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Prevalence of Burnout and its Effect on Academic Performance among Healthcare Students.

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PREVALENCE OF BURNOUT AND ITS EFFECT ON ACADEMIC PERFORMANCE
AMONG HEALTHCARE STUDENTS.

By

Musaad Jamaan Alghamdi

A Thesis

Presented in Partial Fulfillment of Requirements for

the Degree of Master of Science in

Health Sciences

In

The Department of Respiratory Therapy

Under the supervision of Dr. Douglas Gardenhire

In

The Byrdine F. Lewis College of Nursing and Health Professions

Georgia State University

Atlanta, Georgia

2024

ACCEPTANCE

This thesis, PREVALENCE OF BURNOUT AND ITS EFFECT ON ACADEMIC PERFORMANCE AMONG HEALTHCARE STUDENTS, by Musaad Jamaan Alghamdi, was prepared under the direction of the Master's Thesis Advisory Committee of the Respiratory Therapy department at Georgia State University. It is accepted by the committee in partial fulfillment of requirements for the Master's of Science degree in Respiratory Therapy at Byrdine F. Lewis School of Nursing and Health Professions, Georgia State University.

The Master's Thesis Advisory Committee, as representatives of the faculty, certifies that this thesis has met all standards of excellence and scholarship as determined by the faculty.



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DEDICATION

I would like to express my sincere gratitude to everyone who played a crucial role in my successful completion of this thesis. Firstly, I want to extend my profound thanks to God (Allah) for the unwavering guidance and grace that have been bestowed upon me during the challenges of this academic endeavor. Secondly, I would like to thank my family for their continuous support, understanding, and encouragement. Your belief in me provided the motivation to persevere through the obstacles and uncertainties that come with such a significant academic undertaking. I am also deeply thankful for my friends, whose camaraderie brought joy to this journey. Lastly, I extend my gratitude to all those who, in various ways, contributed to the realization of this endeavor. This achievement is not just mine; it is a testament to the collective strength of the wonderful individuals who surrounded me. Thank you for being a part of this milestone in my academic journey.



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ABSTRACT

Background: Burnout is a prevalent psychological disorder among students resulting from demanding educational curriculum and prolonged study durations. As a result, the aim of this study was to assess the prevalence and severity of burnout, as well as its effect on academic performance among healthcare students. **Purpose:** The study aimed to evaluate the prevalence of BO among healthcare students at Byrdine F. Lewis College of Nursing and Health Professions, Georgia State University. **Methods:** A cross-sectional study was conducted with participants from four healthcare programs. Data were collected utilizing the Maslach Burnout Inventory - General Survey (S) (MBI-GS(S)), in addition to questions regarding sociodemographic factors. The Statistical Package for the Social Sciences (SPSS) version 29 was utilized for data analysis. **Results:** The study surveyed a total of 327 healthcare students. The majority of participants were female, with 273 participants (83.5%), while 54 participants (16.5%) were male. The majority group of participants were Respiratory Therapy students (n=90, 27.5%), followed by Physical Therapy students (n=81, 24.8%), Nursing students (n=79, 24.2%), and Occupational Therapy students (n=77, 23.5%). The participants' ages in the study ranged from 19 to 49 years, with a mean of 24.1 years (SD±4.55). The findings indicated that healthcare students exhibited a high level of Emotional Exhaustion (EE) with a mean score of 3.6, a moderate level of Cynicism (CY) with a mean score of 2.0, and a high level of Professional Efficacy (PE) with a mean score of 4.4. The participants' major, educational level, program level, GPA, and work status were associated with BO. Furthermore, participants' GPA, and working hours were positively correlated with BO. **Conclusion:** burnout was prevalent among healthcare students. This study found that healthcare students exhibited high emotional fatigue (EE), professional efficacy (PE), and moderate cynicism. Academic performance was associated to burnout. Occupational therapy students, first-year students, employed students, clinical doctorate students, and high GPA students were associated with burnout. Therefore, this study helps educational institutions and stakeholders develop coping techniques and interventions to improve students' mental health and academic performance.

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CHAPTER I

Introduction

The concept of burnout finds its roots in the mid-20th century. Freudenberger et al. (1974) is recognized for coining the word "burnout" to characterize the emotional exhaustion and diminished interest felt by those in occupations which involve helping others (Freudenberger et al., 1975). Moreover, he found this occurrence in healthcare workers and defined burnout as a condition of ongoing physical and emotional exhaustion. Maslach and Jackson's pioneering research in the late 1970s contributed significantly to the comprehension of burnout. Their groundbreaking approach outlined three fundamental elements: emotional weariness, depersonalization, and limited personal accomplishment (Maslach & Jackson, 1981). This multifaceted approach is now the basis for evaluating and understanding burnout. Further studies have broadened the understanding of burnout to include occupations outside of healthcare, acknowledging its common occurrence in several job fields, including client services, call centers, and information technology (IT) (Shirom, 2005).

