

A Review on Depression in Graduate School Students

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Abstract

This review is a compilation of studies and literature that focuses on the existence of depression among graduate students. It has been an alarming predicament that needs to be addressed by institutions, universities and educational management. Depression brought by stress and anxiety from studying graduate school is a case that research should monitor. Necessary and effective contingency and intervention programs that would address depression in graduate school students should be properly implemented.

Introduction

According to the American Psychiatric Association - Depression (major depressive disorder) is a common and serious medical illness that negatively affects how you feel, the way you think and how you act. Fortunately, it is also treatable. Depression causes feelings of sadness and/or a loss of interest in activities once enjoyed. It can lead to a variety of emotional and physical problems and can decrease a person's ability to function at work and at home.

Depression symptoms can vary from mild to severe and can include:

- Feeling sad or having a depressed mood
- Loss of interest or pleasure in activities once enjoyed
- Changes in appetite — weight loss or gain unrelated to dieting
- Trouble sleeping or sleeping too much
- Loss of energy or increased fatigue
- Increase in purposeless physical activity (e.g., hand-wringing or pacing) or slowed movements and speech (actions observable by others)
- Feeling worthless or guilty
- Difficulty thinking, concentrating or making decisions

- Thoughts of death or suicide

Symptoms must last at least two weeks for a diagnosis of depression. Also, medical conditions (e.g., thyroid problems, a brain tumor or vitamin deficiency) can mimic symptoms of depression so it is important to rule out general medical causes.

But being sad is not the same as having depression. The grieving process is natural and unique to each individual and shares some of the same features of depression. Both grief and depression may involve intense sadness and withdrawal from usual activities.

American Psychiatric Association (2018)

Literature Review on Depression in Graduate School Students

According to Kaplan (2018) recent studies have documented widespread mental distress among graduate students, but the high rates suggested by the this study are still alarming, says Teresa Evans, a neuroscientist at the University of Texas Health Science Center at San Antonio and the study's lead author. She notes that students suffering from anxiety or depression may have been especially motivated to take the survey, which could have skewed the results. But she believes the findings still underscore the seriousness of the problem and the need for a response. "Our results, as well as the outpouring of personal stories and support for future investigations, indicate that a tipping point has been reached," she says.

Echoing the findings of the 2017 Nature Graduate Survey, Evans and colleagues found that advisers and principal investigators (PIs) had a large impact on the success and well-being of graduate students. About half of the students who were anxious or depressed disagreed with the statements that their PI or adviser "provides mentorship" or "provides ample support." Only about one-third agreed with those statements.

The survey also found that more than half of depressed or anxious students disagreed with the statement "I have a good work-life balance," a clear sign that the demands of their graduate programme add to their distress. Evans says that many students could benefit from basic training to help them manage their time and cope with stress. "That's low-hanging fruit, but it's essential to making a difference," she says.

Katia Levecque, an industrial-relations specialist at Ghent University in Belgium who has studied mental-health issues among university students, says that many outstanding questions remain. The mental-health field is still waiting for a large-scale scientific survey that could truly measure the prevalence of emotional problems in this population. "We don't yet have the evidence that there's a mental health crisis," she says. Still, she says, there's plenty of reason to believe that something needs to be

done for the sake of the students and for the workplaces of the future. “People are suffering and dropping out,” she says. “I’m not sure we can wait to take action.”

Kaplan, K. (2018) “Depression and anxiety are common among graduate students”

According to Flaherty (2018), several studies suggest that graduate students are at greater risk for mental health issues than those in the general population. This is largely due to social isolation, the often abstract nature of the work and feelings of inadequacy -- not to mention the slim tenure-track job market. But a new study in *Nature Biotechnology* warns, in no uncertain terms, of a mental health “crisis” in graduate education.

“Our results show that graduate students are more than six times as likely to experience depression and anxiety as compared to the general population,” the study says, urging action on the part of institutions. “It is only with strong and validated interventions that academia will be able to provide help for those who are traveling through the bioscience workforce pipeline.”

The paper is based on a survey including clinically validated scales for anxiety and depression, deployed to students via email and social media. The survey’s 2,279 respondents were mostly Ph.D. candidates (90 percent), representing 26 countries and 234 institutions. Some 56 percent study humanities or social sciences, while 38 percent study the biological and physical sciences. Two percent are engineering students and 4 percent are enrolled in other fields.

