Mental Health and the PhD: Insights and Implications for Political Science*

Nasir Almasri† Blair Read‡ Clara Vandeweerdt§

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Abstract

There is a severe mental health crisis among graduate students in political science. We present findings from an original survey on the mental health of political science PhD students at seven US universities. Our results are concerning: 15.8% expressed thoughts of suicide in the two weeks prior to taking the survey. About 30% of respondents meet the criteria for depression and only a third of those are receiving treatment. Around 32% meet the criteria for anxiety and fewer than half are receiving treatment. We also find that students with poorer mental health are isolated, have fewer friends in their department and fewer people to turn to for help, and are more likely to contemplate dropping out of their program. Our study raises important questions about the experiences of graduate students during the program and serves as an urgent call to action to address the well-being of our colleagues.

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†PhD Candidate, Department of Political Science, Massachusetts Institute of Technology

‡PhD Candidate, Department of Political Science, Massachusetts Institute of Technology

§Visiting Scholar, Lecturer, University of Copenhagen, Copenhagen, Denmark

1 Introduction

A recent spate of studies suggests that there is a mental health crisis among graduate students (Bernstein 2015; Bolotnyy, Basilico and Barreira Forthcoming; Evans et al. 2018; Müller 2020), and that the nature of some aspects of political science research have negative impacts on mental health (Hummel and El Kurd 2021). Focusing on graduate students in political science, we find that students have far worse mental health than other populations across a range of outcomes.[1] Disparities in mental health and well-being are significantly related to how individuals experience their PhD programs. For instance, students with low well-being scores are much more likely to consider quitting their program and feel much less satisfaction with their work.

The results are alarming and demand immediate action. About 30% of respondents exhibit symptoms consistent with depression and 32% with anxiety. Most of these students are not receiving treatment. In the two weeks leading up to the survey, 16% of students exhibited suicidal ideation. Poor mental health is a plausible contributor to the fact that only 39% of non-STEM doctoral students in the US complete their degree (Zhou and Okahana 2019). Not acknowledging and attending to this issue could mean a tremendous waste of resources and human potential. Moreover, since we fielded the survey, the COVID–19 pandemic has likely made these issues more acute (Czeisler et al. 2020).

We proceed as follows. We first describe our sample and survey design, emphasizing what we can and cannot learn from the type of survey we fielded. We present findings on mental health conditions before discussing whether PhD students in political science are aware of available resources for addressing mental health concerns and whether they use them. We also discuss the environmental correlates of mental health, assessing the importance of professional relationships, advising, and experiences within respondents' programs. These data provide systematic evidence to support the conclusion that there is a mental health crisis among PhD students in political science departments. To highlight the experiences and problems facing graduate students in their own words, we also present findings from a brief open-ended questionnaire that concluded our survey. These responses enable us to explore how identity intersects with the graduate school experience

and provide a first attempt at suggesting actions that individual departments and the discipline as a whole might take to improve student experiences.

2 Survey Sample and Design

We fielded the survey in February–March 2020 among students of seven graduate political science programs ranked in the top ten according to the US News and World Report.[2] We recognize that this survey population might have different resources, opportunities, requirements, and pressures than those not included; future research will be required to understand the nature of this bias. Each department assisted in dissemination and all responses were voluntary. We sent the survey to 653 students in total and 308 students responded, yielding a 47% response rate.[3] About 54% of respondents identified as male and 45% as female, with 72% American and 28% international. The survey instrument was a shortened version of the survey in Bolotnyy, Basilico and Barreira (Forthcoming) with the addition of three new open-ended questions.[4]

The survey included a series of modules designed to measure symptoms consistent with depression and anxiety. To assess depression, we used the Patient Health Questionnaire (PHQ-9), an instrument that asks how often respondents experienced each of nine depression symptoms in the past two weeks. For assessing anxiety, we used the Generalized Anxiety Disorder screener (GAD-7). Both have been widely validated and shown to accurately probe the symptoms of depression and anxiety, respectively, and both have high sensitivity and specificity (Kroenke, Spitzer and Williams 2001; Löwe et al. 2008). Health care providers commonly administer them together as screeners.