Burnout syndrome (BO), as conceptualized by Maslach et al., 2001, is a complex psychological disorder that stems from prolonged stress in the workplace. This structure consists of three main components: emotional exhaustion, depersonalization, and inadequate personal accomplishment (Maslach et al., 2001). First, emotional exhaustion is the key component of burnout and refers to the depletion of emotional resources caused by extended exposure to pressures in the workplace. People suffering from emotional exhaustion frequently describe feeling drained and tired, signifying a notable effect on their emotional health (Maslach et al., 2001). Second, depersonalization component encompasses the cultivation of adverse attitudes and cynicism towards one's profession and colleagues. People suffering depersonalization may exhibit

an indifferent and distant attitude towards their profession, seeing coworkers and clients as things rather than acknowledging their humanity (Maslach et al., 2001). Lastly, inadequate personal accomplishment indicates a decrease in an individual's perceived skill and success in their professional field. This component signifies a decrease in self-efficacy and effective involvement in work-related duties, leading to a general feeling of burnout (Maslach et al., 2001).

Student's academic performance is often assessed with standard evaluation instruments such as exams, coursework, and assignments. Student's theoretical subject achievements are evaluated by their academic success. The most common way to measure a student's performance in class is by looking at their grade point average (GPA) (O'Neill et al., 2011). Therefore, healthcare students have several difficulties which can greatly affect their mental health, including high academic expectations, extensive study hours, and the emotional strain of patient care duties (Singh et al., 2020). The pressure on individuals' schedules and the weight of their tasks can result in emotional illnesses (Noor et al., 2023). The imbalance in the relationship between medical professionals and students can worsen psychological changes. Therefore, it emphasizes the need to create supportive environments in healthcare education to reduce the likelihood of mental health problems (Logeshwaran et al., 2022).

Students in the healthcare professions are more likely to experience burnout than students in other professions (Bullock et al., 2017). Moreover, interactions with patients in healthcare environments can evoke emotions such as fear, inadequacy, and irritation among practicing healthcare students (Martin Jr. et al., 2015). In addition to the academic stress due to the desire to get excellent marks, healthcare students experience significant pressure from their interactions with patients and the fear of making critical errors during clinical rotations, ultimately resulting in elevated levels of burnout (Siraj et al., 2022). Burnout levels are expected to rise as students

advance in their academic program. Students and interns possess advanced skills. Transitioning from classroom learning to clinical practice causes heightened stress and burnout in respiratory therapy students (Yahya et al., 2021)

Statement of Problem

Burnout syndrome can have adverse effects on both the physical and mental aspects of the human being. Students are prone to burnout during clinical rotations, examination, and presentations throughout their academic journey. Although burnout is a significant issue among students, there is a dearth of scientific study on the prevalence of burnout and its impacts the academic performance of healthcare students at Byrdine F. Lewis College of Nursing and Health Professions, Georgia State University. Therefore, this study was intended to assess if there is adverse effect of burnout on academic performance. The study hypothesized that there is an adverse impact of burnout on academic performance.

Purpose of Study

This study sought to assess the prevalence of burnout syndrome among healthcare students at Byrdine F. Lewis College of Nursing and Health Professions, Georgia State University. Additionally, this study aimed to investigate the impact of burnout syndrome on the academic performance of health care students at Georgia State University. The Study also evaluated the severity of burnout syndrome in healthcare professional students.

Significance of Study

This study is focused on examining the impact of burnout syndrome on academic performance among healthcare students at Byrdine F. Lewis College of Nursing and Health Professions, Georgia State University. Several researchers have explored the incidence of burnout syndrome among medical, occupational therapy, and nursing students. However, there is no

published study that investigates the prevalence of burnout syndrome and its influence on academic performance among healthcare students in the United States of America (Kajjimu et al., 2021; Siraj et al., 2022). The study results will significantly raise awareness of the negative effects of burnout syndrome on learning, encouraging educational institutions to offer sessions and healthcare recommendations to enhance students' well-being and academic performance.

Research Questions

The study questions were meant to answer the following questions:

1. What is the prevalence rate and severity level of burnout syndrome among healthcare students?
2. What is the association between sociodemographic characteristics and burnout syndrome among healthcare students?
3. What is the association between burnout syndrome and the academic performance among healthcare students?

