allaTitle Page

**The Effects of Graduate School on Mental Disorders**

by

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Abstract

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**The Effects of Graduate School on Mental Disorders**

David Gorski MPH

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**Abstract**

Mental health disorders have reached a tipping point globally. Despite its prevalence, signs and symptoms of mental disorders are often ignored because of their associated stigma. While pursuing their degrees, graduate students are even more likely than the general population to experience a mental disorder. This is a problem of significant public health importance.

The purpose of this study was to collect feedback from graduate students with mental disorders about whether and how graduate school affected their mental health. Ten University of Pittsburgh graduate students with diagnosed mental disorders were interviewed. These interviews lasted approximately 45-90 minutes and included questions about the challenges of their graduate programs, what was good about their program, and whether they felt that graduate school had affected their mental health. The results of these interviews include a wealth of data on the opinions of graduate students about many of the factors that affect their lives and their mental health.

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Preface

The author wishes to acknowledge Dr. David N. Finegold and Dr. Martha Ann Terry for all of their assistance with this research project. He also wishes to thank all of the graduate students that participated in the interviews.

# Introduction

Globally, approximately one in three individuals (29.2%) will experience a mental health disorder at some time during their life.1 Mental disorders account for 23% of all non-fatal conditions in the world and are the leading cause of disability.2 Despite this prevalence, recognition of mental health symptoms and help-seeking are often delayed or absent.3

Graduate students are at increased risk for experiencing depression and anxiety when compared to the general population. This finding is supported by a recent landmark study4 of graduate students worldwide, reporting that approximately 40% of the respondents scored as having moderate to severe anxiety and/or depression as compared to only 6% of the general population. Graduate students function in demanding academic programs that result in students spending more time working and less time on extracurricular activities, often leading to an unhealthy work-life balance. In fact, the majority of graduate students with moderate to severe anxiety and/or depression report not having a “good work-life balance.”4 Some of the factors that make graduate student life isolating include long hours performing research and increased study hours that can strain social relationships.

Graduate students also experience a high frequency of negative emotional symptoms. Approximately 46% of graduate students reported feeling overwhelmed frequently or all of the time and 40% reported feeling exhausted.5 Graduate students who have more feelings of depression and anxiety are also more likely to become suicidal during their school years. Students in graduate programs frequently report many negative emotional symptoms including depression, anxiety, nervousness, stress, and loneliness.6 What causes these symptoms to appear in graduate school includes many different individual and environmental factors.How these different factors interact is complex and not well-understood. Research has shown that self-esteem, social supports, stressful life events and personality traits are some interrelated factors.7 Perfectionism is one significant personality trait that has been shown to affect the amount of psychological stress that students report as a result of their academic studies. However, more studies are needed to show how graduate student mental health relates to characteristics of the academic setting such as enrollment size, competitiveness, support from academic personnel, and field of study.8 It has been shown that strong, supportive, and positive mentoring relationships between graduate students and their advisors correlates significantly to less anxiety and depression.4 However, because some academic institutions emphasize faculty research at the expense of teaching and mentoring, there are fewer opportunities for graduate students to form these meaningful relationships.5

Finding ways to reduce or alleviate mental disorders in graduate students is a significant public health issue because mental disorders are directly associated with lower academic performance and higher drop-out rates in college students which, in turn, can result in the loss of human productivity in our society.9 But developing effective mental health interventions starts with accurately assessing the perceived levels of stress, anxiety and depression within the graduate school student population.10 And, even then, many students do not receive treatment. In a recent study of undergraduate and graduate students functioning in a university environment, only about half of the individuals who reported needing help actually sought counseling.11 Many barriers to mental health treatment have been suggested in the research including a desire to handle the problem on one’s own, a lack of mental health knowledge, and financial concerns. However, in the general population, one of the major barriers to mental health treatment has been identified as mental health-related stigma.12 For graduate students, there may be additional institution-level factors that inhibit mental health treatment such as school policies about confidentiality or perceptions about possible repercussions for being known to have a mental disorder.11 The strikingly high rates of anxiety and depression in graduate schools support a call to action to make changes in faculty training, increase counseling resources, and bring about changes in the academic culture.4

The purpose of this study was to collect information from graduate students with mental disorders about whether and how graduate school affected their mental health. University of Pittsburgh graduate students with mental disorders were invited to participate in this study by flyers that were posted in graduate school buildings. Ten graduate students completed the interview process. Interviews lasted approximately 45-90 minutes and included questions about the challenges of their graduate programs, what was good about their program, and whether they felt that graduate school had affected their mental health. The results of these interviews include a wealth of data on the opinions of graduate students about some of the factors that affect their lives.

# Review of the Relevant Literature

Two frequently cited national surveys support the idea that the rate of mental disorders in graduate students is increasing. The first study is the National Survey of Counseling Center Directors from 2010, compiled by Robert P. Gallagher. It involved a survey of 320 directors of campus psychological counseling centers. This study found that approximately 10.9% of enrolled students (graduate and undergraduate) sought counseling in 2009 and that the mean ratio of counselors to students is one to 1,600. (The survey noted that smaller schools have better ratios). Additionally, 91% of directors surveyed confirmed that the rate of mental disorders in students of higher education continues to rise year after year.13

The second national survey was done by the American College Health Association and is commonly referred to as the ACHA-NCHA (American College Health Association—National College Health Assessment). One hundred thirteen North American postsecondary institutions participated in the Spring 2008 survey. There were 83,070 surveys completed by undergraduate and graduate students on these campuses. The ACHA-NCHA contained four questions related to mental and physical health. Approximately 11,777 students (14.9% of the respondents) reported a diagnosis of depression in their lifetime. Of these, 32% reported being diagnosed in the past school year and 24.5% reported being currently in therapy for depression.14

There are significant limitations to applying these studies to graduate populations. First, the studies do not focus on graduate students alone. Both undergraduate and graduate students are included in the survey population, making the results less specific to only graduate students. Second, the ACHA-NCHA involves college students self-reporting their mental health difficulties. While using anonymous surveys tends to lessen the effects of interviewer and response bias, students who respond to these surveys may be the same kind of students that are more likely to seek mental health assistance. Similarly, there is inherent bias in the National Survey of Counseling Center Directors, because the only mental health trends being noted in this survey are those that are documented by campus counseling centers. Since many students with mental health disorders do not seek treatment at campus counseling centers or do not seek treatment at all, there is an inherent bias in this reporting of mental health evidence.

The student mental health study by Hyun et al. entitled “Graduate Student Mental Health: Needs Assessment and Utilization of Counseling Services” is a significant study because it focuses only on graduate students.5 The Hyun et al. study looked at mental health needs for graduate students at a large university in the western United States. Researchers were interested in graduate students’ self-reported need for mental health services, their knowledge of mental health services on campus, how likely the students were to use these services, and factors that made them more or less likely to utilize these services. The advantage of the Hyun et al. study is that data were generated by the students themselves and not by counseling center directors. This study may, therefore, more accurately capture the opinions of students with mental health disorders who do not seek treatment from counseling centers.

