

DEPRESSION AND ANXIETY IN HEALTH PROFESSIONS  
STUDENTS: EARLY DETECTION AND RESPONSE STRATEGIES

BY

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DEPRESSION AND ANXIETY IN HEALTH PROFESSIONS  
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A Literature Review Project

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## Abstract

This literature review demonstrates the prevalence of mental health disorders, such as anxiety and depression, among college students, including health professions students. Because of the rigor and clinical education elements associated with health professions programs, students in these programs may experience novel stressors. It has been established that colleges and educators must improve awareness about mental health, reduce barriers to help-seeking, and clarify available mental health resources. The literature also offers ideas that allied health programs may adopt to integrate preventative instructional interventions to prepare students to manage challenges to their mental health. Systematic instructional design is needed to embed preventative interventions within already packed health professions curricula effectively. By addressing the mental health needs of students while in college, these individuals may be more prepared to manage their mental health after graduation.

*Keywords:* anxiety, depression, mindfulness, wellness, education, allied health, health professions students, coping strategies

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## Depression and Anxiety in Health Professions Students: Early Detection and Response Strategies

Anxiety and depression are prevalent among college students throughout the United States (U.S.) (The Jed Foundation, 2020). Health professions (H.P.) students are especially susceptible to these mental health disorders. This susceptibility may be due to increased coursework and expected performance levels (Lewis, Kirkman, & Holmes, 2019). In some cases, students are not prepared for college stressors, contributing to anxiety and depression. In other cases, students are already predisposed to mental health issues and may be unaware of the difficulties school may introduce to their current situation. It is not uncommon for people to experience anxiety and depression simultaneously (Anxiety and Depression Association of America [ADAA], 2021b). Fortunately, awareness of these issues has increased and is being addressed in schools throughout the country.

"Anxiety disorders are the most common mental illness in the U.S., affecting 40 million adults in the United States age 18 and older, or 18.1% of the population every year" (ADAA, 2021b, para. 1). There are several different types of anxiety, including but not limited to Generalized Anxiety Disorder, Panic Disorder, Social Anxiety Disorder, and Obsessive-Compulsive Disorder. According to ADAA (2021b), Generalized Anxiety Disorder (GAD) is characterized by persistent and excessive worry. People who have this disorder may worry excessively about stressors such as money, school, family, or health. Individuals with GAD may struggle with daily activities, making school almost impossible when added to the list of stressors. For GAD to be diagnosed, the individual must experience excessive worry for more days than not for at least six months and present with three or more anxiety-related symptoms. Symptoms may include headaches, stomach pain, or body aches (ADAA, 2021b). Data shows

that 6.8 million adults (3.1% of the U.S. population) are affected by GAD within a given year. Further, the rate of incidence is twice as high among women (ADAA, 2021c).

Panic disorder is another type of anxiety that can affect college students. Individuals who suffer from this disorder may experience spontaneous panic attacks consistent with extreme fear of unknown causes. Data shows that around 2-3% of Americans experience panic disorder (ADAA, 2021e). This disorder has shown to be more common in women than men (ADAA, 2021e). Panic disorder can interfere with daily life, including work and school. The interference can cause certain people to avoid specific situations altogether for fear of experiencing another panic attack. If a person experiences panic in a school or clinical setting, this could prove detrimental to the student completing their education (ADAA, 2021e).

Social anxiety disorder (SAD) can also be referred to as social phobia, and it affects many students in the U.S. SAD has been statistically shown to affect 6.8% of the U.S. population. Furthermore, unlike GAD and Panic Disorder, SAD has been proven to be equally common among men and women, with a typical start age of thirteen (ADAA, 2021f). A survey was conducted in 2007 by the ADDA. The survey concluded that 36% of people with social anxiety disorder reported experiencing symptoms for ten years or more before seeking help (ADAA, 2021b). The main characteristic of SAD is intense, overwhelming anxiety over feelings of being negatively evaluated or rejected in a social situation (ADAA, 2021f). Many people with this disorder can experience strong physical symptoms of increased heart rate, nausea, and profuse sweating. Although people who suffer from this disorder realize that this is excessive, they cannot manage or control these symptoms. Due to the nature of this disorder, clinical situations for health care students may be challenging to manage due to the performance-on-demand aspects of clinical education (ADAA, 2021f).

