

NORTHWEST UNIVERSITY

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**Symptoms of anxiety and depression in college students and what can be done to combat  
them**

An undergraduate thesis submitted in partial satisfaction of the requirements for completing the  
Northwest University Honors Program

By

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## Dedication

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## Abstract

College students experience unique challenges and stressors that can contribute to the development of anxiety and depression symptoms. Many students report increased experience with these symptoms post the Covid-19 Pandemic as well, making treatment of these symptoms an essential component to their well-being. Treatment is commonly provided through pharmacological therapy and counseling, but many students may not be able to afford these services. Exercise and time in green space have been shown to reduce symptoms of anxiety and depression in young adults, and often come at little-to-no cost. College students who are at a time in their life where proper coping skills for symptoms of anxiety and depression can affect the onset of mental disorders later in life can utilize alternative therapy through exercise and green space immersion.

Keywords: college students, anxiety and depression symptoms, exercise, green space

## I. Introduction

College is a unique experience that a significant amount of people undertake in their early adulthood. Recently-graduated high school students make decisions for their future that may place them at a distance from the support structures they have grown accustomed to. They uproot their lives, develop new friendships, pursue passions, and often make unhealthy choices about their diet and sleeping habits, all while they learn in a classroom setting unlike any they have experienced in their educational lives. As a fourth-year college student, I have been subject and witness to the drastic changes that occur not only in the environment around me, but my mind as well. With homework deadlines, high costs of education and living, and a tumultuous schedule of activities, it is easy to find oneself struggling to keep up, especially with health-related habits. This combination of conditions creates an environment that puts college students at risk of developing symptoms of anxiety and depression, which have detrimental effects not only on their overall mental health, but their physical health, their success in the classroom, and their relationships (Hawley, et al, 2021).

This is not groundbreaking knowledge, as social psychologists find all sorts of ways that college students face stressors unlike most other life experiences. The most recent factor, becoming a catalyst for a pronounced increase in symptoms of anxiety and depression in college students, is the adjustment to a world that has suffered through the COVID-19 Pandemic. The world is still experiencing the effects of a world shut down by this virus, and the mental health effects this pandemic had on college students have been significant and devastating. With many college students already experiencing stress from their educational and social experiences, they may need assistance managing their anxiety and depression symptoms. This paper will seek to explore how college students are affected not just by their typical stressors of the college

experience, but also by the effects of a world post-pandemic. The focus will be on learning effective ways to address symptoms of anxiety and depression for young adults in college.

## II. Definitions and Disclaimer

For the purpose of this work, the following terms and phrases will be used in line with their given definitions:

Green space – Bodies of water or areas of vegetation in a landscape, such as forests and wilderness areas, street trees and parks, gardens and backyards, geological formation, farmland, coastal areas and food crops (Taylor & Hochuli, 2017).

Anxiety disorder symptoms – Symptoms of Generalized Anxiety Disorder, as reported by the National Institute of Mental Health, include: feeling restless, wound-up, or on-edge; being easily fatigued; having difficulty concentrating, being irritable; having headaches, muscle aches, stomachaches, or unexplained pains; difficulty controlling feelings of worry; and having sleep problems, such as difficulty falling or staying asleep (National Institute of Mental Health, 2024).

Depression Disorder Symptoms – Symptoms of depression, as reported by the National Institute of Mental Health, include: persistent sad, anxious, or “empty” mood; feelings of hopelessness or pessimism; feelings of irritability, frustration, or restlessness; feelings of guilt, worthlessness, or helplessness; loss of interest or pleasure in hobbies and activities; fatigue, lack of energy, or feeling slowed down; difficulty concentrating, remembering, or making decisions; difficulty sleeping, waking too early in the morning, or oversleeping; changes in appetite or unplanned weight changes; physical aches or pains, headaches, cramps, or digestive problems without a clear physical cause that do not go away with treatment; and thoughts of death or suicide or suicide attempts (National Institute of Mental Health, 2024).

Disclaimer: Mental health symptoms are defined as “feelings or behaviors [that] can be an early warning sign of a problem,” (USDHHS, 2022) while mental disorders are defined as behavioral disorders that “affect the way you think and behave....change your mood and can make it difficult to function” (Cleveland Clinic, n.d.).