There are many significant findings from the Hyun et al. study.5 Almost half (44.7%) of the respondents reported having an emotional or stress-related problem during the previous year. Self-reported mental health needs were positively associated with the following factors: competition between students, time spent in school, and being female. Many students reported being aware of counseling services on campus; however, only 30.9% of graduate student respondents reported ever having used a mental health service while in graduate school. Hyun et al.5 concluded that mental health needs and the utilization of mental health services are significantly influenced by a number of factors, including gender, ethnicity, and chosen graduate school program. Graduate students in the Hyun et al. study also reported experiencing a high frequency of other negative emotional symptoms. Approximately 46% of graduate students reported feeling overwhelmed “frequently” or “all of the time” and 40% reported feeling exhausted. Hyun et al. found that there was a significant difference between the number of graduate students experiencing stress-related problems and the number of graduate students actually receiving mental health treatment. The study points to factors that make graduate student life uniquely isolating, including long hours performing research and long study hours, which can limit social relationships and exacerbate mental health problems.5

The strength of this study is that it examines graduate students in all academic programs, unlike previous studies that focused only on undergraduates or only on a specialized graduate program (like medical school or veterinary school). However, it is not known whether the data generated by this study are generalizable to graduate students in all U.S. universities.

The 2007 journal article, “Help-seeking and Access to Mental Health Care in a University Student Population,” by Eisenberg et al. concluded that most students with mental disorders did not receive treatment even in an environment with access to free mental health services.11 Like the Hyun et al. study,5 the Eisenberg et al. study focused on a large public university in the Midwest. However, unlike the Hyun et al. study,5 undergraduate responses were included. Approximately 30% of respondents reported needing professional help for their emotional or mental health. However, only half of these respondents reported actually getting counseling. These results are lower than in the Hyun et al. study5, suggesting that the Eisenberg et al.11 university students either enjoy better mental health than the Hyun et al. students, or that graduate students generally report more mental health needs than undergraduate students. The Eisenberg et al. study respondents had access to nearly universal health insurance and free basic medical and mental health services on campus, suggesting other barriers to mental health treatment.11

There are limitations to the Eisenberg et al. study.11 A relatively large proportion of graduate students (45%) did not respond to the administered survey. Females and graduate students responded more than others in the student population. Therefore, their views may be overrepresented in this study’s results. Another limitation to this study is that only formal mental health services were considered and no questions asked about informal sources of help such as family, friends or religious counselors. Eisenberg et al. recognized the need for future multisite research, and acknowledged that such research may need to examine the role of social stigma in mental health disorders.11

In 2009, Hunt and Eisenberg published a review study on college student mental health entitled, “Mental Health Problems and Help-Seeking Behavior Among College Students.” Hunt and Eisenberg were unable to identify any studies showing how student mental health relates to different factors in the academic environment.8 These factors include competitiveness, supportiveness of academic personnel, and field of study. However, they identified studies reporting the effects of personality traits such as perfectionism on student mental health. Such traits can affect the amount of psychological distress that students report as a result of their academic studies. Hunt and Eisenberg caution that risk factors for mental disorders among college students are also affected by genetic factors and the way in which pre-existing conditions interact with the collegiate environment. They stress that future studies need to focus on learning more about the role of these environmental factors on college students’ mental health. 8

Hunt and Eisenberg note the increasing prevalence and severity of mental disorders among college students with many students remaining untreated. In their research, they found the common barriers to help-seeking in student populations include a lack of a perceived need for help, being unaware of services or insurance coverage, and skepticism about treatment effectiveness. Decreased help-seeking behavior was also positively associated with self-stigmatizing attitudes.8

Finally, in 2018, Evans et al. conducted a study that focused on the prevalence of graduate students’ mental health issues and the role of key variables such as gender, mentorship relationships and perceived work-life balance issues.4 Evans et al. surveyed a total of 2,279 individuals (90% PhD students and 10% Master’s students). Respondents came from 234 institutions and 26 countries. This study confirmed that many graduate-level students report having anxiety and depression. In fact, this study showed that graduate students are more than six times as likely to experience anxiety and depression compared to the general population; 39% of graduate students reported having “moderate to severe” depression compared to just 6% of the general population. Furthermore, respondents with depression and respondents with anxiety were asked whether they agree with the statement, “I have a good work-life balance.” Of the graduate students who experienced moderate to severe anxiety, 56% did not agree with this statement versus 24% who agreed. Of the graduate students who experienced depression, 55% did not agree with this statement versus 21% who agreed.

This supports the finding that good work-life balance is significantly correlated with better mental health outcomes. Female graduate students are significantly more likely than their male counterparts to experience anxiety and depression. Additionally, the study revealed that strong supportive and positive mentoring relationships between graduate students and their advisors correlate significantly with less anxiety and depression. Of those graduate students who experienced anxiety and depression, only 36% and 33% respectively agreed with the statement that their advisor provides “real” mentorship as compared to 50% who did not agree with that statement. Faculty members should become better educated about mental health disorders and resources for graduate students. They can be better role models for their students by demonstrating healthier work-life balances and encouraging students to have open discussions about their mental health disorders. The authors call for a shift in the culture within academia to educate faculty about ways to improve the mental health of graduate students.4

Though there are limitations to the Evans et al. study,4 it represents an important attempt to not just document the prevalence of anxiety and depression in graduate students but to begin to question why this trend is happening. Because this is an international study, there is a risk that additional biases can skew reported results such as gender breakdown (i.e. more men than women may attend some foreign graduate programs) and cultural biases (students may be discouraged from reporting mental disorders in certain cultures). However, the importance of this study is that, unlike earlier studies that focused on within-institution student populations, this study looked at graduate student mental health in 234 different institutions. It is also a study that examined some of the key variables in graduate student life that make these students susceptible to mental health disorders. Recognizing that an unhealthy work-life balance is positively correlated with an increase in graduate student mental disorders is an important first step in looking at the possibility of making changes in graduate school programs. Evans et al. point to the reluctance many students feel about revealing their mental health struggles for fear of the stigma they face within the academic community. They stress that administrators and faculty must get better at identifying student mental health needs and providing adequate guidance and referrals as needed.4

In all of this research, the common theme is that a growing number of graduate students in the United States are struggling with serious mental disorders. The large number of graduate students who do not receive any mental health interventions should be of great concern to administrators and faculty. Mental health stigma can affect whether students feel comfortable reporting their symptoms or seeking help. Additionally, with earlier recognition of mental health disorders, many new students come into graduate programs already diagnosed with mental health disorders. There is currently no research that examines this subgroup of graduate students.

# Methodology

This essay is based on interviews with graduate students regarding their experiences with mental disorders in postbaccalaureate education. Mental disorders are defined in the PubMed MeSH database as “psychiatric illness or diseases manifested by breakdowns in the adaptational process expressed primarily as abnormalities of thought, feeling, and behavior producing either distress or impairment of function.”15 pg. 1

Recruitment for this study used flyers posted in graduate schools, and participation was voluntary. Anonymity was assured, and a small monetary stipend was offered to all participants. Advertising flyers were conspicuously placed in the buildings of the following University of Pittsburgh graduate programs: Public Health, Medicine, Business, Arts and Sciences, and Social Work. There were 14 responses. Two individuals were disqualified from the study because they were not current graduate students (they had already graduated). Two individuals were lost to follow-up. Ten graduate students completed the interview process.

Interviews were arranged and scheduled to be conducted in quiet and private locations that were convenient for the interviewees. Prior to the interviews, introductions were made and participants were reminded that the interviews would be audio recorded but anonymity would be preserved. Participants were allowed to stop the interview at any time. The following questions were developed and posed to the interviewees during the 60-90 minute interviews.

1. Tell me your name and what school/program you are enrolled in.
2. What made you want to pursue this degree?
3. Tell me about some good things associated with your program.
4. Tell me about some challenges associated with your program.
5. Had you heard about or thought about any of these challenges before you enrolled?
6. Has pursuing this graduate degree affected your mental health status? Please explain.

