

Postgraduate Students' Mental Health: A Call to Awareness and Action

Asem A. Alageel*

Department of Psychiatry, College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh KSA

Abstract

Background: Postgraduate students face significant mental health challenges, including high rates of depression, anxiety, and stress. These issues are exacerbated by academic stressors, such as job insecurity, funding difficulties, and imbalances in work-life dynamics. Mental health conditions like major depressive disorder (MDD) and generalized anxiety disorder (GAD) are particularly prevalent and often co-occur in this demographic. **Aim:** This review explored the prevalence, contributing factors, and potential interventions for mental health issues among postgraduate students, focusing on depression, anxiety, and their associated risk factors. **Subjects/Materials and Methods:** This review synthesizes data from multiple studies, analyzing the mental health conditions of postgraduate students worldwide. Key metrics include the prevalence of MDD and GAD, their contributing factors, and associated challenges, such as sleep deprivation, smartphone addiction, and academic pressures. Interventions for improving mental well-being, such as resilience training and wellness programs, are also discussed. **Results:** Postgraduate students experience elevated rates of mental health disorders, with approximately 41% reporting moderate to severe anxiety, 34% exhibiting symptoms of depression, and 25.7% reports suicidal ideation. Contributing factors include lack of awareness of mental health challenges, smartphone addiction, and excessive academic stress. Interventions like resilience programs and effective time management strategies may mitigate these issues. **Conclusions:** The findings highlight the urgent need for academic institutions to implement structured wellness programs and provide comprehensive mental health support. Raising awareness, fostering resilience, and addressing systemic academic challenges are essential to improving the mental health outcomes of postgraduate students. Further research is required to develop targeted interventions for students.

Keywords: Postgraduate student, mental health, depression, anxiety

Introduction

Numerous studies indicate a connection between education and health, demonstrating that higher educational attainment correlates with increased life expectancy and healthier lifestyle choices.^(1, 2) Stress among academics, particularly affecting younger researchers, is a significant issue highlighted by research from Bozeman and Gaughan⁽³⁾ and Reevy and Deason.^(4, 5, 6) Early-career researchers

face job insecurity, difficulties balancing work and personal life, strained relationships with supervisors, tight deadlines, and challenges securing funding.⁽⁶⁾

What is MDD?

Major Depressive Disorder (MDD) and Generalized Anxiety Disorder (GAD) considerably affect mental health and overall well-being. The American Psychiatric Association defines MDD as a

*Corresponding author: asemalageel@yahoo.com

grave medical condition that disrupts an individual's thoughts, behaviors, and emotions. It engenders profound sadness and a marked loss of interest in previously enjoyable activities. Other symptoms include insomnia, decreased appetite, fatigue pervasive guilt, and suicidal ideation.⁽⁷⁾ The severity of MDD can culminate in cognitive impairments that obstruct an individual's capability to fulfill daily responsibilities at home and in the workplace. These effects may precipitate physical and emotional challenges adversely impacting their overall functioning and quality of life.^(7, 8) A nationwide study of 36,309 Americans determined that the prevalence of MDD over 12 months was 10.4%. Over a lifetime, it was 20.6%.⁽⁹⁾

MDD is anticipated to be the leading cause of the global disease burden by 2030.⁽¹⁰⁾ This projection underscores the pressing necessity for effective strategies and interventions to address this prevalent mental health condition. Moreover, MDD significantly correlates with suicidality, as evidenced by studies by Bolton et al.⁽¹¹⁾. Additionally, MDD is associated with non-suicidal self-harm, as reported by Nitkowski and Petermann⁽¹²⁾ and others. These correlations highlight the severity of MDD and reinforce the imperative for comprehensive mental health support and preventive measures efforts.

What is GAD?

GAD is a mental health condition characterized by persistent, excessive, and often irrational worry about a variety of events or activities. This anxiety can significantly disrupt daily life. People with GAD frequently worry about routine issues, such as health, finances, relationships, family matters, work challenges, or the

possibility of death. The conditions diagnostic criteria comprise constant worry, restlessness, difficulty sleeping, fatigue, irritability, sweating, and trembling.⁽¹³⁾ Anxiety disorders, including GAD, are common, affecting more than 30% of adults at some point in their lives. They are considered the most widespread mental health issues diseases.⁽¹⁴⁾

GAD often appears alongside other mood disorders. Studies show that over 70% of people with MDD also report anxiety symptoms, and between 40% and 70% fulfill the diagnostic criteria for GAD.⁽¹⁵⁾ This significant overlap emphasizes the relationship between these disorders and underscores the need for thorough assessment and treatment strategies for those affected by both GAD and MDD.