Two primary concerns threaten the external validity of our descriptive findings. First, our survey was voluntary, with 47% of students completing the survey. This response rate is consistent with similar studies; recent surveys on mental health, response rates have ranged from 14% (Chirikov et al. 2020) to 57% (Hefner and Eisenberg 2009). In the study of economics graduate students, which most closely matches our design, 45.1% of students completed the survey (Bolot-

nyy, Basilico and Barreira Forthcoming).

It is hard to know who may select into or out of a survey on mental health. What evidence there is, however, suggests that the bias might be minimal. For example, Bolotnyy, Basilico and Barreira (Forthcoming, 11) conducted a two-wave survey of mental health outcomes among economics graduate students, and did not find that those with poorer mental health were more likely to drop from the sample for the second wave. Other studies have compared voluntary responders to reluctant responders by conducting follow-up face-to-face surveys with non-responders and found that although the prevalence of anxiety and depression is higher among reluctant responders, the difference is small, and the associations between demographic and environmental factors and mental health were not biased by non-response (Cheung et al. 2017; Vink et al. 2004). Our sensitivity analysis—discussed in Section 3—indicates that the potential bias introduced by the response rate does not dampen the severity of our results.

A second concern is that the timing of the COVID-19 pandemic in the United States may have influenced responses, especially as recent studies have demonstrated worsening mental health among university students during the COVID-19 pandemic (Chirikov et al. 2020). We leave out the 10.4% of responses received on or after March 8th, the earliest date that a participating school (Columbia) announced a shift to remote learning.

The cross-sectional nature of our survey does not allow us to make causal claims. To protect our respondents' anonymity, we also had to omit several important demographic questions, including race and ethnicity. Because many departments lack racial and ethnic diversity, including a question about race might have made respondents identifiable.

3 Survey Findings

Figure 1 shows the distribution of mental health evaluations across four key outcomes: depression, anxiety, suicidal thoughts, and poor/fair subjective mental health. We coded students as suffering from depression and anxiety if their responses to PHQ-9 and GAD-7 scales exceeded the