These questions were used as an interviewing framework, and follow-up questions were asked based on the responses of the research participants to clarify answers when unclear responses were given. Great care was taken not to influence any of the interviewees’ answers.

At the end of the last audio-recorded interview, all recordings were transcribed so the data could be reviewed and analyzed. Color coding was used to mark common responses to questions to aid in identifying trends in answering. The interviews were outlined in great detail to assist in comparing and contrasting responses.

There are clear limits to this study. No graduate students from the Business School or the School of Arts and Sciences volunteered to participate in this study. Participants were limited to current graduate students at the University of Pittsburgh with mental health diagnoses. No males volunteered to participate in the study. The results of this study are based on graduate student self-reporting.

# Results

Ten University of Pittsburgh graduate students with mental health diagnoses agreed to be interviewed for this study. Of the ten participants, four students were from the School of Public Health; three students were in the School of Medicine, two students were working on joint degrees (Medicine/Public Health and Public Health/Social work) and one student was in the School of Social Work (Figure 1). All respondents were female. Nine respondents were Caucasians and one respondent was African American.

Figure 1 Represented Programs of Study

The ten participating study subjects acknowledged having the following mental health diagnoses: anxiety (4); depression (4); ADHD (1); eating disorder/exercise abuse (3); alcohol abuse (1) (Figure 2).

Figure 2 Self-Reported Mental Disorders of Interview Participants

The ten participating study subjects acknowledged experiencing at least some of the following mental health symptoms during graduate school: anxiety, depression, attention difficulties, mood swings, irritability, suicidal thoughts, unhealthy eating, unhealthy exercising, unhealthy alcohol usage; headaches with aches and pains; imposter syndrome; thoughts of having a mental “breakdown”; fatigue, or repetitive intrusive thoughts.

Nine out of the ten study participants described themselves as being “overachievers,” “perfectionists,” or having “Type A” personality types.

Although not questioned directly about this issue, three out of the ten respondents mentioned during the interview that they had family members with mental health disorders.

Participants were asked to respond to open-ended prompts presented below.

## Question: Tell Me Some Good Things Associated with Your Program

When asked to talk about positive aspects of their program, students mentioned faculty, pass/fail grading, and peer support.

### Faculty

Students often commented on those special instructors who made learning interesting or that professor that showed extra support to the students.

Everyone here is super supportive…my advisors or professors have always been like, “Oh, I know people who do this” and they are happy to send emails introducing you to people…and it’s a small enough school where I’ve never felt lost in the crowd…I get very individualized attention, which is great. (R-H)

 I work in this lab because I was in a class taught by a professor who is one of my advisors…I have debilitating test anxiety…this professor was receptive to me showing I know the information in other ways…she was really, really accommodating and encouraged me even though I didn’t do well on the tests, we formed a good relationship. (R-C)

We have incredible faculty support. Our faculty, at the end of the exam, they had this giant ice cream party. They do a lot of mental health stuff. I can walk into any faculty‘s office anytime….they’ll just sit down and talk to me. (R-E)

### Pass/Fail Grading System

Students who were taking pass/fail courses instead of courses in which they would receive letter grades mentioned this as “something good” about their academic program. For some students, removing letter grades allowed them to focus more on the learning and reduced pressure about getting all “A’s.”

And at the same time, I think part of it is the pass/fail curriculum. It doesn’t matter if I get 100 or I get a 70. It all counts as the same thing. (R-E)

I think the pass/fail was super helpful, so I’m grateful for that, but then I did feel a little unprepared going into third and fourth year where grades are a real thing again. (R-B)

Students also mentioned grading as an item that could be improved.

I’m thinking of what else can you do to improve? ….you need to improve the grading**,** and the way tests are also assigned….kind of like removing all those restraints that make people not focus on learning per se… I have one class and she takes off points for just the smallest things and that’s annoying because you’re taking off five or six points for what, like a cover page citation of something like that…that’s close to a letter grade….and you start to worry like…..I need to do this and this and this, so I don’t fail. (R-A)

### Peer Support

Students mentioned the importance of feeling supported by their peers. Some students referred to a program called SHARP where class members were designated as peers to whom other students could go to if they were having problems.

I love my class…we are all so supportive of each other…. I really love that I never feel alone. (R-E)

There are these things call SHARP representatives, which are student peers who you elect as a student body that say, “We’re here to help with your mental health.” I would feel comfortable seeking them out if I needed it…I didn’t happen to. (R-F)

I enjoy working with my fellow students…and everyone I’ve met is really, really nice and doing really cool research….I think that’s the sign of a good department. (R-C)

## Question: Tell Me About Some Challenges Associated with Your Program

Graduate students identified a number of challenges with their graduate school education including work/life balance, isolation, frustration with requirements and course materials, lack of connections, grading, finances and competition (Figure 3).

Figure 3 Common Self-Reported Graduate School Stressors

### Work/Life Balance

Many students mentioned the heavy workloads in graduate school. Some commented on the difficulty of balancing their study demands with other responsibilities like a job or spending time with friends and family. Students also lamented not having more time in the day to do activities they enjoyed.

And also remembering you have a life outside of medical school…and dealing with things outside of school and making time for yourself, and time for your friends and for your family and for hobbies, interests and all of those other things….it feels like having twenty balls that you’re juggling in the air… and they’re big too. (R-E)

My time schedule does not allow me to participate in meetings… Again, time, it’s just not allowing me to have fun. You underestimate how much taking classes and then doing an internship…so there’s like little room for me to want to go outside and do something else, stay involved in the community. (R-A)

The pressures of med school….the amount we need to know and quickly...and to do well on the tests and do research on top of that, all four years….and be involved in extracurricular activities; trying to maintain relationships long-distance with my fiancé, family relationships, friends all over the country and then your fellow stressed-out medical school classmates.(R-B)

Unfortunately, I don’t have many hobbies anymore because med school consumes all my time. But, when I get the chance, I really like to read, like to eat…things like that. (R-F)

### Isolation

Graduate students mentioned feeling lonely and tired from spending long hours studying or researching by themselves. Some students had not attended undergraduate school at Pitt and did not know anyone other than fellow classmates. Some students decided to get roommates just to help with the loneliness. This was one of the most frequently mentioned stressors (Figure 3).

So then I moved back to Pittsburgh that August and it was back…meds weren’t doing anything, my classes hadn’t started, my roommate hadn’t moved in yet, so there was really nothing going on…Just kind of isolating and not doing anything and just getting worse, depression. (R-J)

My first and second years, I lived alone, which really allowed me to kind of dwell in that. You know, I would go to class…but then I’d come home for the weekend and not talk to anyone for two days…So I made a choice to get a roommate for a third and fourth year to help myself….and it helped. (R-B)

I guess I feel alone a lot of time in my department because of the lack of social connection to people…I did feel lonely a lot. (R-C)

### Frustration with Course Material and/or Requirements

These graduate students often mentioned being confused about program requirements. They did not like learning redundant material, nor did they appreciate getting negative or unhelpful advice from advisors. Students with joint degrees specifically mentioned the confusion of meeting the requirements of both programs. These kinds of academic frustrations were some of the most frequently mentioned stressors for graduate students (see Figure 3).