Prevalence of Stress and Anxiety among Postgraduate Students

Numerous studies have underscored the high levels of anxiety and stress prevalent among graduate students. Evans et al.⁽¹⁶⁾ used the GAD-7 scale, finding that 41% of graduate students were facing moderate to severe GAD, a rate six times higher than that of the general population. Smith and Brooks⁽¹⁷⁾ in their survey highlighted that many graduate students dealt with stress from their academic responsibilities that surpassed their coping abilities and resulted in a broader incapacity to handle life stressors. Barreira et al.'s ⁽¹⁸⁾ study of doctoral students revealed that 62% reported feeling concerned about their academic responsibilities, even when they were not actively engaged in work, based on survey responses from both students and faculty.⁽¹⁸⁾ Furthermore, Barreira et al.⁽¹⁸⁾ discovered using Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorders-7 (GAD-7) that around

18% of graduate students in economics, natural sciences, and engineering reported symptoms of moderate to severe depression and anxiety, notably higher than previous studies within the same age group. Additionally, Garcia-Williams et al.⁽¹⁹⁾ used PHQ-9 scale and five items related to anxiety scale and found that more than half of the graduate student respondents showed symptoms of anxiety, with 34.4% displaying moderate or higher levels of depression.⁽¹⁹⁾

These studies suggest that graduate students experience more anxiety and stress than the general population and undergraduate students. The results emphasize the need for enhanced support and resources to tackle the mental health issues that graduate students encounter students.

Levecque et al.⁽²⁰⁾ performed an extensive study on the mental well-being of PhD students in Flanders, Belgium, comparing them to control groups from other educated demographics, including the general population, employed individuals, and students pursuing non-PhD degrees.⁽²⁰⁾ The researchers used the General Health Questionnaire (GHQ-12) to evaluate mental health, which assesses 12 symptoms. Their findings revealed that PhD candidates face a substantially greater risk—between 1.5–4 times—of exhibiting each of the 12 symptoms linked to anxiety and depression when contrasted with the other groups.⁽²⁰⁾ Additionally, 32% of doctoral students reported experiencing four or more symptoms, indicating a significant risk for depression and other common mental disorders. A 2015 survey from the University of Arizona found that most graduate students, precisely 73%, reported stress levels above the average.

Moreover, 23% characterized their stress as excessive “tremendous.”⁽¹⁷⁾

Prevalence of Depression among Postgraduate Students

The findings indicate that postgraduate students face a considerable risk of depression, with reported depressive symptoms ranging from 6.2% to 84.7%. A meta-analysis analyzed 37 primary studies, comprising 41 independent reports.⁽²¹⁾ No report reached high quality; three were assessed as medium-to-high, 20 as low-to-medium, and 18 as low. In total, the meta-analysis covered 27,717 postgraduate students.

The overall prevalence rates for depression symptoms are as follows: 34% for general symptoms (95% CI: 28–40, $I^2 = 98.6\%$), 27% for mild symptoms (95% CI: 22–32, $I^2 = 85.8\%$), 13% for moderate symptoms (95% CI: 8–21, $I^2 = 97.3\%$), and 8% for severe symptoms (95% CI: 6–11, $I^2 = 81.0\%$).⁽²¹⁾ Research indicates that doctoral students experience depressive symptoms more frequently than master's students, with rates of 43% compared to 27% ($Q = 2.23$, $df = 1$, $p = 0.13$). The overall estimate for depressive symptoms prevalence was identified as 34% (26,579 individuals; 95% CI: 28–40), highlighting significant variability among the studies ($Q = 2683.40$, $p < 0.01$; $\tau^2 = 0.67$, $I^2 = 98.6\%$).⁽²¹⁾ Moreover, the prevalence of depressive symptoms among postgraduate students has remained stable since 1980–2020.⁽²¹⁾

Depression Awareness

Depression Literacy assessed participants' comprehension and awareness of depression. A study on postgraduate students in Saudi Arabia revealed that 46% of the 517 participants screened positive for depression using PHQ-9, significantly exceeding the rates found in the general

population.⁽²²⁾ The average D-Lit score was 10.65, which is lower than scores documented in research involving medical students and hospital personnel.⁽²²⁾ This study indicated that participants previously diagnosed with depression by healthcare professionals, those who attended related lectures and awareness events, and individuals exposed to informative posters and flyers attained higher mean D-Lit scores compared to other information sources. The mean scores for these groups were 13.55, 13.45, and 11.74 respectively.⁽²²⁾