Consistent with other research on nonstudent populations, transgender and gender-nonconforming graduate students, along with women, were significantly more likely to experience anxiety and depression than their cisgender male counterparts: the prevalence of anxiety and depression in transgender or gender-nonconforming graduate students was 55 percent and 57 percent, respectively. Among cis students, 43 percent of women had anxiety and 41 percent were depressed. That’s compared to 34 percent of cis men reporting symptoms of anxiety and 35 percent showing signs of depression.

Because work-life balance is associated with physical and mental well-being, and little is known about it in the graduate trainee population, the authors asked respondents if they agreed that their work-life balance was “good.” Of the graduate students who experienced moderate to severe anxiety, 56 percent did not agree, versus 24 percent who did. Among graduate students with depression, more than half (55 percent) did not agree with the statement (21 percent agreed).

The authors take those findings to mean that good work-life balance is “significantly correlated with better mental health outcomes.”

Graduate students' relationships with their advisers or principal investigators are also known to impact the quality of their experience, so the study included questions about that, too.

Flaherty, C. (2018) "Mental Health Crisis for Grad Students"

Lowe (2018) says that according to this new survey, depression and anxiety are far more common among graduate students than in the general population. This should surprise no one at all, but it's good to have some quantitative data on the problem. There are limitations to the study – for one thing, it's quite possible that (self-selected) respondents were among those more likely to have experienced these problems. The survey was done across 26 different countries (over 2200 respondents), 70% female/28% male/2% transgender, and the fields of study involved were 56% humanities and 38% physical sciences – no breakdown of the numbers by these categories is available.

Even with these reservations, I have no trouble believing the overall conclusions – based on my own experience and my observations since, I think that anxiety and depression are very close to inevitable in graduate study, and that students should be aware of what they're getting into. What's happening, in any field, is the rubber finally meeting the road: you're not just sitting in classrooms; you're doing what practitioners of your chosen line of work actually do, and you're finding out what that's really like and whether or not you're any good at it. If that doesn't bring on the occasional bout of anxiety and self-doubt, then something is off.

Moving from that to depression is not such a huge jump, either. All of us who have been through grad school have seen people who sort of freeze up at some point in their progress. Sometimes it happens near the beginning, such as when chemistry graduate students move out of classes and into the labs – some of them just can't seem to get anything going. I remember people who were always just about to start something, just about to figure out what went wrong with the last thing (which was spread out into a bunch of inconclusive samples around their hoods), just about to really start making some progress. But they never did. Later in the process, another familiar figure is the person who's been hanging around for years in the lab, running ever more experiments to avoid writing up, as is their near-relative, the person who's actually out of the lab, writing up that dissertation/thesis, expected to set a defense date pretty soon. . .and who in the end, is never heard from again after a while, finding themselves unable to get the thing done. After a while, the official notices from the department come back stamped "Addressee unknown".

Depression might well be a good description of what's going on in many of these situations. Someone finds themselves in an untenable situation and sinks into a state

that makes it more untenable every day. David Foster Wallace defined a harmful addiction as something that offered itself as the remedy for the problems that it itself was causing (as with alcohol), and the downward-spiral mode of life has some similarities, as a big factor in what put you into this spot makes you ever less likely to do anything about it. The canonical view of major depression from the inside is William Styron's *Darkness Visible*, but you don't have to be as far along as Styron was to be in real trouble.

Lowe, D. (2018) "Depression and Anxiety in Graduate School"

University of Texas Health Science Center states that graduate students are more than six times as likely to experience depression and anxiety as compared to the general population, according to a comprehensive survey of 2,279 individuals conducted via social media and direct email. The research team including Teresa Evans, Ph.D., and Lindsay Bira, Ph.D., of UT Health San Antonio describe their results in the March issue of the journal *Nature Biotechnology*.

The survey included clinically validated scales for anxiety and depression. Nine of 10 respondents were Ph.D. students while 10 percent were master's degree students. The disparity between graduate students and the general population proved to be about equal for both mental health conditions. On the respective scales utilized to test anxiety and depression, 41 percent of graduate students scored as having moderate to severe anxiety while 39 percent scored in the moderate to severe depression range. This compared with 6 percent of the general population as tested previously with those same scales.