While the research being reviewed and explained aims to explore affordable and effective treatment for anxiety and depression symptoms, it is important to note that it is not applicable to all patients. Mental health looks different in each person; as such, it looks different for people who have been clinically diagnosed with anxiety and depressive disorders. Research has widely supported medication for those who have been clinically diagnosed with a mental disorder or disease, and this work is not meant to disrupt that claim. For those who have not been diagnosed with a mental disorder or disease that do present symptoms, my research will seek to provide effective and affordable treatment options. Treatment for anxiety and depression symptoms rather than the disorders themselves is more plausible and applicable for a wide demographic of young adults going through the highs and lows of college life.

### III. Literature Review

#### Mental health post-pandemic

The policies that were put into place to contain the outbreak of COVID-19 have also placed serious burdens on mental health. The proportion of college students reporting the experience of increased stress levels due to the COVID-19 Pandemic ranged as high as 71% across studies from 2022 (Elharake, 2022). One of these studies found that 75% of students were feeling fatigued, and over 80% felt “sad and empty” due to the pandemic (2022). Those who had

relatives, loved ones, or friends who were infected with the virus had an increased risk of high anxiety levels and “overall worse mental well-being” (2022).

This information is not new, as SARS showed in 2003 how even when individuals do not contract a virus from a breakout, there are negative impacts to mental health. Significant portions of the studied populations from a Cambridge publication in 2020 showed “moderate to severe psychiatric symptoms, meeting diagnosis thresholds of common mental disorders such as depression and generalized anxiety disorder” (Hisham, et al, 2020). These symptoms were reported in other cases of infectious disease outbreaks, where populations saw increased hospitalization not just for the outbreaks, but for psychiatric implications that continued beyond the initial outbreak of diseases (2020).

### Mental health of college students

It is a well-known issue that college students encounter unique stressors that affect their mental health, as compared to non-student peers. There is a plethora of different kinds of stressors that students experience, including the ability to keep up with costs of post-secondary education, heavy schedules, and work outside of classes. There are also more individualized stressors including being a first-generation college student, being a member of a minority group, or having a disability that impact students as well (Patterson, et al, 2021). Another study investigating how college impacts the mental health of its students found that not just social pressures, but also campus climate and any kind of institutional tension were contributors of psychological distress in the students involved in the study (Byrd, McKinney, 2012).

As students face unique challenges, their mental health deteriorates. This period in adult development also puts them at a disadvantage with their mental health coping skills. According

to a study from the Canadian Journal of Psychiatry, college-age students — or young adults entering adulthood — are typically vulnerable for development of mental health disorders like anxiety and depression (Patten, et al, 2017). This age group, being at greater risk of developing mental disorders, is at a critical period where improper care and attention to their mental health can lead to incompleteness of their education, a lack of strong relationship building, and even an impudence in career development (Patten, et al, 2017). This study also found that, for onset of mental disorders, while appearing 6 years post-young adulthood, the lack of proper managing and coping skills can lead to this development (Patten, et al, 2017).

#### Financial Considerations – college student income and typical treatment prices

Currently, the research presented for medication as a treatment option is highly prevalent. Multiple sources such as the Dialogues in Clinical Neuroscience journal support pharmacotherapy as treatment for anxiety, recommending it alongside cognitive behavioral therapy (Bandelow, et al, 2017). With pharmacological intervention in the past several decades making substantial progress, medication is widely known as one of the quickest and best ways to treat anxiety and depression symptoms. Counseling is also widely accepted as one of the most effective treatment options. This is especially significant since the negative connotation surrounding the idea of regular counseling has been decreasing with increased awareness on mental health.

With many college students facing financial stresses already, looking into typical treatments for anxiety and depression can be daunting. For a prescribed antidepressant medication fill, an individual could be paying as much as \$72 if they do not have the health insurance to cover it (Ahrnsbrak, Stagnitti, 2021). Likewise, for individuals dealing with anxiety, an overall estimate of \$6475 could be found as a total cost through a typical treatment plan



including treatment through pharmacological therapy, counseling, and any other assistance for the treatment for anxiety (Marciniak, et al, 2005). There are some options for treatment through counseling that come at little to no cost from programs dedicated to providing mental health support in their communities, but if no such program exists near a college student, they could be paying anywhere between \$92-\$286 out-of-pocket for a 60-minute session of counseling (Davenport, et al, 2023).

