contract COVID-19.

I have lost someone close to me due to COVID-19.

n = 3,259

Educational Timelines

Expected Change in Degree-related Research Project Timelines

Approximately **30% of graduate students** working on research projects expected to extend their project timelines. More **women (32%)** than **men (27%)** expected to extend their timeline for degree-related research projects.
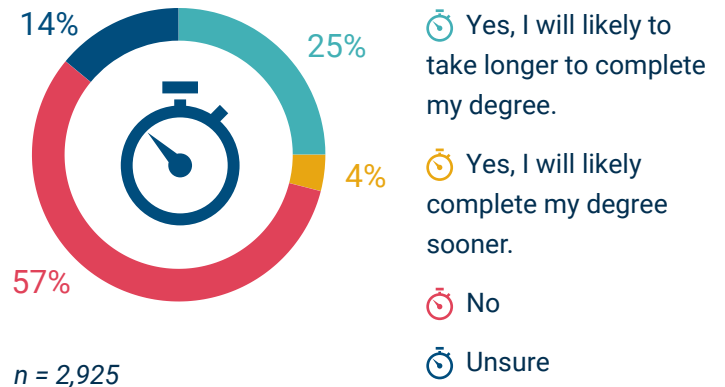

30% I have extended my timeline for project completion.

n = 2,706

Expected Change in Time to Degree

About **25% of graduate student respondents** said they expected it would take longer to complete their degrees, and another **14% were unsure** about timeline adjustment. Of those who expected it to take longer, most anticipated it would take **6 months to 1 year longer**.

Have you adjusted your timeline for degree completion since the pandemic began?

14%
25%
4%
57%

🕐 Yes, I will likely to take longer to complete my degree.

🕐 Yes, I will likely complete my degree sooner.

🕐 No

🕐 Unsure

n = 2,925

"

As a biology student who's working on thesis research and needs to be in the lab, I'm very worried about completing my degree in a timely manner and having financial support during the extended time it will likely take for me to complete my degree. I've already lost over 3 months' time worth of research, and will likely lose more when COVID-19 cases spike again.

- Survey participant

The addition responsibilities of child care have posed a significant challenge to making progress on my degree.

- Survey participant

The inability to collect data, which will result in increased time to degree completion, incurs a severe financial, mental, and emotional hardship.

- Survey participant

Career Planning

Change in Career Plans by Field of Study

On average, **17% of graduate student** respondents said their career plans had changed since the pandemic began. Graduate students in the humanities reported the **highest average change (23%)**.

Has your career plan changed since the pandemic began?

n = 3,139

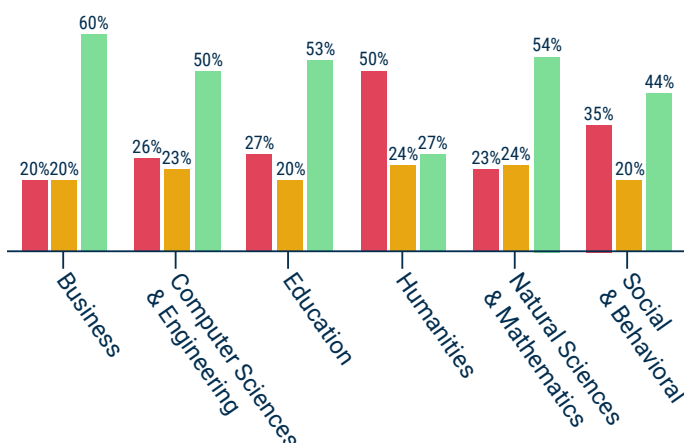|		
✓15%	✗85%	Business
✓17%	✗83%	Computer Sciences & Engineering
✓15%	✗85%	Education
✓23%	✗77%	Humanities
✓14%	✗86%	Natural Sciences & Mathematics
✓18%	✗82%	Social & Behavioral Sciences

Perception of Career Conditions by Field of Study

On average, **49% of graduate student** respondents expressed optimism about the conditions for pursuing their current career goal after degree completion, while **29% expressed pessimism**. Graduate student respondents in the humanities expressed the **highest average pessimism (50%)**.

In general, how do you feel about the conditions for pursuing your current career goal after degree completion?

n = 3,138

😠 Pessimistic   😐 Neither   🙂 Optimistic

Bar chart values:
- Business: 20% Pessimistic, 20% Neither, 60% Optimistic
- Computer Sciences & Engineering: 26% Pessimistic, 23% Neither, 50% Optimistic
- Education: 27% Pessimistic, 20% Neither, 53% Optimistic
- Humanities: 50% Pessimistic, 24% Neither, 27% Optimistic
- Natural Sciences & Mathematics: 23% Pessimistic, 24% Neither, 54% Optimistic
- Social & Behavioral Sciences: 35% Pessimistic, 20% Neither, 44% Optimistic

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For people who do fieldwork, ethnographic work, things are really a big question mark right now. I can thankfully continue to do my study online--it will not be the same dissertation or work. Faculty need to be frank with students and tell them that projects will need to be edited to a plan B, C, D. Also, we need to have a serious conversation about not finding academic jobs in the next four years. It is the elephant on the room. For me and many Black and Brown folks, this situation has put us back into "survival mode" ---this means foregoing the academic route and getting a job out in the industry side of things.
- Survey participant

Watching the responses of universities to the pandemic has made me crestfallen about my dream of continuing to pursue postdocs and academic jobs. Academia was extremely competitive before the pandemic, but I fear that now my cohort's chances are shot. I worry about whether government agencies will be hiring yet in 2021-2022. I am increasingly thinking that the wise thing to do right now would be to start building my own side hustle that I could potentially do full-time if I needed to support myself.
- Survey participant