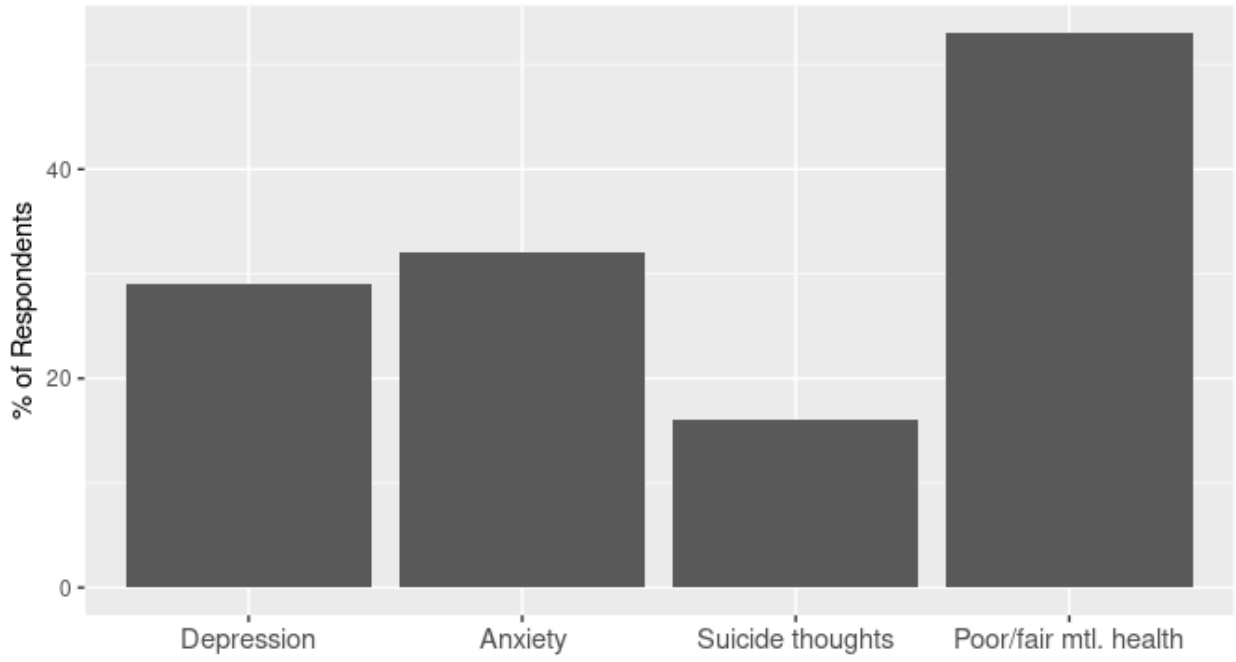

Figure 1: Prevalence of Negative Mental Health Outcomes

cutpoints used to diagnose major depression and generalized anxiety disorder (**?**Löwe et al. 2008). About 29% of respondents experienced depression and 32% experienced anxiety. There is large overlap between these two groups: about 21% of respondents suffered from both depression and anxiety. Importantly, none of these findings differed significantly across schools.

Suicidal ideation is a particularly important sub-item of the PHQ-9. Almost 16% of students in the sample reported having thought about suicide in the past two weeks. This is similar to the rate of suicidal thoughts among adult outpatients treated for mental health conditions (Rossom et al. 2017). Among the general population, approximately 4% of American adults report having such thoughts over the past year (Crosby et al. 2011), while 7% of young adults (aged 18 - 25) exhibit suicidal ideations, based on the same survey item (Rossom et al. 2017). Finally, a full 53% of our respondents subjectively rate their mental health as poor or fair (the bottom half of a four-point scale).

We re-calculated the estimated prevalence of anxiety or depression, rates of poor/fair subjective mental health, and suicidality according to different sensitivity bounds of non-respondent mental health. If no one in the non-response sample had negative outcomes (meaning we measured all

those struggling with mental health), 22% of the graduate student population would have subjectively poor mental health, 18% would have anxiety or depression, and 8% would express suicidality. These numbers are still somewhat worse than the general population.[5] On the other hand, if *everyone* who did not respond had negative outcomes, those figures would be 75%, 60%, and 77%, respectively. This, too, seems unlikely. Finally, our results are similar to other recent studies of graduate student mental health (Bernstein 2015; Bolotnyy, Basilico and Barreira Forthcoming).

We also asked respondents if they had been diagnosed with any mental health issues before starting their program. Across our entire sample, 24% of respondents had pre-existing diagnoses. Among students who had never been diagnosed before starting a PhD program, rates of diagnosable depression (27%), anxiety (27%) and suicidal thoughts (12%) were still remarkably high. This suggests that poor mental health among graduate student is not (only) caused by PhD programs attracting students with poor mental health.

3.1 Treatment and Coping Strategies

Mental health disorders can be manageable when treated (Cook, Schwartz and Kaslow 2017). Yet we find that less than half of students screened for depression or anxiety (33% and 42%, respectively) are receiving treatment. What holds people back? Information does not seem to be an important stumbling block: 93% of students report that they know where to turn for help. However, only 64% say they would be at least moderately likely to do so. Moreover, respondents who report poorer mental health are less likely to actually turn to others for help. Among students who recently sought help, most relied on informal networks: 61% turned to friends and family (including fellow students). 53% reported going to a mental health professional. Students rarely turn to department staff or faculty: only 7% did.

3.2 Differential PhD Experiences

Struggling with mental health is likely to color students' experience of graduate school. Respondents with good or excellent mental health rated their satisfaction with the program a 7.52 out

of 10 on average. Respondents with poor or fair mental health, on the other hand, rated their satisfaction with the program at 5.76, with a statistically significant difference between the two groups. Heterogeneity in graduate school experiences between those with good and poor mental health not only helps illuminate the differential experiences people have during the PhD, but can also point to potential environmental factors that may exacerbate–or be exacerbated by–poor mental health.