The College Board reports that an average 12-month budget for college students can range from \$22,460 to \$33,520 (College Board, n.d.). This includes housing, tuition not covered through scholarships and aid, and nutrition. Data from the National Center for Education Statistics report show that over a quarter of full-time undergraduate students work 20 hours or more per week, while part-time undergraduates are employed for the same amount. Overall, 41.7% of full-time undergraduates were employed, and 78.4% of part-time undergraduates were employed as of 2022 (NCES, 2023). It is hard to know with any certainty the exact amount of income a college student earns from working, but these numbers indicate that not all students are employed, and many are working part-time. It is colloquial knowledge that an individual cannot live well, or possibly even above the poverty threshold, on partial or no income, especially when a significant fraction is going towards college expenses. With many students either not working at all or only working part-time, options for financing the college experience are limited, not including outside expenses such as healthcare.

#### Research on alternative therapy – green space

With the cost of typical treatment plans so high, it can seem impossible to treat symptoms of anxiety and depression as a college student. There are, however, alternative options to consider. Alternative treatments for mental disorder symptoms are on the rise, including research

into how exercise and being outside can affect mental health. In a scoping review including 263 different studies, green space and mental health were shown to have a connection. Despite the diversity in studies and assorted variables included, approximately 70% of the studies reviewed outline a “positive association between some aspect of green space and mental health and wellbeing” (Wendelboe-Nelson, et al, 2019). With this significant level of agreement across varied designs and approaches to green space studies, time outside in nature could have the potential to be an alternative treatment option for college students experiencing symptoms of anxiety and depression. Even living near green spaces has been shown to impact mental health, as one study found that individuals living in residential areas with limited green spaces “had a 44 percent higher rate of physician-diagnosed anxiety disorders” as compared to those who lived in areas with greater amounts of green space (National Recreation and Park Association, n.d.)

David G. Pearson and Tony Craig have explored how time spent outside can increase mental health benefits. Their research describes how interaction and immersion in a local green space helped provide stimuli to increase mental health benefits in their research participants (2014). Similarly, another research group tested how an extended walk in the woods would affect mental health. The journal article “Psychological Benefits of Walking through Forest Areas” (2018) explains how having an extended walking period in forest areas leads to reduced anxiety levels. The researchers instructed 585 participants in their early twenties to set out on a designated route through forest areas. Upon their completion of the route, the participants showed decreased negative mood, most notably “depression-dejection,” along with decreased anxiety levels (Song, 2018).

During the pandemic, social distancing limited the options available for entertainment and leisure. Those who went outside, however, found themselves in a more agreeable situation

than others. In a study on outdoor activity participation from adolescents, researchers noted distinct differences occurring during the COVID-19 Pandemic. The participants across the United States who participated in outdoor activities while the COVID-19 Pandemic occurred experienced “smaller declines in subjective well-being” (Jackson, et al, 2021). Engagement in time outside in nature, often combined with a casual level of physical fitness, helped strengthen the adolescents’ resilience, specifically those during the COVID-19 Pandemic. Being involved in activities outdoors also often included interaction with their immediate family, which has been found to positively influence mental health for the entire family, as the social interactions occurring within green spaces were found to be a key factor in those who had less experiences with symptoms of anxiety and depression (2021). The outdoors and green space exposures are the driving force for the mental health benefits discussed, but the physical activity and social capital byproducts of being outside help increase the overall affect of immersion in nature as an alternative mental health treatment option.

#### Research on alternative therapy - exercise

Along another route, exercise itself has also been researched as an alternative treatment option for anxiety and depression symptoms. In a systematic review of general physical exercise intervention in mild to moderate depression, a meta-analysis of data from 89 studies showed a decrease in mild to moderate symptoms of depression (Josefsson, et al, 2013). This review recommends those with mild or moderate depression to engage in an exercise program as they are willing and able to do so. More specifically, in a qualitative study of those with “persistent major depression,” the participants completed a 14-week-long aerobic exercise training program, with moderate to vigorous intensity of exercise prescribed (Serrander, et al, 2021). After completion of the exercise intervention plan, the participants presented an “enhanced

participation in daily life and joy of living” (2021). As the individuals participated in the intervention, they experienced radical changes in many areas of their lives, including their family and relationships, their performance in class, as well as their self-image (2021). This study provided a means for those who had been subject to depression affecting their daily life to improve their joy and decrease the effects of depression symptoms.