Obsessive-compulsive disorder (OCD) can affect people from all walks of life and is prevalent in the U.S. (ADAA, 2021d). This disorder causes the individual to experience unwanted obsessions or compulsions, such as obsessive thoughts, compulsive cleanliness, or compulsive arranging. To ease their anxiety symptoms, the individual who has OCD must complete the patterns or compulsion. If left undiagnosed or untreated, this disorder could significantly affect the person's normal daily activities, schoolwork, or career (ADAA, 2021d).

"Depression is a very common mental health problem, affecting a significant proportion of H.P. students. Depression is a multi-dimensional disorder that adversely affects inter-personal, social, and occupational spheres of students' life" (Alfaris et al., 2016, p.2). Experiencing a loss of a loved one, losing a job, or going through a divorce can cause a person to feel sad, and these are normal life stressors. Individuals who suffer from diagnosed persistent depression experience more severe, long-term symptoms of depression. These symptoms include sadness, fatigue, and loss of interest, among others. Research has shown that depression occurs more often in women than men and can manifest differently in each gender. Men tend to experience fatigue, irritability, and anger. In women, the disorder tends to present feelings of worthlessness, guilt, and loss of interest (ADAA, 2021a). Depressive disorders are further categorized into subtypes, including major depressive disorder, persistent depressive disorder, and premenstrual dysphoric disorder.

Major depressive disorder is characterized by having five or more common symptoms that persist for longer than two weeks and impact the individuals' daily life. Some of these symptoms include overwhelming feelings of sadness, loss of interest, insomnia, fatigue, feelings of worthlessness, and inappropriate guilt (ADAA, 2021a). According to statistical data, 17.3 million people 18 years or older in the U.S. have experienced at least one major depressive

episode in the last year as of 2017. Other sources report that depression is the leading cause of disability in the U.S. among people ages 15-44 years (ADAA, 2021a).

Persistent depressive disorder is characterized by a persistent dark, sad mood that occurs daily for at least two years. The individual would also demonstrate two or more depressive symptoms. These symptoms are not classified as severe as with a major depressive disorder. It is important to note that major depressive disorder and persistent depressive disorder can overlap and precede each other (ADAA, 2021a). Premenstrual dysphoric disorder (PMDD) is a manifestation of depression during a female's menstrual cycle. Mood changes and physical symptoms in PMDD are more severe than premenstrual syndrome and may disrupt the person's occupation, school, or personal life (ADDA, 2012a).

Although depression and anxiety disorders are classified differently, people who have depression often experience symptoms consistent with an anxiety disorder (ADAA, 2021a). The evidence has shown that anxiety and depression do not cause the other; however, people can suffer from both conditions simultaneously (ADAA, 2021a). It is important to note that anxiety and depression can significantly impact students' ability to accomplish their goals. The impact that mental health disorders have on the achievement of academic goals is relevant to H.P. students and programs.

Allied health professionals work to “prevent, diagnose, and treat diseases and illnesses” (Kent State University, 2021, para. 3). There are numerous professions designated as allied health; some include speech pathologists, physical therapists, physical therapist assistants, respiratory therapists, radiographers, athletic trainers, and surgical technologists. The goal of allied health or programs is to prepare graduates to be competent practitioners capable of providing quality care throughout their careers (Romig, Tucker, Hewitt, & Maillet, 2016). Most

allied health programs require a combination of didactic, laboratory, and clinical education to ensure students attain the knowledge, attitudes, and skills expected of the given allied health profession. The quantity and balance of didactic, lab, and clinical education varies by program types, as does the length of programs. For example, a physical therapist assistant program is commonly two-years in length, resulting in an associate's degree (American Physical Therapy Association [APTA], 2021b). However, to become a physical therapist in the U.S., a doctor of physical therapy degree is required (APTA, 2021a). Further, allied health programs are commonly accredited via programmatic or regional accrediting bodies. Upon graduation from a health professions program, a certification or licensing examination is generally required to work in the field.

The rigor of allied health education and the responsibilities of these licensed professionals may introduce factors that contribute to mental health disorders among students. The extensive didactic course load, clinical experiences, and practical laboratory exams reflect a different learning experience for H.P. students compared to many college students. Uncovering the prevalence of mental health disorders among H.P. students and possible interventions may help guide educational programs in helping students with issues of mental health.