The study found that female graduate students were more likely to suffer from anxiety and depression than male graduate students. The transgender and/or gender-nonconforming population also scored significantly higher. Forty-three percent of female respondents scored in the moderate to severe anxiety range and 41 percent in the depression range. This compared to 34 percent and 35 percent, respectively, for the male respondents. For transgender/gender-nonconforming graduate students, the totals were 55 percent and 57 percent.

A developing problem

"There is a growing cry for help from graduate students across the globe who struggle with significant mental health concerns," Dr. Evans, Dr. Bira and the other authors wrote. "Despite increased discussion of the topic, there remains a dire need to resolve our understanding of the mental health issues in the trainee population." These

issues, as identified in the study, include work-life balance and trainee-adviser relationship. The graduate students were asked whether they agree with the statement, "I have a good work-life balance." Fifty-six percent of graduate students experiencing moderate to severe anxiety and 55 percent of students experiencing depression said they did not agree.

"Work-life balance is hard to attain in a culture where it is frowned upon to leave the laboratory before the sun goes down," the authors wrote.

Relationships with mentors lacking

Likewise, 50 percent of graduate students experiencing anxiety and depression said they did not agree with the statement that their principal investigator or adviser provides "real" mentorship. Many universities lack adequate career and professional development programs, the authors wrote, also noting: "Career development encompasses many skills that are vital to graduate student success, but often not included under this umbrella is mental health." Dr. Evans is an assistant professor in the Department of Pharmacology and the founder of the Office of Workforce and Career Development within the Graduate School of Biomedical Sciences at UT Health San Antonio.

Dr. Bira is an assistant professor in the Department of Psychiatry within UT Health San Antonio's Joe R. & Teresa Lozano Long School of Medicine, where she works with the STRONG STAR research consortium studying treatments for post-traumatic stress disorder. In the larger community, Dr. Bira functions as a clinical health psychologist, offering presentations and workshops to break mental health stigma and promote emotional wellness.

University of Texas Health Science Center at San Antonio (2018) "Depression, anxiety high in graduate students, survey shows."

An article of Kelly (2018) says that the average Ph.D. student experiences severe stress, moderate anxiety and mild levels of depression, according to the results of a Graduate Students' Union (GSU) postgraduate mental health survey. The survey was presented by GSU Vice-President Madhav Bhargav at a meeting of the Student Life Committee this week. A total of 747 postgraduate students completed the survey, including 251 Ph.D. students and 418 Masters students. The survey also measured the levels of stress, anxiety and depression among both one and two year masters students. Masters students were found on average to have mild stress, mild anxiety and mild depression, on the DASS Severity Scale. The study encompassed a broad range of Trinity students, aged 19 to 69, with an average age of 29. The study also consisted of 232 males, 505 females, one transgender male and nine non-binary individuals.

However, this response rate consisted of only 15% of Trinity's post-graduate population, which stood at 4,994 at the time of the survey. The GSU has called for the implementation of many participants' suggestions to improve the "PG Experience". In the report, they suggest a need to improve students' feelings in relation to their careers, and to provide them with a sense of purpose. Many students also noted the importance of supervisors, saying: "The relationship with your supervisor is like a marriage which needs commitment, bonding and respect from both sides."

A common area of disagreement arose in relation to the performance of staff in supervisory roles. Many students criticised their supervisors, with one student stating: "I did not see my supervisor for three months straight, it affected me mentally and my master's thesis too." Many of the participants called for the provision of student accommodation supports, workshops on healthy living, better online library access and off campus supports for parents. The GSU also noted the need for wellbeing strategies, through sport and social activities around campus. They noted the importance of the possible implementation of peer supporters and advisory groups and also called for the full inclusion of the Trinity Sports Centre Fee in postgraduate tuition fees, and the removal of separate fees and "bureaucratic steps" to access this facility.

However, the survey also recognized positive aspects of the "PG experience," with many crediting IT Services and the Student Counselling Service in college. Speaking to Trinity News, GSU Vice-President Madhav Bhargav said: "Postgraduate education is a formative experience where the self is conceived and life-long habits are formed. This process must not occur in the circumstances of severe stress and depression. Yet, our report suggests that postgraduates are suffering from stress and depression."