For college students, a project published in 2020 tested the impacts on wellness coaching on students seeking treatment for depression experienced in college. The collaborative project included a prescription for college students to exercise in a specialized training program, which showed the “feasibility and benefits of an interprofessional collaborative process” between college departments (Yates, et al, 2020). The findings indicated that a continuous and consistent exercise plan could reduce the burdens of depression symptoms for college students. Based on this study, colleges and students may benefit from interdepartment collaboration to provide care for depression and anxiety through alternative methods that utilize different strengths of campus resources.

Anxiety-focused research published in *Advances in Experimental Medicine and Biology* indicates that physical activity can be “protective against anxiety disorders” in both clinical and nonclinical settings (Kandola, Stubbs, 2020). Further, exercise was indicated as being able to reduce symptoms of anxiety in the participants in significant amounts. The impact that exercise has in reducing anxiety symptoms, as reported, seems to come from a combination of biological and psychological factors, so exercise has the potential as a treatment method with a greater range of positive health outcomes than medication alone.

Specifically, exercise in the form of a combination of aerobic and resistance training has been indicated to improve symptoms of anxiety and depression. It is important to have options

when considering what form of exercise is right for each individual. Research and clinical trials published in *The Encyclopedia of Clinical Psychology* give strong evidence in favor of both supporting treatment options and becoming a stand-alone treatment for individuals with symptoms of anxiety and depression who complete aerobic exercise and resistance training (Rethorst, 2015). While a gym membership or accessibility may not be a completely low-cost option for alternative treatment, it may provide variety for individuals seeking to improve their mental health while also seeking out a range of options and benefits.

#### IV. Conclusion

College students experience different kinds of stress and mental health symptoms throughout their time in school. Not all will require intervention to treat these symptoms, but it is important to have different tools and resources readily available for students who find themselves struggling in their everyday life due to symptoms of anxiety and depression. Intervention through medication and counseling is a common and effective form of treatment for these symptoms but can sometimes be expensive. For those college students already struggling financially, this may be a barrier to seeking treatment. There is current and relevant research that suggests that time outside and time spent exercising can decrease symptoms of anxiety and depression, which would be a more realistic option for treatment in a demographic that is not always financially stable.

In the research I have reviewed, the argument is strong for decreasing symptoms of anxiety and depression through exercise and time outside in green space. However, medication and counseling still have the most prevalence in the psychology community. While they are effective, they can also be costly. A significant factor in recommending physical exercise and green space encounters is its ability to come at little-to-no cost. Counseling and medication

typically have some form of payment involved for treatment. Stepping outside, walking through a park, going for a run, or even utilizing online fitness programs are all free options that have the ability to improve symptoms of anxiety and depression. The research I reviewed also included studies on individuals within either the age range or experience of college students, indicating that these alternative treatment options are applicable and have been successful for those in young adulthood who experience in symptoms of anxiety and depression during their time in college. Having exercise programs aimed at decreasing symptoms or green spaces in the area that help improve mental health can be applicable to college populations, considering the typical conditions of a college, such as green spaces within campuses.

#### V. Further Study

The topics and sources covered in this paper are part of a relatively recent series of publications and research relating to the effects of the COVID-19 Pandemic on the world. Humanity is still adjusting and changing to reflect the impact the pandemic had on the lives of people socially, mentally, and emotionally. Further study still needs to be done to determine those total effects and their implications on society. Likewise, more research needs to be done specifically for college students to help clear the way to better treatment options that are affordable and accessible to them. In the area of exercise as a treatment option, it would be beneficial to know the best forms of exercise, as well as any time and intensity information, that are most effective in providing an alternative to standard prescriptions of treatment for negative mental health symptoms. Green space total areas, urban versus natural environments, and possibly the social or nonsocial inclusions of outdoor activity also provide ample opportunities for clarification in the research, as many studies have varying definitions and approaches to defining green space.

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