### **Literature Review**

This literature review synthesizes the research regarding the prevalence of depression and anxiety in college students, focusing on H.P. students specifically. The review also aims to understand the increase in mental health support utilization in colleges and associated barriers to seeking help. Further, the review explores possible preventative instructional interventions to

promote the ability of college students to manage their unique needs concerning anxiety and depression.

### **Prevalence of Mental Health Disorders Among College Students**

Alfaris et al. (2016) addressed the prevalence of depression in H.P. students. The cross-sectional descriptive study targeted students attending a university in Saudi Arabia for medicine, dentistry, nursing, and allied medical science. The 1,500-student sample was selected using stratified proportionate sampling. Using the Beck Depression Inventory, participants were screened for depressive symptoms. The response rate was 79.0%, with allied medical students having the second-highest completion rate (79.2%), second to dental students (86.1%). The study found the following prevalence of depressive symptoms: dentistry (51.6%), medicine (46.2%), allied medical science (45.7%), and nursing (44.2%). Findings suggest higher rates of depressive symptoms among females and dentistry students in their third and fourth year of education. This study concludes that the rates of depressive symptoms are alarmingly high and that further intervention studies are warranted. Alfaris et al. (2016) further describe how depression that carries on after graduation could negatively impact future patient care.

Quince, Wood, Parker, and Benson (2012) conducted a longitudinal study in the United Kingdom. The results were similar to the findings of Alfaris et al. (2016), with depressive symptoms rates being alarmingly high among medical students. In another study, Seweryn et al. (2015) asserted that in Poland, the level of depression was highest in both medical and technology students. This conclusion is interestingly different from the study of medical students in Portugal and Germany, where a higher rate of depression was observed in technology students over medical students.

Macauley et al. (2018) conducted a cross-sectional observational study aimed to understand the prevalence of anxiety in H.P. students and determine possible predictors. Three hundred and fifty-one students from a health professions institution in Boston, Massachusetts, were recruited to participate in this study. These students were first- and second-year Doctor of Physical Therapy, Master of Science in Communication Science Disorders, and Master of Physician Assistant students. The return rate of the State-Trait Anxiety Inventory (STAI) and the Westside Test Anxiety Scale (WTAS) questionnaires was 52%, with the majority of the reporting students coming from the Physical Therapy program. The results concluded that 51% percent of female students and 37.5% of male students have moderately high test anxiety, with 83% having greater than normal state anxiety and 56% having higher than normal trait anxiety levels. State anxiety is defined as a psychological reaction related to a specific situation. Trait anxiety refers to a trait of personality or how the person thinks, feels, and behaves (Macauley et al., 2018).

According to the survey by Macauley et al. (2018), the prevalence of anxiety was higher in second-year versus first-year students PT students, with a possible correlation to introducing clinical experiences. The study also showed a higher prevalence in female students versus male students. Some of the predictors of anxiety emerging from this study included paying for graduate school, lower self-reported grade point averages, female gender, and personal or family history of anxiety disorders. The study concluded that H.P. students had elevated anxiety levels compared to standard values of non-healthcare students derived from a prior meta-analysis. Further study was recommended to investigate the impact of anxiety on healthcare teams after graduation (Macauley et al., 2018).

## **Barriers to Seeking Help**

Depression and anxiety are prevalent among college students throughout the U.S. Mental health conditions, on average, begin between 18-24 years of age, placing many college students in this predisposing age group (The Jed Foundation, 2020). Students face unique stressors during college, including new lifestyles, different cultures, possible new roommates, and different friends. The college student also may be introduced to drinking and drug use. Further, they may face the invention of their identity and finding their unique place in society (The Jed Foundation, 2020). Along with these unique stressors, college students juggle academic performance, peer acceptance, and increased classwork. All of these factors can lead some students to experience depression and anxiety or panic disorders.

To compound matters, some students struggling with depression and anxiety do not seek help due to the stigma attached to mental health disorders (The Jed Foundation, 2020). Bird, Chow, and Yang (2020) studied college students' attitudes and stigma towards seeking mental health counseling. This research was conducted using an online survey completed by 538 college students from a university in the Southeastern U.S. The sample included 412 females and 126 males with a mean age of 20.21 years. An analysis of the data suggested that males reported significantly lower value towards counseling and a higher self-stigma rate than females. Further, the study noted that public stigma was positively related to self-stigma and that understanding the importance of counseling was negatively related to public stigma. Therefore, the student who perceives any negative public stigma may have a negative self-stigma that places a lower value on counseling, which becomes a barrier (Bird et al., 2020).