Our program is really messed up right now. We don’t have that many courses, our student coordinator is new, our advisor is also teaching classes and is a researcher, so there really isn’t a lot of guidance or direction…kind of disenchanted with it all. (R-J)

I’ve also had a couple professors tell me absolutely wrong information…I’ve been misled on the classes I need to take. (R-G)

My main challenge is basically, I feel like for a dual degree program, there is not enough coordination between the two schools and that is frustrating to me. Taking some of the same courses feel redundant—like taking the welfare policy and then coming back to public health and taking Health policy in management. (R-A)

There’s this overall conflict where we need to be prepared for our board exams; we also need to be prepared to actually be doctors and be on the clinical side of things…it’s just…it’s a lot... The research pressure definitely comes from multiple people in the administration. (R-B)

### Lack of Emotional Connection to Advisors and Frustrations with Faculty

Graduate students who were well connected with their advisors or professors often described these relationships as being helpful. Conversely, if graduate students did not feel emotionally connected, their mental health suffered for it. An advisor who is not helpful can frustrate a student. A professor who is not available to his/her students may appear as uncaring. Students report that a good advisor or empathetic professor can help them feel valued and can even direct a troubled student to mental health interventions.

A lot of the professors are disconnected with clinical practice….I find a lot of them [professors] condescending. The way they speak to students—like really—so how do they speak to clients? I’ve had a bunch of friends leave the program because of this. (R-G)

 Like, I don’t have a mentor. I don’t have the relationships that I could build out with my faculty. I’ve gone to the career services department. They did not help me. (R-J)

We don’t have consistent professors….a professor, chances are, isn’t going to know if I’m depressed because they don’t know what my normal affect is. (R-F)

It helps when other people just kind of give me…. not even huge recognition, but just like…hey, you’re doing a good job…and then I’m like good. (R-D)

### Grading Concerns

Graduate students reported feeling a lot of pressure to get good grades so they can keep scholarships, get into good residency programs and do well in their careers. Some of the medical school students specifically discussed the advantages of having their first two years being pass/fail but discussed the added pressure of returning to a traditional grading system for their last two years. Some graduate students commented on the frustration of subjective grading. Grades were definitely a stressor for these high-achieving students.

There are issues once you get into the clinical years, too…a lot of variability…like the grading is completely subjective so you have two students on the same rotation working with different physicians who might be doing an equally good job and get completely different grades. (R-B)

I do worry about that [when grades are no longer pass/fail] that there will be competition within my class, but it’s hard to say. (R-E)

### Financial Concerns

Some students mentioned the high costs associated with graduate degrees. Some students talked about the stress of having to go to school and work to cover their daily living expenses. Some students even mentioned that their job itself was stressful. For graduate students, financial concerns are a high stressor. When scholarships are connected to a high grade point average, this is another stressor.

And if you have a scholarship, the scholarship is dependent that you meet a 3.5, that’s a lot of pressure. How am I supposed to do that, do that and still find something to cover up my cost of living? Because rent is there, utilities are there, I have to eat and all those other stuff….so that’s just like a whole lot of anxiety right there. (R-A)

I don’t think it’s [stress] just because of school...it’s my job too…I can’t not work. Like I work here full-time and there’s just no flexibility for weekend or night field placements. (R-G)

I just have to do this and get through it [graduate school] and pay a million dollars. Then I might have a job. I’m trying to do three semesters plus a Global Health certificate…I was told it could be done, so I’m gonna do it. I don’t have the money to spend another semester here if I don’t have to. (R-J)

### Competition Within Class

Graduate students reported a lot of competition within their programs for residency positions, grades, jobs and field placements. They also reported struggling with no longer being at the very top of their class like they had been in undergraduate and high school. Students reported feeling more pressure to work harder in their classes in order to maintain the same grades that they had more easily achieved in the past.

I feel like college was a level where I didn’t have to study that hard…and then medical school took a lot more work and I did a lot more average…so that was an adjustment, too, coming from always top of the class….so I’m average among these peers… So that exam, I probably barely passed, and I think that was a little bit of a turning point. Like, “Okay, I want to do better than this, but maybe aiming for average is okay.” So maybe it took going downhill a little bit to accept being in the middle of the pack. (R-B)

I feel like a lot of us in these kinds of, in medicine and dentistry, we’re all pretty top of our class growing up…and then when you get to a big environment where everyone is kind of selected for, then you just don’t, it’s harder to handle. What I’ve heard from third years, no one is maliciously, it seems, competing with each other… you have to do well to get into good residency programs. (R-E)

The external pressure is [being] surrounded by a bunch of other people who have a similar, if not even more dramatic mindset than myself and it’s very easy to compare yourself to what other people know and feel inadequate. (R-F)

## Question: Had You Heard About or Thought About Any of These Challenges Before You Enrolled?

Overall, most students anticipated that the work in graduate school would be harder than undergraduate work. Most medical students mentioned hearing that medical school would be very demanding. Some of the other graduate school students expected the courses to be more difficult but had not anticipated feeling so overwhelmed. Some of the respondents reported missing their social activities, seeing their friends and family, or being involved with other activities in the community. Some students reported being dissatisfied with their program choice and feeling disappointed that their expectations for having a positive school experience did not match their reality. Some students commented on not liking the city environment.

I heard this before coming into med school…it’s like a fire hose, just spraying you in the face. That’s the speed of information you have to learn. And it was definitely true. And then by the time spring rolls around…that energy’s gone, but the pace of the information hasn’t slowed down. (R-B)

But I got here and I was pretty upset about the program. I’m not learning anything. Expectations did not match up with reality at all. In terms of scheduling…I don’t feel like I can go to anyone in that department and get help with anything…But I just generally wasn’t enjoying it. I’m still not enjoying the meat of what I’m here for, which is the education. I think a lot of it [the problem with the program] was being really excited about going and then realizing…they don’t have the courses I want…..and it’s partly getting here and realizing what I was actually gonna be doing for the next two years…oh, it’s not exactly what they say it’s gonna be. (R-J)

Maybe it’s just the school in general, because I guess, maybe, I had high expectations coming into Pittsburgh, and like what my grad school experience will be, and it’s just not been that. So, I was like, “Okay, fine, moving to Pittsburgh. Okay, be involved I guess in the community in different organizations and stuff like that, meeting more people that I feel connected to, again because of that involvement in the community, in different kind of school organization that interest me, that align with my interests as well, or maybe being really excited about the classes that I’ll be taking and stuff like that.” Those were some of my expectations...Well for one thing, just the environment itself in Pittsburgh, has just not been that great…like Pittsburgh is not necessarily like a visually or aesthetically pleasing city…and then winter time and no sun, it’s just depressing and demoralizing, so that was one. Number two….at orientation they had a bunch of student organizations and stuff but it was only one or two that I was really interested in…but my time schedule does not really allow me to participate in meetings….and general student organizations….I feel like they are not there for grad students, or I haven’t seen any one that I’m interested in or they’re not making themselves known. (R-A)

## Question: Has Pursuing a Graduate Degree Changed Your Mental Health Status?

Almost all of the students who participated in this study reported that graduate school had affected their mental health in a negative way. Students with a history of anxiety or anxiety-related disorders like anorexia and bulimia, excessive exercising, and generalized anxiety disorder reported a major flare-up of their symptoms, such as panic attacks, “breaking down and becoming hospitalized,” self-isolation, not attending classes, not sleeping, having aches and pains, feeling overwhelmed, and having racing or intrusive thoughts. Students would sometimes experience anxiety that was combined with depression. Depressive symptoms include crying spells, not getting out of bed, becoming suicidal, falling behind on class-work, not eating, having repeated thoughts of failing, or often feeling mentally and physically exhausted. One student with Attention Deficit Hyperactivity Disorder (ADHD) reported feeling easily distracted and overwhelmed with consuming so much information. This same student also described having panic attacks and admitted to drinking excessive amounts of alcohol. The students with eating disorders and exercise abuse admitted to having relapses in graduate school because “over- controlling” their eating and exercise gave them a feeling of having some control in school. All of these students described suffering from symptoms that they often did not share with others.