Table 1 shows the differences in how people experience their programs across a variety of outcomes. These findings point to equity concerns in opportunities and experiences of graduate school for those who struggle with mental health. Respondents with worse mental health were more likely to think about quitting the program and have more thoughts consistent with imposter syndrome. Table 1 shows the average value (on a scale from 1 - 4) of people who agree with both positive and negative statements about graduate school. People with poor or fair mental health scores are consistently less likely to agree with positive statements and more likely to agree with negative ones.

Notably, the sources of the greatest divergence of experiences between those with good or poor mental health were related to the work itself, rather than interpersonal dynamics with advisors or other students. Students with poorer mental health were less likely to feel as if they were doing useful or satisfying work and could make a positive impact on society—replicating similar findings by Bolotnyy, Basilico and Barreira (Forthcoming) among economics graduate students. These students are also more likely to feel negative impacts of the work on their personal lives. This suggests that the intensity and stress of graduate school may be rooted in the nature of the work, and solutions may require broader structural changes. More research in needed, however, to systematically explore how different environmental factors may *contribute* to variation in mental health outcomes among graduate students.

3.3 Department Strategies and Mental Health

The survey concluded with three open-ended questions. We first asked: "what could students, staff or faculty at your department do that could improve graduate students' mental health or well-

Positive Experiences				
Measure	Pooled Mean	Mean, Good/excellent MH	Mean, Poor/Fair MH	Difference
Satisfaction of work well done	2.98	3.38	2.65	0.73^{***}
Sense of personal accomplishment	3.03	3.35	2.78	0.57^{***}
Feeling of doing useful work	2.87	3.14	2.65	0.50^{***}
Goals to aspire to	3.66	3.93	3.45	0.48^{***}
Opportunities to make a positive impact on community/society	2.47	2.63	2.35	0.27^{**}
Negative Experiences				
Frequency considered quitting	0.72	0.32	1.04	-0.72^{***}
Too tired for activities in private life	3.13	2.71	3.45	-0.74^{***}
Worried about work when not working	4.02	3.75	4.27	-0.52^{***}
Had difficulty making ends meet financially	2.26	1.98	2.49	-0.50^{***}
Too tired for household jobs	3.06	2.77	3.28	-0.50^{***}
Experiences imposter syndrome	1.41	1.16	1.61	-0.45^{***}
Had work prevent time with family or significant other	3.16	2.94	3.33	-0.39^{***}
Perceives peers as competitive	2.13	2.07	2.17	-0.10^{***}

Table 1: Agreement with Statements about Graduate School (1–4 Scale). $**$ indicates significance at the 5% level, and $***$ indicates significance at the 1% level.

being?". The most common answers included the need for departments to provide more encouraging (but still constructive) feedback and better professional mentorship in addition to research advice (22%), the need for more honesty about the highly competitive job market and support for non-academic career paths (20%), and the need for clearer guidance on departmental requirements and expectations (20%). Other concerns included the lack of discussion about mental health (18%), fixing toxic department culture around work intensity and competition (18%), improving access to resources including professionalization workshops and funding (17%), re-examining course load and exam intensity (13%), ending inappropriate behavior by particular faculty members (9%), and addressing the lack of discussion on identity in general and race in particular (6%).

Second, we asked "what are students, staff or faculty at your department already doing, that supports graduate students' mental health or well-being?" The most positive responses included having a good department culture (40%). Other positive aspects included having an advisor who provides academic mentoring and more general career and personal advice, and who is flexible (26%), having designated spaces and groups for underrepresented populations and for mental health discussions (22%), clearly communicating about performance and expectations (13%), providing the necessary resources (12%), and providing sufficient social activities (10%).

Respondents consistently emphasized the importance of relationships within their departments. Some students who described their struggles have unproductive relationships with their advisors, are situated in departments with toxic cultures, or both. Respondents shared that having supportive faculty can make or break students' experiences. They suggested that some, but not all, advisors and staff members "are really awesome and go out of their way to check in on students," but that, ultimately, "the onus never leaves the student" to protect their mental health.