Stigma is not the only reason cited in the literature as a barrier to students seeking help with mental health disorders. Ebert et al. (2019) conducted a web-based self-reported study

concerning barriers to mental health treatment utilization among first-year college students. The study analyzed survey results obtained from 13,984 first-year college students and was conducted in eight countries including the U.S. The results revealed that only 24.6% of students reported that they would seek mental health treatment if they experienced an emotional issue. The most commonly reported reasons for not seeking help were the preference to handle the situation alone (56.4%) and wanting to speak with family and friends instead (48.0%). Listed third on the list of barriers was that the student would be embarrassed to seek help. The most evident pattern in the data showed that attitudinal barriers rather than structural barriers such as cost and transportation were the most common reasons students in this study did not seek help (Ebert et al., 2019).

### **Increase in Mental Health Support Utilization at Colleges**

A theme among the research reviewed for this paper concerns the importance of developing coping skills and knowing one's personal limits when managing anxiety and depression (The Jed Foundation, 2020; LeBlanc, 2019; The American Institute of Stress, 2019). According to The American Institute of Stress (2019), students should be provided with information and resources about overcoming anxiety. These resources include on-campus clinics and counseling services, mental health clinics available off-campus, and support groups. In some cases, on-campus counseling services have long wait times due to extreme demand. When wait times are an issue, students should receive referrals and information regarding nearby off-campus clinics that can help immediately. In conjunction with psychotherapy and medications, lifestyle coaching, support groups, alternative medicines, exercise, and mindfulness can provide appropriate and beneficial treatment. Research has led universities and colleges to increase mental health awareness and support. Further, the prevalence of mental health disorders has led

to increased utilization of mental health services by U.S. college students (Lipson, Lattie, & Eisenberg, 2019).

An article from the Harvard Medical School offers several different coping mechanism suggestions for students and administration. Students are encouraged to approach and deal with the difficult situation rather than avoid. As an example, "If you're struggling in a class, try emailing the professor for help (LeBlanc, 2019, para. 7)." Another suggestion for students is to practice self-care, such as maintaining healthy eating habits, regular exercise, and consistent sleep. These self-care behaviors can help regulate mood. LeBlanc (2019) suggests that school administrators provide support by raising awareness on campus. Delivering the message to students that anxiety is common and treatable can go a long way in decreasing the stigma attached. This, in turn, can help students who are struggling feel more comfortable with reaching out to counselors, teachers, and administrators. It is further suggested that colleges offer support in a variety of ways to limit perceived barriers, including phone calls, online chats, and face-to-face sessions (LeBlanc, 2019). Students may feel more comfortable expressing their feelings in an online chat versus sitting face-to-face with a counselor.

A systematic review by Lattie et al. (2019) aimed to explore digital mental health interventions literature. The results concluded that the digital mental health interventions were either effective (47%) or partially effective (34%) in producing beneficial changes in psychological outcomes. The effectiveness did not change significantly with the type of intervention, indicating that any digital interventions could be helpful to people facing mental health issues. The interventions included online counseling services, mobile-based apps, and virtual reality-based interventions. According to Lattie et al. (2019), further research on the

design and implementation of these programs for college students could help these programs be successfully utilized on college campuses.

A study by Lipson et al. (2019) aimed to explore trends in mental health service utilization by U.S. college students. The study utilized an annual web-based survey over ten years and collected responses from 155,026 students from 196 campuses. Lipson et al. (2019) asserted that this study was the most comprehensive evidence to date of an increase in utilization among colleges over the past ten years. The percentage of students utilizing services increased from 22% to 36% between 2007 and 2017. Based on the comprehensive survey, the conclusion suggested a two-fold reason for increased mental health utilization. These two reasons included a decrease in perceived stigma and an increased prevalence of mental health disorders (Lipson et al., 2019).