### Anxiety

Respondents described their challenges with anxiety, including aches and pains, inability to focus, racing thoughts, and panic attacks. Many individuals experienced intense physical symptoms that would interfere with their ability to work effectively. This caused them to fall behind in their studies, exacerbating feelings of panic and hopelessness.

My manageable anxiety looks like day-to-day is fine but then there are some blips…something happens…I’m just a little bit extra nervous about it. I tend to get a lot of physical symptoms with my anxiety, so chest tightness or stomachaches, headache, along with racing thoughts, those kind of symptoms. (R-B)

I have debilitating test anxiety; I haven’t finished a single test since undergrad, and I pretty much make up for that by participating in class and showing that I know the information…I’m just like constant chest tightness, physical and mental. (R-C)

When my anxiety got really bad…I would have a panic attack…it always felt like I had ants crawling all over my body and I just wanted to crawl out of my skin. It was so uncomfortable. (R-H)

And then the stress...does not help…like all of this, also, plays out, like my body…because I have like stress headaches, especially one side and like the last one I had…it started on Saturday...was there when I woke up on Sunday…still there on Monday, and…was there yesterday. And then like upper shoulder pain and lower back pain…yeah, that was the stress per se. (R-A)

I have an anxiety problem. I felt unsure of how I would perform on any standardized exams that determine your future. When you have anxiety, one exam feels like it’s almost your life, you know? Some of my anxiety and depression is being anxious and depressed about that fact that I have anxiety and depression. (R-F)

### Depression

Students reported numerous symptoms of depression such as feelings of hopelessness, a lack of physical energy, and suicidal ideation. Many respondents stressed that they had never experienced depression until graduate school, and they were unsure how to cope with the lack of energy or the feelings of despair. For some individuals who did not seek treatment in a timely fashion, feelings of depression turned to suicidality and resulted in hospitalization.

Depression looked like this: Laying on the couch, not wanting to do anything; not washing my dishes; letting things just kind of pile up…not making any effort to go out and see my friends. (R-B)

Getting out of bed was difficult; zero appetite. I had no desire to do anything; felt horribly hopeless...I thought it was going to go away after a few days and then it didn’t and that really freaked me out. (R-F)

It’s irritability and then depression; emotionally, mentally exhausted; physically tired; don’t feel like doing anything. (R-A)

It was towards the second half of my first year of medical school….clinical depression and probably generalized anxiety, all kind of fused together…I had lots of clinical symptoms, and then I started interacting with the counseling service here, but it was just too late by the time I went to talk with them. So I ended up pretty suicidal, so I had a hospitalization here in the psych hospital. (R-I)

### Attention Deficit/Hyperactivity Disorder

Attention Deficit/Hyperactivity Disorder only affected one respondent. This individual struggled with focusing on her studies and often found it difficult to stay on task.

I don’t really take my medicine for it [ADHD]. I don’t like the way it makes me feel….so there’s definitely some anxiety. (R-G)

I’m pretty easily distracted. I didn’t used to be that way. I think technology has a lot to do with it because…when we are consuming so much information, it alters your brain structure. (R-G)

Cell phones and computers put off radiation….I do actually have a lot of anxiety about that. I have a lot of anxiety about what we’re doing to our bodies, what we eat and what’s in the air…I just think I have a greater existential anxiety that I just think this world is absolutely going to shit…I just think the world has gone to shit….the more I learn, the more I’m like hopeless about what is going to happen to this county…especially working in social work. (R-G)

### Eating Disorders and Excessive Exercising

Eating disorders often started in middle school and high school, and, if previously treated, would become an active problem again during graduate school years. Students described feeling overwhelmed with work, often triggering problematic patterns of eating and exercising.

Before returning to grad school….feeling so isolated going back to my hometown….but I didn’t get a therapist because I was moving soon….but my running became unhealthy…I did it all the time and would beat myself up mentally for not doing it. If I took a day off, just saying horrible things to myself. I had friends but was stressed out by the program, and having to work part-time at the mall…the control thing was really big. The running— I would run like six miles a day every day…and if it got to be like ten at night and I hadn’t yet, I would still go out in the middle of the night and just run six miles. (R-C)

And so I guess I was informally diagnosed with an eating disorder when I was an undergrad. And that worsened with stress, for sure. And then, coming to med school, I think I went through a little bit of a relapse just because I was adapting so much to this new style of learning…I’m diagnosed with anorexia. (R-E)

And I broke my foot because I was over training and I was really underweight, so my body had started stealing nutrients from my bones…so I’d fractured my foot and then I started binge eating…and my anorexia turned into bulimia. Then I went to college and my boyfriend was a runner….and getting back into the competitive running just sent me back into spiral of disordered eating. My anxiety’s getting worse and my panic disorder’s getting worse…and I just stopped going to class. I couldn’t go to work. I was literally having three or four panic attacks a week…nothing was working anymore. (R-H)

### Alcohol Abuse

Only one respondent reported abusing alcohol. This is the same student who admitted that she comes from a family of individuals with addiction problems.

Honestly, I think part of it is alcohol…I’m not a heavy drinker during the week…I usually only go out on Saturday nights with my friends…that’s the only time I can see them because my schedule is so busy…so sometimes I drink too much and…I feel like shit. I drink twice a week, sometimes once a week…and couldn’t give you a drink count honestly. It’s a lot. (R-G)

## Question: Has Graduate School Changed Your Mental Health in Some Way?

Most students admitted that attending graduate school had worsened their mental health in some way. They also acknowledged that they knew many other students in graduate school who were experiencing fairly serious mental health disorders including suicidal thoughts. There were at least two graduate students who mentioned some positive aspects to graduate school: learning techniques to help cope with their symptoms and having empathetic faculty and administrators who supported the students in some way.

Most of my friends have gone to therapy at some point by now or tried an SSRI. Everybody’s doing it...but never told anyone in the administration at the school. (R-B)

I want to be in school forever, so that’s why I’m doing this program and also the social networks that you have…I definitely attribute that to helping my anxiety for sure. I wasn’t in therapy in college, but I was in high school and grad school. Pursuing a degree…has affected my mental health…because there’s a lot of uncertainty, so that changed it for the negative, because I don’t do well with uncertainty, but I have a really flexible and understanding team of advisors, and also just flexible workspace. My advisors know I see a therapist and they’re encouraging about that. (R-C)

Pursuing my degree has changed my mental health status—yes and no…what is helpful is I have found less stigma talking about my mental health because I have made connections with other people in my program that have experienced similar things. And in the public health sphere, there’s a lot of conversations about mental health. I think graduate school is obviously a very stressful time in general. I’ve noticed my anxiety has definitely greatly magnified…I put a lot of pressure on myself to perform to a high standard. (R-D)

So, my first year of my master’s [was] always like, if I couldn’t get an A, it didn’t matter because everything else was just worthless, right? And if the research didn’t turn out perfectly, what was the point? If my advisor didn’t absolutely love me, then they must hate me…so it was perfectionism…very much this all or nothing mindset—either one-hundred percent or just a catastrophe. My mental health has been changed for the better…we do talk about mental health a lot. I have classmates who are very open about their mental health struggles…we talk about the systems that are in place that make certain people more likely to have mental health disorders…and then I learn about things academically, but I can apply them to my own life. (R-H)

I guess just put on the record that I saw mental health problems being really common. The partner that I had was pretty actively suicidal and actually has done really well since then, but I knew most people that were chronically depressed and having lots of challenges…I saw it in a lot of people. And a lot of people leaving and going elsewhere because they didn’t want to be here anymore. But I was very much like, “I am not staying here. I’d much rather give it a shot somewhere else than stay here.” (R-I)