Summary

In conclusion, burnout syndrome is a psychiatric disease that impairs students' cognitive ability (Noor et al., 2023). The negative impact of burnout on students' academic performance is evident through reduced concentration, motivation, and cognitive abilities. Furthermore, sustained burnout exacerbates stress and anxiety, hindering students' ability to actively participate in their studies and fulfill academic requirements (Singh et al., 2020). As a result, this study investigated the prevalence of burnout syndrome and its impact on the academic performance of healthcare professional students at Byrdine F. Lewis College of Nursing and Health Professions, Georgia State University.

Chapter II

Literature review

Healthcare students face many challenges that can significantly impact their mental well-being, including overwhelming academic demands, long hours of study, and the emotional toll of patient care responsibilities (Singh et al., 2020). The strain on their schedules and the weight of their duties can lead to the development of emotional disorders, as highlighted by research conducted by Noor et al. (2023). Furthermore, the imbalance in the relationship between medical professionals and students, as emphasized by Logeshwaran et al. (2022), can exacerbate these psychological changes, underscoring the importance of fostering supportive environments within healthcare education to mitigate the risk of mental health issues. It is manifested through depression and professional impotence, hence burnout. Kajjimu et al.'s (2021) study defines the prevalence of burnout as the frequency with which fatigue is observed within a specific population. The burden of healthcare education, with all its obligations, has led to increased burnout among students from the healthcare sector (Nteveros et al., 2020). The problem is faced by the students who study medicine, nursing, RT, and OT. This paper will focus on the causes, impacts, and interventions of burnout in diverse healthcare student sectors.

Overview of Burnout

Studies define burnout as a psychological syndrome categorized by chronic workplace pressure that has not been coped with (Tlili et al., 2021). Nurse burnout is considered a serious work- and studies-related illness that significantly affects nurses and their patients (Tawfik et al., 2019). Unfortunately, the prevalence of burnout in healthcare continues to increase, making it even more important to learn how to manage and prevent this condition (Tlili et al., 2021). This condition affects students across diverse disciplines, including medical, nursing, respiratory

therapy, and occupational therapy. The causes of this pattern are unmanaged chronic academic and workplace stress (Nteveros et al., 2020). It results in the symptoms of emotional exhaustion, depersonalization, and reduced job efficacy. The impact of this issue goes beyond the academic level since it affects clinical performance. Poor performance results in medical errors and diminished quality of patient care (Kajjimu et al., 2021). These complications raised the urgent need for implementing tailored interventions and coping strategies aimed at promoting students' and their academic achievements.

Prevalence of Burnout

In Tunisia, a study showed that the prevalence of burnout among health sciences students is high and reaches 64.4% (Almutairi et al., 2022). The study identifies critical factors related to burnout. They encompass diagnosed health conditions, mental disorders, sleep problems, and socio-economic status. Nteveros et al. (2020) highlight the importance of early preventive measures to address burnout risks. The authors highlight the need for more effective interventions to address specific issues affecting Tunisia's healthcare students.

Tlili et al. (2021) offered a broad outlook on rates associated with risk aspects. The study collected data from more than 40 studies. The study involved more than 26,000 medical students. The findings displayed that the overall burnout prevalence was approximately 40% (Rosales-Ricardo et al., 2021). Thus, the research focuses on this phenomenon's nature and emphasizes demographic factors in intervention strategies. Kajjimu et al. (2021) study conducted in Uganda shows a high frequency of burnout among learners with 54. The research highlights the importance of preventative and interventional measures in the medical curriculum. These two studies highlight the significance of understanding and dealing with burnout in different educational settings.

Rosales-Ricardo et al. (2021) included 20 studies and estimated the incidence of burnout scopes at 56.4% for emotional fatigue, 31.6% for distrust, and 30.9% for academic efficacy. The results highlight the universality of burnout among university students and call for a comprehensive approach to address various aspects of this syndrome. Nteveros et al.'s (2020) study in Cyprus focuses on all medical students—this analysis estimates an 18.1% prevalence of burnout. The exploration identifies a linear association between academic year and burnout frequency, emphasizing the increasing vulnerability during clinical education. Therefore, with the scope above, it is evident that burnout is a critical issue in healthcare, especially among students worldwide. Due to the increase in percentages revealed by diverse studies, there is a need to investigate the factors contributing to the issue.

Singh et al. (2020) found that the overwhelming academic demands, long study hours, and emotional toll of patient care responsibilities placed healthcare students under significant strain. This strain on their schedules and weight of duties can lead directly to the development of emotional disorders like burnout, anxiety, and depression. The academic demands combined with clinical responsibilities leave little time for self-care, exacerbating mental health problems.

Noor et al. (2023) built upon this by conducting research that confirmed healthcare students do experience high rates of emotional disorders as a result of their challenging course loads and duties. Working with patients brings a dynamic element that takes its toll. Logeshwaran et al. (2022) added that an imbalance in the relationship between healthcare professionals and students can further impact mental wellness. An environment without proper support from superiors fails to mitigate some of the psychological stressors that students face. Both studies demonstrated the prevalence of mental health issues among healthcare students from both academic and clinical pressures. Additionally, supportive relationships were essential to fostering resilience.