Increased efforts to raise awareness about mental health services are noted in an article by Eva (2019). Many colleges are beginning to share mental health information with students during orientations using presentations, video, and group discussions. Eva (2019) also reports that several colleges offer free screenings, such as Drexel University's mental health kiosk. Other colleges are taking a different approach by offering resilience training programs to help students more easily recover from negative experiences. The increase in college-wide programs focused on mental health seems to be a great indicator that awareness and utilization of mental health support are rising (Eva, 2019).

### **Preventative Instructional Interventions**

Doctor of physical therapy (DPT) students have been found to demonstrate high stress levels. A study by Kindel and Rafoth (2019) was designed to investigate the impact of teaching a mindfulness curriculum on DPT students' stress levels. This research study was a mixed-method,

randomized controlled study that included 32 DPT students divided into experimental and control groups. The experimental group was provided with the standard DPT course curriculum and a six-week mindfulness curriculum. The control group received only the standard DPT course curriculum. All participants were given the Five Factor Mindfulness Questionnaire (FFMQ) and Perceived Stress Scale (PSS) initially and after eight weeks. The results showed a statistically significant improvement in stress and mindfulness as perceived by the students. Further, students indicated a favorable response to the mindfulness curriculum. The results showed that even this brief training segment effectively decreased overall student stress (Kindel & Rafoth, 2019).

Lewis, Kirkman, and Holmes (2019) utilized a questionnaire to understand student perceptions and the overall benefits of a short program of wellness and mindfulness activities. The study involved third-year speech pathology students who were also engaged in clinical affiliations. Students were introduced to the concept of wellness using the University of Nebraska's Wellness Model. This model includes the seven aspects of wellness: emotional, social, physical, environmental, occupational, spiritual, and intellectual. The students attended two-hour-long tutorials each week for one semester and completed an anonymous online questionnaire at the conclusion. The program facilitated student discussions on various topics including, dealing with procrastination, managing stress, and time management, among others. The students also participated in various mindfulness activities, such as meditation, mindful eating, and mindful walking. Students also were then encouraged to develop a wellness plan that could be used during their fourth year of study. Lastly, the students were provided a handout with various mental health resources that included links to evidence-based websites, information about the college's resources, and links to apps such as the Headspace app. The pilot project

demonstrated that the students enjoyed and regularly engaged in the offered wellness and mindfulness programs. Most students were able to learn new strategies for coping, with 90% of the students planning to implement the learned strategies in the future. Lewis et al. (2019) asserted that a similar program would be helpful to students and relatively easy to embed in other allied health courses.

Several other suggestions of preventative approaches for colleges to implement were articulated by Eva (2019). While understanding that adding learning objectives into an already packed curriculum may be difficult for educators, Eva (2019) recommends carving out a few minutes at the start of each class could be a way to interject mindfulness into each lecture. This practice may involve a brief guided mindfulness practice from evidence-based online sources or beginning each lesson with a "mindful moment" to help students reconnect to their space. Offering support in these small ways could make a difference in students' well-being (Eva, 2019).

### **Discussion**

The literature presented in this review demonstrates a clear prevalence of anxiety and depression among college students. Although not explicitly aimed at exploring the rates of mental health disorders among H.P. students, the findings illuminate the need for colleges and allied health programs to consider their students' mental health and well-being. Many of the studies in this review focused on medical and DPT students and revealed higher-than-average levels of anxiety and depression. While medical and DPT students experience some stressors relevant to other H.P. students, the level of education (doctorate) and future professional practice expectations likely generate stressors that do not directly relate to the allied health context. Similarly, the allied health context may present unique stressors that H.P. students earning

advanced degrees may not face. Research investigating issues of mental health concerning allied health students is sparse. Further study of this population is warranted.

Much of the literature concerning the prevalence of anxiety and depression among college students presented in this review was conducted outside of the U.S. In one study completed in Saudi Arabia, medical and other allied health students were shown to have a high prevalence of anxiety and depression. Two other studies conducted in the United Kingdom, Poland, Portugal, and Germany showed similar results (Quince, 2012; Seweryn, 2015). Findings from another study found that medical and technology students displayed high levels of depression, with technology students from Portugal and Germany having the highest levels (Seweryn, 2015).