A number of other responses focused on the uncertainty and fear graduate students face, especially as it relates to advisor relationships, the job market, and lack of departmental guidance. Students recommended that advising include regular performance feedback after coursework is finished; that advisors receive "holistic" mentor training, including dealing with mental health issues, how to structure work hours and post-coursework timelines, and dealing with the job market;

that faculty not pick favorites; and that advisors avoid valuing students' worth based on research and productivity. Many respondents suggested that departments should focus on "reforming the mentorship/advising relationships ... There are a lot of GREAT mentors, but there are a lot of poor ones." For example, students noted that some faculty do not "demonstrate interest in [their] lives beyond the work [they] produce." To remedy these issues, they suggested that advisers should go beyond academic and professional mentoring by being cognizant of, and sympathetic to, the personal struggles students face. They need not serve as mental health professionals. Instead, advisers should be aware that their sympathy, flexibility, and support can have a significant positive influence on students. Although these changes would not shift the structural conditions that significantly impact the lives of students, respondents believe these are important first steps.

Regarding the job market, the most common suggestions were to put "less pressure on getting a tenure track job" at top institutions and to openly discuss non-academic job possibilities. This finding is consistent with the closed-ended survey, which found that 75% of respondents were worried about job prospects. A number of respondents complained that "no one seems to be willing to openly talk about the fact that we are admitting more and more students into [a discipline with] an already-saturated job market" and that discussing the issues of the job market without providing advice is "unhelpful and demoralizing, especially since none of them say anything about *alternatives to tenure-track jobs*."[6] Even among those who were pursuing tenure-track jobs, a number of respondents noted that they felt under-prepared for the job market.

3.4 Identity and Mental Health

Third, we asked whether respondents felt that any aspect of their identity or background (e.g. gender, country of origin, race, sexual orientation) makes it harder for them to feel personally or professionally supported at their department and what would could be done to improve their experience, if anything. The most common identities our respondents referenced with regard to their experiences were gender (29%) and race (21%). Those answering "gender" were almost exclusively women, while those answering "race" were mixed. Other common answers included

socio-economic status (12%), not belonging to the "old boys' club" (10%), international status (7%), LGBTQ+ identity (6%), and religion (5%). Many respondents explicitly answered "no" (22%), identity does not impact their relationship with the department.

Data from the closed-ended survey suggest that women experienced more incidents of sexual harassment and impostor syndrome. Respondents echoed these experiences, with one noting that they feel that "men are often treated more seriously and women are told to act like men," an undertaking that is often unsuccessful and emotionally and mentally draining. Many feel that they do more work and receive less credit, have their successes minimized, are made uncomfortable or left out of conversations, are often interrupted. They feel less supported by male-identifying faculty and sometimes by overburdened female-identifying faculty. One respondent said that their department "is still very much a boys' club and male faculty spend a lot of time informally with male graduate students, but not with female ones. They could make an effort to include women in these informal meetings. Hiring more female faculty would also help integrate and support female graduate students." About 10 percent of respondents noted concern about how casual interactions between male-identifying students and faculty tend to exclude female-identifying students.

People of color experienced similar issues in terms of concerns about hiring faculty and of the undercutting of their successes due to their identity. "I'm a woman of color and a couple of white men in the department have brought it up. For example, one guy once 'jokingly' said that the reason I had gotten into the program was because the one non-white professor in my subfield 'wanted more students like him.' Another guy told me I had no reason to worry about the job market." In addition, they noted the need for groups or spaces for students of color to gather informally. A trend on Twitter confirms that similar thoughts and experiences are widely shared among people of color and especially Black scholars in American institutions (see the hashtag #BlackInTheIvory). This suggests that isolation is a concern for students of color. As noted in the closed-ended survey, isolation and poor mental health outcomes were highly correlated.

Students from different or less privileged socio-economic backgrounds noted their unique circumstances that made them feel marginalized. Many noted that they "don't know how to conform

to certain class-based behavioral expectations" and that "those that are from non-academic families/backgrounds and who have little guidance outside of the institution" would benefit from more "formalized guidance with professional socialization and navigating the field/department." Finally, students with families find the nature of social activities and workshops unaccommodating.