Kelly, P. (2018) "Postgraduate students likely to experience stress and depression, according to GSU survey"

An article from Walker (2015) cited these statements from Graduate Students: "I assumed and hoped that simply taking antidepressants and just 'working harder' would help enough," says Jane*, a PhD student in biology who's been diagnosed with anxiety and depression. "And when things did not quickly improve, this further affected my mood." In essence, many PhD students are so accustomed to hard work and self-discipline that they beat themselves up when their efforts to manage depression fail to generate perfect results.

A general feeling of isolation can also weigh down graduate students who spend much of their time buried under a pile of books or alone in a lab. "The issues that affect students in general, which could also factor in for PhD students, is living independently and having independent work," says Anoushka Bonwick, the projects and relationships

officer at the UK charity Student Minds. Equally stressful is the fact that PhD students face “uncertainty about the future, such as funding for research and what they are going to do after a PhD.”

These issues can have an even bigger impact on students who lack supportive advisers. “My biggest difficulty was the feeling of being cut adrift,” says Andrew*, a former PhD student in physics who dropped out months before finishing. “I didn’t have a very involved or hands on supervisor.” While he left the program in part to relocate with his partner, he says that “a more involved supervisor might have changed things.”

Other PhD students often suffer from imposter syndrome. This was part of my problem even before signs of serious mental health problems arose. I felt as if I’d gotten this far in my academic career by fluke, and that the top grades I’d received during my undergraduate and master’s studies had been an administrative mistake. This fed into my anxiety as well as my depression. Imposter syndrome is a frequent problem among high-achieving students who find themselves surrounded with others like them, according to Linda*, a sociology professor from New Jersey. “It’s very common to feel an incompetent fraud, and usually to assume you’re the only one who feels that way,” she says.

Prospective PhD students should go in thinking about how they will handle psychological challenges as well as intellectual ones. The frequency of these problems shouldn’t scare prospective students away from pursuing PhDs. But they should be prepared going in to think about how they will handle psychological challenges as well as intellectual ones. “I think firstly it’s really important to scope out support services that the university offers,” says Bonwick. This can mean everything from university counseling services to student support groups.

More universities and colleges are also making efforts to do more to support graduate students. Student non-profits like Student Minds in the UK and Active Minds and the Jed & Clinton Health Matters Campus Program in the US collaborate with educational institutions to raise awareness for mental health issues among students, as well as establish a support network.

Beyond these initiatives, universities need to do more to train supervisors to recognize the warning signs of everything from low-level depression and anxiety to suicidal tendencies and substance abuse. And they need to create a culture of openness that not only removes the stigma associated with mental-health problems but encourages students to ask for help. “Academia is understanding, but perhaps too accepting, that everyone has problems,” says Jane. “Just because many people do have mental health problems, it’s not ok that that’s ‘how it is.’” “If you do want to be a professor, think about what your life might be like if it that doesn’t happen.”

Finally, it's important that both prospective and current PhD students directly confront the tenuous realities of the academic job market and plan accordingly. Uncertainty about the future can take a major toll on students, but they're less likely to suffer if their entire identities aren't tied to graduate school.

Walker, J. (2015) "There's an awful cost to getting a PhD that no one talks about"

Nature Biotechnology has published new research on graduate student mental health. Rates of depression and anxiety among graduate students are over six times higher than rates in the general population. Forty-one percent of surveyed graduate students had moderate to severe anxiety. Symptoms of moderate to severe depression appeared in 39% of students. Researchers surveyed 2,279 graduate students via email and social media. Ninety percent of students were pursuing doctoral degrees. The remaining 10% were seeking master's degrees. The data spanned 234 institutions in 26 countries. Forty percent of respondents were pursuing degrees in science (engineering, physical, or biological).

The surveys presented respondents with questions about their graduate school experiences. Students also took clinically validated depression and anxiety scales. Mental health symptoms were more prevalent among women than men. Among women, 43% reported anxiety and 41% reported depression. The rates for men were 34% for anxiety and 35% for depression.

Transgender and gender-nonconforming respondents reported the highest rates of mental health concerns. Fifty-five percent experienced anxiety, and 57% experienced depression. The study did not identify a specific causal link between certain graduate school experiences and mental health concerns. Yet it did identify some common challenges students face. Fifty-six percent of students with anxiety said they did not have a good work-life balance. Among students with depression, 55% said the same.