These varied findings lead to further questions. Is technology a more predominant career with higher levels of competition and academic rigor? Another consideration relates to the differences in healthcare systems across countries, which influences the educational and professional expectations of allied health students. Findings concerning allied health students within the U.S. would likely be more informative given how distinctive the U.S. health care system is. Studies may also want to explore the role that socioeconomic or cultural factors play in allied health students' mental health.

Several different questionnaires were used in the literature. The Five Factor Mindfulness Questionnaire (FFMQ) and Perceived Stress Scale (PSS) were used in the study by Kindel & Raftery, 2019. The Beck Depression Inventory, the State-Trait Anxiety Inventory (STAI), and the Westside Test Anxiety Scale (WTAS) were used in Alfaris et al. 2016 and Macauley et al. 2018, respectively. The variation of scales used in the literature demonstrates that investigations emphasized different outcomes (mindfulness, perceived stress, anxiety, and depression). If more

studies utilized the same outcomes and measurement scales, the data could be compared across student types and geographic locations. This approach may offer a fuller view of the problem.

The literature demonstrated that females experience a higher incidence rate than males for developing mental health disorders, particularly anxiety and depression (ADDA, 2021c). This finding is relevant to allied health programs because many of these fields of study enroll more female students (Bird et al., 2020). It would be interesting to uncover why females demonstrate higher rates of mental health disorders. Is it that they enter programs with pre-existing issues, or are there elements of allied health education that contribute to the genesis of mental health issues? Gaining clarity about these details could inform the development of targeted mental health communication and interventions.

Many questions remain concerning how to best support students learning about and seeking help for mental health disorders. It seems clear from the literature that college students are more likely to experience abnormal stress and depressive episodes regardless of their study area. The literature review demonstrates that early intervention via screening processes and college-wide awareness programs could help students cope with the stresses of college life. Overcoming barriers associated with mental health can improve the student's willingness to reach out for help. It would be encouraging to see future studies examine which methods of raising awareness and articulating available support resources have the most significant effect. For instance, is an online announcement more effective than a poster outside of the cafeteria. Exploring the optimal timing of these college communication efforts and the value of repetitive messaging could also be insightful.

The literature further suggests that the addition of wellness and mindfulness interventions in health professions curricula could help students develop patterns of positive stress and mental

health practices. This is important for students who face various school-related stressors. Considering that the health professions curricula are packed and required to meet the requirements of accrediting bodies, careful planning is needed if mindfulness and wellness instructional interventions are to be implemented. The development of curricula must consider the students, instructor, content, and the learning situation. The planning may differ depending on if the course is offered online versus face-to-face, for instance. If planning to develop a mindfulness program into a health professions curriculum, all factors would need to be considered while maintaining awareness of accreditation standards. Curriculum or instructional design models can serve as frameworks to guide efforts to embed preventative mental health education in courses. The analysis phase is the first step in understanding and recognizing the problem and the needs of all students. This phase is followed by careful design, development, and implementation. The design phase involves developing learning outcomes or objectives and prioritizing content to sequence in a logical order. The development phase of instructional design involves the actual development of learning experiences, materials, and assessments. The implementation phase could occur as a pilot project that would then be evaluated for effectiveness and further analysis. Once the evaluation phase is completed, the results concerning the achievement of the learning outcomes serve to inform improvements. Once data-driven enhancements are made, the instructional design cycle is repeated.

Finally, the idea of preparing future healthcare professionals to recognize and manage mental health issues is essential because real-world practice introduces new stressors. The workforce would be healthier if those entering the field possessed the knowledge and skills of self-care. Failure for health care professionals to recognize and manage mental health issues has consequences for health care organizations and patients. It seems logical that enhancing the

mental health of students would support a healthier workforce. Studies that offer improved understanding about if and how coping strategies learned in college translate to professional practice could be valuable.

### **Conclusion**

This review of credible literature shows that anxiety and depression are prevalent among college students. The research reveals that colleges are implementing strategies to raise awareness about mental health. Importantly, efforts by schools need to reduce barriers to help-seeking. This includes reaching the student through various forms of media and addressing the stigma associated with mental health. Notably, a preventative strategy addressed in the literature concerns instructional interventions. Through planned mental health communication, screening, and curriculum, college administrators and faculty can help students cope with anxiety and depression and achieve their ultimate academic goals. Given the diversity of health professions education across countries and professions, further study is warranted to gain a complete picture of the current problem.

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