 So once [graduate school] classes started, I went back to my psychiatrist at Pitt and my therapist…the whole thing ended extremely poorly….my psychiatrist kept upping and upping my dosage of Zoloft. And I was just going, “this isn’t gonna work. It’s not working.” She wasn’t listening to me…So, I went back because things were starting to get worse and I knew I needed a medication change or an increase…so as soon as I added that medication [Wellbutrin], I was constantly nauseous, I wasn’t sleeping. I wasn’t eating. So, I’m sure a lot of it just came from that and feeling so awful…I wasn’t going to my classes. I wasn’t doing this. Things were bad before but this thing was supposed to help. It seemed like it made it worse. I truly think it was the medication. (R-J)

### Barriers to Getting Help

Most graduate students reported being in therapy or taking medications for their mental disorders. However, three students were not in treatment at the time of the interview, and they had stopped taking their medications. Students listed many reasons why they were not in treatment, including financial cost of therapy, lack of accessible mental health resources, disliking their therapist or psychiatrist, and feeling too depressed to find resources on their own. Many respondents were also self-conscious about admitting to faculty and administrators that they had mental health disorders for fear of academic repercussions. Some students described not wanting to share this information with other peers because of the stigma of having a mental disorder.

The med school has all these resources available that I just didn’t use…There is a therapist who specifically works with the med students for free, but it just didn’t really appeal to me…There was something about it being with the medical school that just was like, “Nope, not for me.” I found someone outside the medical school. Now, SHARP is our student [peer-led] health program…a couple of classmates who are designated, that you can go talk to if you’re having problems. I wasn’t comfortable going to classmates. There’s also a couple of people in the medical school who people typically go to if they’re struggling and I think I was unwilling to admit that. And I definitely didn’t want to admit it to them, so I didn’t go. (R-B)

The counseling center was…almost full. It was hard to get into individual therapy because they just had only group available and stuff like that. They had a wait list, she did give me referrals. With the insurance I have, the co-pay is not that cheap. I can’t do therapy on a weekly basis. (R-A)

They claim, “Oh, we have all these services” but when you go in, there’s really not that many psychiatrists…there’s no way they can adequately serve every single one of them without being a little pill factory. She was telling me, “oh we have fifty walk-ins a day.” (R-J)

And finding someone [a therapist] accessible because I don’t have a car…so you have to be on the bus line….and I have class all day. “Are you [therapist] able to meet in the evenings…because of my schedule and everything?” (R-A)

I didn’t do my undergrad here….I don’t know where other things are on campus. We are aware that student counseling exists, but it feels like that’s for undergrads and not a resource for us. I know there are things like grad student government and grad student organizations, but nobody ever talks about them here…so I wish maybe we just had a psychologist in this building who dealt with public health grad students, who was familiar with our program and our career tracks. (R-H)

I had my supervisor at my field placement help me look around for a therapist as well, and she gave me a list. I reached out to some and I also found someone online as well. (R-A)

The counseling service here doesn’t take people back once they’ve reached that level of care [hospitalization with suicidal thoughts] because they don’t feel comfortable providing services. So, then I participated with a psychiatrist and outpatient therapist for little while during the summer. And then I stopped because I didn’t feel they were helpful for me. (R-I)

So, I stopped seeing my therapist…because I felt like I had completely lost all trust in the relationship. As soon as I walked in and I saw that psychiatrist, and she said, “you’re here because school’s too hard,” I immediately didn’t want to see her anymore. And I didn’t make appointments that I knew I needed to make because she made me feel so awful going in there, you know? Very condescending. (R-J)

I think I can handle it [bulimia] on my own. If I genuinely felt that I benefited from the whole world knowing, then maybe I would tell everybody. (R-E)

### Interventions That Helped

Most students take medications or see therapists for their mental health disorders. However, some graduate students use coping skills that they have learned in school to help themselves. Students mentioned other important supports in their lives like friends and family members. Helpful advisors were acknowledged. Two of the most common interventions mentioned, outside of therapy and medications, were helpful mentors and a supportive, open work environment.

I had a patient leave the hospital AMA….and I talked with my attending afterwards, like, “I am really upset about this,” and it was helpful to just talk it through and get some reassurance that I had done everything that I could because that was sort of my question, “was this my failing?” (R-B)

And so I’ve really valued talking closer on one-on-one or even a small group setting with professionals and professors that have already done this [graduate school] and they are really helping navigate [being in graduate school]….so I have found those resources and those have been wonderful. (R-D)

I guess it was more of, they making the resources known to us, but then, it being our responsibility to act on them, rather than someone reaching out to me as much. My PCP ended up fulfilling that role for me instead of a psychiatrist. Oh the SHARP [program]? I just didn’t [use it]. I think I relied more on my friends and family. (R-F)

Then I found this really great social group, and I found the drive to hang out with them and do things with them and really diverse social activities that I would say yes to that and then [excessive] running just kind of fell away. (R-C)

I have a really great mentor who has helped tremendously and he’s really someone that I can go to. I think just with either insecurities or when I’m navigating new territory. (R-D)

My dad also has anxiety, and when I had a panic attack, I would just call him because otherwise I would just literally curl up into a ball and sob, where he would tell me to breathe and he would just tell me a funny story to take my mind off of whatever. So that was sort of my coping mechanism. (R-H)

I’ve done a lot of mindfulness stuff, a lot of movement and yoga-based therapies, I guess just a lot of psycho education. I use a lot of dialectical behavioral therapy skills, and some general anxiety therapy skill—kind of like CBT-based stuff…I do a lot of personal work at home…just not with any health care professionals…I manage it on my own. (R-I)

## Suggestions for Improving Graduate Student Mental Health

Respondents suggested many ways to improve the mental health of other graduate students. Recommendations for academic changes included less redundancy in course material, more pass/fail courses, and more meaningful mentor-student relationships. Most of the study participants felt that mental health treatment options should be more plentiful and accessible for graduate students. Almost all of the respondents felt that it was important to have open dialogues about mental disorders in their graduate-level classes.

The whole testing thing, it adds pressure…maybe different forms of testing…streamlining the classes, some of them [graduate classes] can be unnecessary…Accessibility to treatment, therapists being flexible in their timing, evening hours…few people offer weekend hours, more financial incentives the school can give students because the financial stress is huge, professors being more flexible…knowing that different people might be going through different things and changing the grading system….why in grad school are we having like A plus, A minus…like just A’s, B’s, C’s should just make it easy. (R-A)

I think just more openness between maybe students or other faculty about their experiences with mental health or just openness, I think is the big thing. I think maybe having an imposter syndrome workshop or something or more validation from, I guess, professors. (R-C)

I think it would be beneficial if there were more people willing to have that mentorship relationship with graduate students. (R-D)

Maybe normalizing the feelings rather than normalizing the disorders would be appropriate…it is okay to feel like this sometime and if you ever feel like this, here are some things that you can do to cope. (R-E)

I think if there was someone at GSPH (Graduate School of Public Health) that could direct students to these [mental health] services…just something so there is some mental health visibility at GSPH. Or someone at GSPH that you could go to, not necessarily someone that was a mental health provider, so you could have them provide you with a resource if your insurance doesn’t work with the school or someone that could tell you how to schedule at the school. (R-J)

# Discussion

This study supports the finding that being in graduate school can exacerbate mental disorders for students. Respondents included only graduate students who self-identified as having mental disorders. Most previous studies have focused on broader student populations, including all college, graduate, and international students.7,9,11,14 One advantage of interviewing only graduate students with mental disorders is that these qualitative interviews provide important insight into how some of the academic factors at graduate school such as relationships with mentors, increased competitiveness, and unfavorable work/life balances interact with personality traits like perfectionism to affect mental disorders in graduate students.