Half of students with anxiety or depression reported a lack of guidance. They said their advisor or principal investigator did not offer "real" mentorship. The study adds that many universities don't offer career development programs. The study's authors caution that their research may overestimate the prevalence of mental health concerns among graduate students. People experiencing mental health concerns might have been more inclined to respond to the survey. Even so, other research supports the notion that graduate and professional school students face high rates of mental health concerns. A 2016 study found high rates of depression among medical school students. In that survey, 27% of respondents reported clinically significant depression symptoms. Eleven percent reported suicidal thoughts.

Villines, Z. (2018) "High Rates of Depression and Anxiety Among Grad Students"

Recent studies have found that people who work in academia, particularly graduate students, researchers and especially women, are more prone to anxiety, depression and workaholism.

In a study published in *Nature Biotechnology* last month, 41 percent of the postgraduate students who were tested scored as having severe or moderate anxiety and 39 percent tested as having moderate to severe depression. The average rate for both in the general population is usually around 6 percent.

“Grad school can be very stressful because you’re working on very hard things no matter what situation you’re in,” said Ryan Goh, a postdoctoral fellow in Boston University’s Department of Mathematics and Statistics. “You’re kind of getting less and less dependent or being told what to do — it’s more and more independent.”

As students move into graduate education, they have a lot of new responsibilities to juggle, and they have to efficiently divide their time between research, coursework and teaching, Goh said. Financial struggles might also factor into anxiety because living on a graduate stipend can be challenging for many.

Several BU graduate students also said they think the daily routine required of graduate students can be conducive to stress and depression.

Jackson Walters, a Ph.D. student studying mathematics, said he thinks the levels of stress induced by a typical postgraduate lifestyle can be quite high. This year he felt the effects first-hand.

“This academic year I was suicidal for a period,” Walters said. “While this had to do with other events in my personal life, it was not disconnected from being in the fifth year of a Ph.D. program and sort of considering my entire future.”

While there were several internal reasons behind his condition, Walters said, the issues were exacerbated by the stress of keeping up with his academic responsibilities.

“I ... spent three days in a psych ward,” he said. “And that was during the academic year, so I had someone cover my teaching responsibilities.”

Walters said that while it was a struggle, there are several resources available to students who are going through such problems. He added that with therapy, he is now feeling much better. The length of the academic program and the number of years dedicated to it could be a problem, he said, and the unpredictability of the lifestyle further added to his issues.

“You have to really learn how to take care of yourself,” Walters said. “It’s a full-time job, just trying to stay relatively sane and productive and constantly doing so for five years — I think it’s just a different experience than it is for people who are working.”

Praveen Kenderla, a Ph.D. student at BU’s Department of Psychological and Brain Sciences, said he thinks it can be especially difficult for international students to adjust to the postgraduate workload and lifestyle. He said the educational experience in the United States is different from that in his home country of India.

“The idea [in India] is that Ph.D. students don’t teach and that ... all you do is do research,” Kenderla said. “I don’t have an experience of teaching and also taking multiple classes and doing research at the same time.”

He said he had a difficult time making friends and that external stress often impacts his work life.

“It’s a loop,” Kenderla said. “The main stresses are from outside, but it impacts your workload. And once it slightly impacts your workload, it becomes stressful because it impacts your daily life.”

Daniel Kleinman, BU’s associate provost for graduate affairs, said he thinks isolation and instability are among the major factors causing the problems faced by many graduate students.

“In some fields, the work that graduate students do is fairly isolating, and that can contribute to anxiety and probably depression too,” Kleinman said. “I think there is a whole set of factors — some of them have always existed for graduate students, and some, like the job market, may be a little bit different now.”

Several graduate students said they have a positive outlook on the stress they face, citing in part the resources BU provides to help students cope with potential problems.

“I’ve been a grad student here for six years, and if you consider all of that time and the amount of time I’ve spent severely stressed, I can’t actually really say that it’s terrible,” said Karoline Weber, a Ph.D. student studying statistics.

Weber said she’s had a good lifestyle and that she thinks she has felt an average amount of stress comparable to that of most people with non-academic lifestyles.

Audrey Tan, a master’s student pursuing a degree in speech-language pathology, said she thinks the support BU students receive from their professors helps to reduce anxiety.

“I think our professors are really supportive,” Tan said. “They’re very good at creating a supportive environment and just giving us resources and caring and listening to us.”

Galani, K. (2018) “Graduate student lifestyle conducive to anxiety, depression”

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