My career just isn't a possibility right now. So that's gotten me thinking about a lot of stuff because I have to pay the bills. This program secures my living for a little while, but after this program ends, if COVID is still around, I don't think that that career will be a possibility.
- Focus group participant

I've contemplated at large whether or not future employers will hire someone who went to professional school during this time in fear that we did not get the most of our program or missed important skill training.
- Survey participant

Recommendations

Drawing on the Centers for Disease Control and Prevention's (2020) principles for a trauma-informed approach to care, we mapped recommendations for graduate education from our survey findings and as discussed by graduate student participants. Multiple and overlapping crises including the pandemic, racial injustice, and international student status changes are ongoing and may retrigger mental health symptoms. Further, the pandemic could contribute to the re-traumatization of graduate students, particularly those with socially marginalized identities.

In general, crisis workers recommend:

- create conditions for student physical and psychological safety
- provide students with resources
- help students to regulate, relate, and reason, i.e. slowing down trauma-based responses
- empower students

Element	Practices
Safety, Trustworthiness, & Transparency	• Provide targeted, accessible economic support (e.g., food, childcare, financial). • Provide resources for students to attend to their health and well-being needs. (Examples graduate students suggested included lifting caps on the number of counseling sessions and providing access to telehealth and teletherapy.) • Do not assume that graduate students themselves are in low-risk categories for negative outcomes from COVID-19. Black and Indigenous graduate students may also be embedded in communities who have been disproportionately negatively impacted by COVID-19. • Consider graduate students explicitly in institutional policy, support, and communication. Unclear status as students and/or employees contributes to uncertainty. • Recognize faculty and departments who have been exemplars of local support, but do not assume all graduate students have supportive advisor relationships.
Peer Support	• Create opportunities for sustained social connection and community, such as through Zoom social hours and regular contact with advisors. • Facilitate TA/RA discussion groups.
Empowerment, Voice, & Choice	• Organize career workshops that focus on common experiences of graduate students. • Encourage graduate student change agents and compensate them for their labor. • Develop joint projects with students to help address the needs of their vulnerable peers.
Help Students Manage Trauma	• Educate faculty that traumatized students will have difficulty regulating their responses to stress (e.g., they may be especially emotional, angry, or avoidant). • Support time offline, rest, positive attitudes and experiences, mindfulness, and counseling. • Create opportunities for connection, fun, and community.

STUDY DETAILS

Graduate students from 12 U.S. public research universities participated in the study. The group of institutions varied in terms of research activity, geographic location, and student populations. The institutions included one historically Black university and two Hispanic-Serving Institutions. The electronic questionnaire was administered during June and July 2020. Results reported here are based on 4,036 initial survey responses (3,182 completed surveys and 854 partially completed surveys) from a total of 60,247 graduate students attending the 12 institutions who were emailed the survey link by their institutions. The response rate was 6.7% overall and 5.3% for completed surveys. Bias likely exists related to graduate students who had the access and capacity to respond to an electronic survey. Survey participants could enter a lottery for one of 100 $50 gift cards. Reported subgroup differences were statistically significant for the relevant test at the $p<.05$ level or less. Additionally, 56 graduate students participated in focus groups during August 2020 to explore students' experiences and reactions to the COVID-19 pandemic, and how these experiences related to their identities, program completion, and career aspirations. Further analyses are ongoing.

Mental Health Measures

Personal Health Questionnaire Depression Scale (PHQ-8)
Kroenke, K., Strine, T. W., Spitzer, R. L., Williams, J. B., Berry, J. T., & Mokdad, A. H. (2009). The PHQ-8 as a measure of current depression in the general population. Journal of Affective Disorders, 114(1-3), 163-173.

Generalized Anxiety Disorder – 7-Item Scale (GAD-7)
Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. Archives of Internal Medicine, 166(10), 1092-1097.

PTSD Checklist for DSM-5 (PCL-5)
Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). The PTSD Checklist for DSM-5 (PCL-5). Retrieved from https://www.ptsd.va.gov/professional/assessment/adult-sr-ptsd-checklist.asp.

Well-Being Index (WHO-5)
World Health Organization (1998). Wellbeing measures in primary health care/The Depcare Project. Copenhagen, Denmark: WHO Regional Office for Europe.

Sample Description

Demographics reported here are for the sample of **3,056 graduate students** who completed the relevant portion of the survey. Figures may not total 100% due to rounding.

Degree Program	Master's 51%, Ph.D 39%, Other Terminal Degree with Research Project 5%, Other Terminal Degree without Research Project 2%, Other 1%, Multiple Degrees 3%
Gender	Man 20%, Woman 68%, Trans/Non-binary/Genderqueer 3%
Race/Ethnicity	Alaska Native/American Indian/Native American/First Nation 1%, Asian/Asian American 11%, Black/African American 5%, Hispanic/Latino 7%, Middle Eastern 1%, South Asian 3%, White 64%, 2 categories or more categories 8%
Are you an international student?	Yes 15%, No 85%
What is the highest level of education attained by either of your parents (or those who raised you)?	Less than high school 3%, High school 14%, Associate's degree 7%, Bachelor's degree 32%, Master's degree 28%, Doctoral or professional degree 15%

[1] Calculations based on respondents who selected Black or African-American or Alaska Native/American Indian/Native American/First Nation among their self-identified race/ethnicity categories.

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