4 Conclusion

Our analysis presents a disturbing image of mental health among PhD students in political science. Echoing studies of other academic fields, we find that the current state of PhD student mental health demands attention (Barry et al. 2018; Evans et al. 2018; Flaherty 2018; Levecque et al. 2017). While it is difficult to conclude from a cross-sectional survey whether graduate programs cause poor mental health, some findings point in that direction. For instance, rates of depression, anxiety, and suicidal thoughts are still high among students who were never diagnosed with any mental health problems before starting their PhD. Moreover, when asked to select their most important job stressors, students chose aspects such as job uncertainty (76%), never feeling "off" work (71%), and unclear expectations (63%). These are factors that are indeed typical for PhD programs and well-known causes of work-related stress (e.g. Barry et al. 2018; De Witte, Pienaar and De Cuyper 2016; Schmidt et al. 2014; Wepfer et al. 2018), which is in turn associated with depression and anxiety (Colligan and Higgins 2006). We identify various aspects of the PhD program that correlate with particular mental health outcomes, serving as a first step towards understanding if specific components of the PhD program cause or exacerbate mental health issues.

We hope that these findings galvanize faculty, administrators, and students to evaluate how departments can do a better job mitigating mental health struggles among students. Given the severity of the problem and the relative scarcity of resources in terms of time, money, and energy, it will be impossible for individual students, faculty, or staff to resolve the crisis alone. This study's findings hint at a number of short-term solutions that can be implemented at the department level, such as training faculty in holistic advising where students students are treated as mentees as well

as advisees, or clearer communication about academic expectations. However, other issues are systemic and require a concerted effort across the discipline to be addressed. The oversaturated academic job market is one example.

This survey provides a step towards better understanding holistic experiences with graduate school and the consequences for mental health. Tasks for the future include collecting longitudinal data on graduate student mental health, in order to disentangle causes and effects. Also, it will be important to document the extent to which the COVID-19 pandemic as exacerbated the prevalence of mental health disorders among university students (e.g. (Chirikov et al. 2020)). We also encourage departments to continue collecting data and to find creative ways to understand how identity differentially affects mental health experiences of students in these programs. The current study leaves open important questions about diversity, identity, and racial justice from a mental health perspective. Finally, it will be critical to understand how mental health struggles influence PhD graduates who move into post-doctoral, tenure-track, non-academic, and other positions, particularly if they are mentoring graduate students.

As departments begin to rigorously investigate what works and what does not in mitigating mental health concerns within the profession, it will be critical to continue sharing results as they are collected. Such an archive of experiences could be used as a form of accountability. Although the individual-level data from this and future surveys is too sensitive to share, we have developed supplementary materials to aid in replicating our survey at other institutions[7], and we will release the Qualtrics survey instrument and our analysis code to interested parties. Together, and armed with more systematic data, we can aspire to take steps as a discipline to address the ongoing mental health crisis.

Notes

[1]A 2018 study by the CDC found that 8.1% of American adults had depression in the past two weeks, compared to 30% in our sample (Brody, Pratt and Hughes 2018). The same study finds that among those between the ages of 20 and 39, which captures the age of most graduate students, that rate was 7.7%.

[2]Participating schools are MIT, Columbia, Princeton, Duke, Michigan, UC-Berkeley, and UCSD. The other schools are Harvard, Stanford, and Yale. Two departments chose not to participate and a third was unresponsive.

[3]96% of respondents filled out the questions about depression, anxiety, and suicidality, which are at the core of this study's results. 89% of respondents completed the entire closed-ended questionnaire and 55% of respondents went on to complete the open-ended questions.

[4]The study protocol was approved by the relevant Institutional Review Board, and designed in consultation with mental health professionals to minimize risks posed to the respondents. All respondents read and agreed to an informed consent form. References to school-specific mental health services and Title IX reporting options, as well as the National Suicide Prevention Hotline, were shown at several points in the survey when respondents answered "yes" to relevant questions. These references were also included at the end of the survey.

[5]In a 2019 CDC study of the general population, roughly 11.2% of Americans adults had experienced regular anxiety, while 4.1% had experienced regular thoughts of depression (Clarke, Schiller and Boersma 2019). Just 7% of adults aged 18 - 25 exhibit suicidal ideations (Rossom et al. 2017), while the population rate is lower, at 4% (Crosby et al. 2011).

[6]Emphasis ours.

[7]See appendix.

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