In the 2009 Hunt and Eisenberg review,8 the authors could identify no previous studies showing how student mental health relates to other characteristics of the academic setting. The authors identified the following as important academic characteristics to be studied: enrollment size, competitiveness, supportiveness of academic personnel, and field of study.8

During this study’s interview process, the respondents frequently commented about the increased competition in graduate school. Almost all of the students self-identified as being “perfectionists” who struggled with anything less than achieving top grades. The few respondents who experienced positive mental health effects from graduate school identified meaningful relationships with advisors, mentors or faculty as a significant intervention. Public health students stated that studying imposter syndrome or having open discussions about mental health in classes helped them feel supported with their mental disorders. Medical students felt that learning about different mental health therapies enabled them to “self-medicate.” Subsequently, this study appears to agree with earlier hypotheses4,8 that academic and personality factors affect graduate students’ mental disorders.

Like previous research on graduate students,5,11 there are important limits to this study because of the inherent problems with drawing conclusions from a small sample. Despite efforts to include a broad sampling of graduate students from five different University of Pittsburgh fields of study, only female graduate students responded and there were no respondents from the Business School or from the School of Arts and Sciences. This supports the findings of Eisenberg et al. that females respond more than others in the student population.11 Since our respondents were from fields of study more likely to have classes about mental disorders (Public Health, Social Work, and Medicine), there may be inherent bias in this study because these graduate students are better educated about mental disorders and may be more willing to self-identify as having a mental disorder when compared to the broader graduate student population. Finally, this study’s respondents were from one institution, and it is impossible to know whether the results are typical of other colleges and universities.

There were some common graduate experiences for all respondents such as attending an urban school or noting the increased amount of work in graduate school, but there were differences in graduate school experiences across various fields of study. Medical students, for example, commented on unique mental health interventions that were available only to them, such as the SHARP program (a peer-mentoring program) or having psychologists available within their school. The medical students also have pass/fail classes for their first two years of medical school, which is different than the other respondents’ experiences. The Public Health students frequently mentioned the openness of mental health discussions at their school, but at least one student recommended having a therapist in the Public Health building available to students with mental health needs. Even in this smaller study, then, students at the same university were having different graduate school experiences that affected their mental disorders as a direct result of their chosen academic field.

Almost all respondents reported an unhealthy work/life balance because of increased workloads, increased competitiveness in their graduate programs, greater financial challenges, and reduced free time for doing activities that they enjoy. This supports the current research on mental disorders in graduate students. The Evans et al. study from 2018 reported that their respondents with depression and anxiety were asked if they felt like they had a good work/life balance, and the majority answered “no.”4 In the Hyun et al. study, approximately 46% of graduate students reported feeling overwhelmed frequently or all of the time, and 40% reported feeling exhausted.5 Regardless of their chosen academic field, all respondents from this study expressed feeling overwhelmed with work and other responsibilities. Some students mentioned the difficulty of holding down jobs while attending graduate school. Financial concerns often added to students’ unhealthy work/life balance because of added hours working at outside jobs or because some students felt greater pressure to keep their grades high enough to maintain their scholarships (which required a certain GPA). Almost all respondents reported being tired, feeling panicked about making deadlines, or being overwhelmed with the amount of information they were expected to learn in short amounts of time.

Like the Hyun et al. study, which found that increased workloads can lead to social isolation,5 the respondents from this study often reported that their increased graduate-level workloads made them feel isolated, and this often adversely affected their mental disorders. Some respondents felt that having roommates helped to alleviate some of the loneliness. Other individuals found that friends and social activities helped. Only one student reported that she found the isolation helpful and important for focus. However, this student also noted being very unhappy in medical school and was hospitalized after her first year of graduate school for a “mental breakdown.” Overall, respondents who were happier in their graduate programs specifically mentioned having close relationships with their peers and also having supportive mentors.

In this study, strong, supportive, and positive mentoring relationships between graduate students and their advisors were related to less anxiety and depression. Respondents commented on the important role that mentors played in their mental wellness. One student with debilitating test anxiety spent much of her interview commenting on an understanding professor who allowed her to demonstrate mastery of course knowledge by methods alternative to traditional testing. Her lab supervisor provided her with a flexible and understanding workplace, and he also encouraged her to see a therapist. This is in direct contrast to another respondent who complained that she did not have a mentor or a meaningful relationship with any of her faculty. When she had a mental health crisis, she felt that she had nowhere to go and lamented that her department did not really care about her. The research supports that graduate students do better with their mental health when they have understanding mentors and empathetic advisors as positive supports.4 One of the two students in this study who felt that graduate school had some positive effects on her mental health was the student with the understanding professor and advisor. Many students stated that getting positive feedback and having understanding and concerned faculty and administrators were good for their mental health.

Respondents mentioned three main positive aspects of their programs, but they reported many more challenges. Interviewees affirmed that extra support from faculty, pass/fail grades (for medical students only), and peer support were important for their success and mental health. Yet, respondents also reported some of these same items as challenges in their programs. Many graduate students felt burdened by a lack of emotional connection to advisors and frustrated with uncaring faculty, grading concerns, and competition within their class. This could mean that these issues that are both challenges and positive aspects of graduate school are some of the most important concerns for students with mental disorders. When these factors are positive and helpful, such as having supportive, caring faculty, this adds to feelings of acceptance and inclusion. Conversely, when faculty are less available, respondents feel challenged because they lack an emotional connection and experience frustration with advisors and faculty. Likewise, the pass/fail courses, mentioned by some respondents as a positive aspect of their graduate education, were not available to other students. Many of the individuals raised grading concerns as one of the challenges of their programs. Finally, the peer support that helped some interviewees cope with the difficulties of graduate life were noticeably lacking for the respondents who reported stress from competition within the class or from isolation. It seems that graduate students seek support from anywhere that they can find it—fellow students, administrators, or faculty. Therefore, educational programs looking to decrease their graduate students’ stress levels should be finding more ways to make their students feel supported and connected.

Some of the challenges that respondents reported seem fairly easy to correct. Frustrations with course material and degree requirements were mentioned frequently. For students pursuing dual or joint degrees, administrators could examine whether redundant classes could be eliminated and could reconsider degree requirements. Administrators looking to make positive changes to their program should look to program requirements and courses offered. Streamlining these requirements and providing more financial opportunities for graduate students could play an important role in reducing the burden of mental disorders. Some challenges, such as not liking a school’s urban environment or wanting “more sunshine,” cannot be as easily fixed. Luckily, these challenges were mentioned relatively infrequently (see Figure 3).

One of the most consistent findings from this study was that respondents almost universally reported that they were “Type A” perfectionists who struggled significantly with increased competition and faculty expectations. Since the study population includes only graduate students, it makes sense that these individuals would be high-achieving. Interviewees reported receiving good grades in high school and college, enjoying many extracurricular activities, and having positive interpersonal experiences before attending graduate school. However, in graduate school, their experiences changed. Respondents stated they were no longer always near the top of their classes. This impacted how they felt about themselves and challenged their self-identity as a top student. Additionally, they put in long hours studying in order to master harder course materials and to keep up with heavier workloads. This meant that many respondents spent less time with supportive friends and family members.