Contributing Factors

Job insecurity

Graduate education is frequently perceived as a solid pathway to esteemed careers; however, nearly one-third of graduates feel their PhD does not greatly enhance their employment prospects.⁽²³⁾ The rivalry in the academic job market has escalated, with an increasing number of individuals obtaining PhDs while available academic positions and funding opportunities remain limited.^(20, 24) Additionally, many graduates experience significant anxiety regarding their chances of securing employment upon completing their studies. Research indicates that concerns over job opportunities significantly contribute to depression symptoms among graduate students.⁽²⁵⁾ According to a report from the National Science Foundation, employment in the science and engineering sectors has seen a notable decrease, reaching its lowest level in 15 years. Moreover, employment has fallen to the lowest point outside these fields in 20 years.⁽²⁶⁾ Additionally, 79% of graduate students need more certainty regarding their future job and career prospects.⁽⁶⁾

Funding difficulties

The competition for grant funding is increasing, negatively impacting success rates. In 1980, the success rates of American financing dropped by more than 50%.⁽²⁷⁾ Research funding must catch up with the growing number of PhD graduates, leading to intense competition for limited resources.^(27, 28) A report in *Nature* indicates that most grant recipients are typically established scientists rather than new researchers.⁽²⁹⁾ This increased competition is often linked to the pressures in academia for professionals to overwork, fostering a culture—particularly in the sciences—where individual happiness is frequently compromised for the sake of the greater good.^(30, 31) A survey of graduate students found that half of PhD trainees in North America were taken aback by the challenges they encountered while trying to secure funding.⁽²⁷⁾ The growing shortage of financial resources, combined with fierce competition, is leading to rising mental health concerns among research trainees.^(16, 20)

Work-life balance

Recent research indicates that around 85% of graduate students invest over 41 hours weekly in their postgraduate studies. Furthermore, 74% of these students need help to finish their programs on schedule.⁽⁶⁾

Well-being and resilience

A study focused on the well-being and resilience of postgraduate researchers in the UK (N = 50) found that participants reported significantly lower well-being and resilience than the general population. Analysis of the qualitative survey responses highlighted five key factors affecting participants' subjective well-

being: supervision, expectations, support, balance, and coping. Insufficient supervision was linked to increased stress, fatigue, burnout, turnover, and mental health issues.⁽³²⁾ This study examines depression and anxiety in postgraduate students and their related factors. Various elements lead to the rise in anxiety and depression rates, such as insufficient sleep, long study hours, heavy academic workloads, academic stress, fierce competition, increased expectations, and responsibilities.

Smartphones and depression

A study examined smartphone addiction among 506 postgraduate students from the Middle East and its relation to various factors. It found that 51.0% of participants showed signs of smartphone addiction.⁽³³⁾ Additionally, the research highlighted a significant link between heavy smartphone use and MDD, nicotine dependence, insomnia, and attention-deficit / hyperactivity disorder (ADHD). Notably, those addicted to smartphones were about twice as likely to suffer from insomnia and had more ADHD-related symptoms.⁽³³⁾ Furthermore, the study indicated that individuals with frequent smartphone usage faced a higher risk of severe depression and showed a greater prevalence of various issues related to depression.⁽³³⁾

Suicide

The increased prevalence of psychiatric disorders among graduate students makes them more vulnerable to suicidal behavior, a significant mental health concern for this group. In a cross-sectional study of 3,257 graduate students, a big sample, suicide risk was assessed using the Suicidal Behaviours Questionnaire-Revised (SBQ-

R), which discovered that 25.7% of participants had thought about suicide at some point in their lives.⁽³⁴⁾ Last year, 6.3% considered suicide, lifelong data shows that 1.6% have attempted suicide, and the lifetime prevalence of suicidal behavior is at 28.4%.⁽³⁴⁾ A recent study reveals that suicidal thoughts among postgraduate students have tripled, highlighting the urgent need for academic institutions to develop wellness programs focused on the suicide prevention demographic.⁽¹⁹⁾ This study, using a 4-point Likert scale (0–3: not at all–most of the time), asked students how often they had considered suicide, planned ways to take their own lives, and had done things to harm themselves in the previous 2 weeks to evaluate suicide-related behavior ⁽¹⁹⁾. Additionally, a substantial percentage of participants, namely 44.4%, reported experiencing feelings of hopelessness. Notably, a significant proportion of individuals, namely 7.3%, acknowledged experiencing thoughts of suicide, while 2.3% disclosed having formulated specific plans related to suicide.⁽¹⁹⁾