Perfectionist students often commented about internalized beliefs that they needed to have a 4.0 GPA to be successful and nothing short of that was acceptable. Dealing with “less than perfect” for such students increased anxiety and depression symptoms. This may be why faculty support and understanding can be so critical. Some graduate students may be dealing with academic imperfection for their first time. Caring teachers and mentors can make all the difference for these kinds of students. Graduate school programs should find ways of normalizing these feelings of anxiety and depression. When respondents felt good about their academic programs, it was often because they were learning how to cope with their feelings of anxiety and depression from open discussions about mental disorders in their course studies and from supportive individuals surrounding them. When mentors were able to help interviewees find therapists or encourage their mentees to seek counseling, these students reported greater satisfaction with their programs and fewer negative effects from their mental disorders.

Most of the graduate students interviewed admitted that a lot of the pressure that they experienced in their courses was internal pressure that came from themselves. Some students stated that starting a graduate program was probably the first time that they experienced anything short of excellence. These students worried that, if they failed, they would disappoint themselves and their parents. According to Hunt and Eisenberg, studies have shown that personality traits like perfectionism affect the amount of psychological stress that students report as a result of their academic studies.8 In fact, being a perfectionist seems to even be a barrier to seeking mental health treatment. It is difficult to be a “perfect” person if you need to go to someone else for help. As one respondent stated:

I guess I don’t want people to see me as that person…the whole perception, the stereotype of people with an eating disorder. I don’t want to be stereotyped that way. There’s this whole negative stereotype about the perfectionist, the person who’s super anxious, worries about everything. (R-E)

Studies show that the stigma surrounding mental disorders is frequently a barrier to treatment.5,8,12 Some of the respondents mentioned going to outside therapists and psychiatrists instead of using university counselors because it was more private. Other individuals felt supported in their public health courses and specifically mentioned that their studies enabled them to be honest about their mental disorders. It seems, therefore, that faculty, mentors, and even didactic course material may be able to play a role in lessening the stigma of mental disorders.

This study did not specifically inquire about mental health treatment or barriers to that treatment, but the interviewees did discuss these issues at length. The Eisenberg et al. study found that there are more barriers to mental health treatment than not having health insurance or not being able to pay for mental health services.11 This study seems to support this conclusion. Only one of the respondents in this study mentioned the cost of a co-pay as a deterrent to seeking counseling. One other individual mentioned the difficulty of finding a mental health professional willing to take her insurance from New York. Other barriers to treatment were mentioned much more frequently including too few therapists at the student counseling center, no therapists with evening and weekend hours, difficulty in scheduling therapy when feeling depressed or overwhelmed, and not liking their last school-appointed psychologist.

Many respondents leaned on family and friends when they needed extra support in school. A few graduate students were able to turn to helpful mentors. Ultimately, the majority of the study participants were able to find assistance for their mental health needs. Since all of our respondents are receiving mental health treatment off campus with private psychiatrists and therapists, these findings would tend to challenge earlier mental health studies that used student counseling center statistics exclusively as a measure of student mental health demands, which may underestimate the extent of the mental disorder problem.13

Based on the findings of this study, a few recommendations can be made to improve the effect of graduate school on students’ mental disorders. First, academic programs should review their course requirements to eliminate repetitive material, examine whether some pass/fail courses could be added, and increase opportunities for mentors to interact with students. Second, more emphasis should be given to training advisors and faculty about mental disorders and mental health resources on campus and in the community. These mental health resources should be well-publicized for all students. If possible, peer-mentor programs should be available for every program. More social events should be offered for graduate students to reduce loneliness and isolation. Finally, there needs to be more education about mental disorders to decrease public stigma and to encourage more treatment.

# Conclusions

Mental disorders are on the rise in the U.S. population, and graduate students are at an even greater risk to experience depression and anxiety when compared to the general population.4 Graduate students function in demanding academic programs where they do not often enjoy a healthy work/life balance. They frequently report feeling overwhelmed or exhausted.5 Away from family and friends, these students spend long hours working to achieve high grades in a competitive environment. Without the support of loved ones nearby, many students become isolated and depressed. Some students can experience suicidal ideations resulting in hospitalization. When graduate students leave programs because of their mental disorders or perform lower academically, our society loses valuable human productivity.9 Thus, understanding how graduate school affects student mental disorders is a critical public health issue.

Graduate students at the University of Pittsburgh were asked to participate in a study that would investigate how graduate school affects students’ mental disorders. Recruitment for this study was done using flyers posted in graduate school buildings, and participation was voluntary. Ten respondents were interviewed about the various aspects of graduate life with a mental disorder. Questions were asked about the positive aspects and the challenges of their programs, whether they had heard or thought about any of these challenges before enrollment, and how the respondents felt their mental health had been affected. Generally, interviewed graduate students felt that their postbaccalaureate education had exacerbated their mental disorders. The biggest challenges that they reported included an unhealthy work/life balance, extended periods of isolation, frustration with course material and degree requirements, financial concerns, and lack of mentor and peer supports. Almost all of the interviewees described themselves as “Type A” perfectionists who struggled with no longer being at the top of their class.

There are limitations to this study that must be noted. First, only ten respondents participated in the interviewing process. This is a small sample size. There is no way of assessing whether these ten individuals are similar or different from the rest of the graduate student population. Additionally, all respondents were female. This supports other research findings that females tend to be more responsive than others in the student population.11 All interviewees were also in graduate programs that study mental disorders and counseling. Such students may be more likely to report their mental disorders because they may be more knowledgeable about their conditions than the rest of the graduate student population. Finally, all of the respondents in this study are from the same institution. Therefore, generalizing the findings of this study to other colleges and universities should be done with great caution.

More studies are needed to better understand how different factors in the graduate school environment interact to affect students’ mental health. Important variables for future study include environmental factors such as heavy workloads and competition within a class.4,8 How these different variables interact with a student’s own personality traits or genetic background may determine how graduate school will affect a student’s mental disorder.8

The adverse effects of graduate school seem to be ameliorated by supportive mentors or empathetic peers. Since studies have shown that strong, supportive, and positive mentoring relationships between graduate students and their advisors correlate significantly with a reduction in mental health symptoms, the entire culture of academia may need to change.4 Instead of universities rewarding faculty members for spending long hours on research, an emphasis should be placed on them becoming better mentors for their students. This may necessitate more training, but its rewards are potentially numerous. Universities wishing to promote better mental health for their graduate students could organize more student social activities, initiate more pass/fail classes, and establish peer-lead support groups. Correcting any staffing and scheduling issues at university counseling centers may also be helpful. However, university mental health facilities will not be as successful as possible until students no longer worry about anonymity and the stigma attached to having a mental disorder. More research is needed to explore how stigma impacts graduate students’ mental disorders, and more work is needed to eliminate mental health stigma in our society as a whole before this problem can be solved.

 Until we eliminate the stigma associated with mental disorders, many students will go untreated. The students interviewed for this study repeatedly expressed negative feelings about having a mental disorder and were fearful of possible repercussions if their medical conditions were discovered. Students often struggle alone with their symptoms. We must work together as a society to bring this issue out of the shadows of misinformation and judgment and into the light of understanding and acceptance. This report ends, then, with one of the respondents’ own laments:

Something tells me that more than just me has a mental health diagnosis in some way, but no one talks about it. If there is someone else who struggled with the same things that I struggled with in grad school, that would be so great. It would be nice to talk to somebody about it since there’s still a lot of stigma around psychological health. Even though we’re in the field of medicine, there’s still people who don’t like to talk about it…I just don’t want people to see me in a different light. (R-C)

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