Kogien⁽³⁵⁾ studies the factors linked to suicidal behavior in graduate students. He has pinpointed several risk factors for suicide: depressive symptoms, anxiety symptoms, health-related issues, such as post-traumatic stress disorder symptoms, self-reported increased alcohol intake, a history of mental disorder diagnosis, extreme concern about thinness or weight loss, and a perceived lack of control over eating habits. Psychological factors include negative emotions (isolation, anger, despair, helplessness, perceived loss of control) and reduced emotional stability. Sociodemographic factors encompass being female, over 30 years old, worried about financial situations, having a

religious affiliation, and lacking faith-based practices.⁽³⁵⁾ Relational aspects involve dissatisfaction with the quality of relationships with graduate peers, strained familial relationships due to the demands of graduate studies, and negative familial dynamics. Academic factors include dissatisfaction with the relevance or motivation of academic work stemming from feelings of humiliation from the advisor and the focus of the graduate program. Protective factors are self-efficacy in managing psychological and emotional stability and higher emotional stability.⁽³⁵⁾

Disseminating the Importance of Mental Health

Literature reviews indicate a lack of well-organized programs to address the mental health issues faced by postgraduate students. Thus, both students and their institutions must acknowledge these challenges. Establishing wellness centers could play a significant role in supporting and sustaining mental well-being. Below are some noteworthy studies and initiatives focused on enhancing the mental health of postgraduate students.

Potential Intervention

The protective effects of positive emotions

The broaden-and-build theory posits that positive emotions can expand the coping strategies available at any given time, thereby improving an individual's stress resilience.⁽³⁶⁾ Research has shown that heightened stress, particularly when it becomes chronic, significantly impacts anxiety and depressive symptoms.⁽³⁶⁾

Nevertheless, studies indicate that individuals with high resilience tend to be

better shielded from stress, resulting in reduced levels of anxiety and depression. A study with 200 postdoctoral research fellows sought to explore (a) the link between positive emotions and increased resilience, (b) whether coping strategies acted as a mediator in this relationship, and (c) how resilience affected the impact of stress on trait anxiety and depressive symptoms.⁽³⁶⁾ The findings support the broaden-and-build theory, demonstrating that positive emotions can both directly and indirectly bolster resilience through the mediating role of coping strategies, especially adaptive coping. Additionally, the relationship between stress and trait anxiety and depression was moderated by resilience.

The implementation of programs aimed at boosting resilience, adaptive coping strategies, and positive emotions may reduce the likelihood of postdocs experiencing anxiety or depressive symptoms, even considering the undeniable impact of stress on these aspects of symptoms.⁽³⁶⁾

The importance of time management

This research examined the impact of stress, workload, and time management on the academic performance of part-time postgraduate students at the University Utara Malaysia (UUM).⁽³⁷⁾ To achieve this, responses were collected from 103 working doctoral students at the Othman Yeop Abdullah (OYA) Graduate School of Business, UUM. The findings revealed a strong and positive relationship between anxiety, workload, effective time management, and students' academic achievements. Therefore, the researcher recommends providing students with training and workshops to help them optimize their study time for each subject,

ultimately improving their school performance.⁽³⁷⁾

The Impact of Individual and Group Counseling Services and Guidance on Undergraduate and Graduate Students' Knowledge of Mental Health

A study from Thailand that combined surveys from 393 students with in-depth interviews evaluated the influence of guidance as well as individual and group counseling services on mental health knowledge among undergraduate and postgraduate students.⁽³⁸⁾ The findings showed that postgraduate students generally had higher mental health knowledge and rated the effectiveness of counseling services more positively than undergraduates, with a significant positive correlation between the use of counseling services and mental health knowledge ($r = 0.38$, $p < 0.01$, $r = 0.38$, $p < 0.01$). Postgraduates also scored higher than compared to undergraduates on the perceived helpfulness of these services (mean: 4.16 vs. 3.91, respectively). Students reported that counseling increased their awareness, understanding, and willingness to seek help for mental health issues. The study concludes that strengthening and expanding access to professional guidance and counseling services is essential for improving mental health literacy, reducing stigma, and encouraging proactive help-seeking among university students, ultimately supporting better mental health outcomes in academic settings.⁽³⁸⁾

Conclusion

Anxiety, depression, and stress are prevalent among postgraduate students. This review alarms students and their schools about the challenges of studying for doctoral degrees. For now, a wellness

program to enhance their mental health is suggested. Further study is required to design a wellness program for postgraduate students.

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