Factors Contributing to Burnout among Nursing Students

Several factors contribute to the high frequency of burnout among healthcare students, creating challenges that affect mental well-being. The study by Tlili et al. (2021) demonstrates that academic stressors overwhelm nursing students. They contain heavy workloads, challenging coursework, and the need to maintain high academic standards. Kong et al. (2023) agree with the previous findings, asserting that the demanding nature of the nursing curriculum and the necessity for clinical competencies leave little room for relaxation. The author emphasizes the emotional toll of working in healthcare settings, fostering an environment conducive to burnout. Experiencing hardship and confronting life-and-death scenarios during internships exacerbates stress levels.

According to Woo et al. (2020), clinical placements, a crucial component of nursing education, contribute to burnout among students. The exposure to high-stakes, emotionally charged situations in actual healthcare settings is emotionally draining. It is worse for those still navigating their roles as healthcare professionals. Similarly, a review by Nteveros et al. (2020) found that lack of support and mentorship during clinical placements further intensifies stress. Many students feel they need help to cope with the challenges they encounter. Thus, adequate mentorship and supervision are crucial in helping students mitigate burnout throughout the clinical practices.

The systematic review by Gómez-Urquiza et al. (2023) on the frequency and stages of burnout in nursing students demonstrates increasing cases of burnout among these learners. Specifically, senior students were more prone to experiencing stress and emotional exhaustion compared to junior students during the initial years of their academic journey. For example, clinical training that puts students in contact with the challenges of an actual healthcare setting leads to more incredible burnout. Ge et al. (2023) assert that personal factors, such as coping

mechanisms, resilience, and prior experiences, are pivotal in influencing burnout. Students with limited coping strategies are more prone to burnout. These learners need help managing the demands of their academic and clinical responsibilities (Abram & Jacobowitz, 2021; Nteveros et al., 2020).

Studies by Kushida and Troster (2023) and Siraj et al. (2022) note that individuals with pre-existing mental health concerns are at a higher threat of experiencing a breakdown. The authors acknowledge interventions tailored to each learner's needs, promote resilience, and create a nurturing learning environment. Studies have shown that institutional factors, including the organizational culture of nursing programs, lead to burnout. The survey by Alamri et al. (2020) shows that insufficient faculty support, lack of resources, and a competitive learning environment are additional student stressors. Institutions that advocate for a culture of well-being offer support services and implement measures to reduce academic stressors.

Respiratory Therapy (RT) Students

Siraj et al. (2022) carried out a study among respiratory therapy students and interns in Saudi Arabia; 95% of them indicated high burnout levels. The most reported dimensions are emotional fatigue, depersonalization, and individual achievement. The findings highlight the need to address burnout among respiratory therapy students as it may impact future healthcare providers. A similar study by Yahya et al. (2021) found that burnout levels will likely increase as students' progress through their course. The authors assert that fourth-year students and interns have upper levels. Thus, transitioning from classroom learning to clinical practice increases stress and burnout in RT students. The study by Siraj et al. (2022) also elaborates on the connection between academic performance, GPA, and burnout frequencies, a counterintuitive association. This feature emphasizes the need to consider individual and systemic factors that cause burnout.

Applying preventing measures such as counseling academic advisors and psychologists about students' stressors and obstacles during their academic journey, thereby fostering the mental health of students.

Prevalence of Burnout among Occupational Therapy Students

Understanding burnout issues in occupational therapy (OT) students is essential due to its impact on their academic performance (Edwards et al., 2010). It also contributes to the quality and productivity of future employees in this field. Burnout, characterized by emotional exhaustion, depersonalization, and decreased individual accomplishment, has been a severe problem in healthcare education (Gómez-Urquiza et al., 2023). Burnout can affect students' academic performance and overall quality of life (Abram & Jacobowitz, 2021). Studies by Kushida and Troster (2023) and Ge et al. (2023) have reported high levels of burnout in occupational therapy students. More importantly, several factors can have contributed significantly to the psychological strain, including academic workload, clinical placements, and personal stressors, which have contributed significantly to the psychological strain they experience.

Abram and Jacobowitz's (2021) research notes that the rigor of occupational therapy education puts students at risk for burnout due to heavy academic curriculum and clinical practice. Research demonstrated the theoretical and practical burden worsens when learners cope with handling complex cases of patients (Rosales-Ricardo et al., 2021). Kajjimu et al. (2021) indicate that burnout upsurges during the transition from classroom to clinical practice. These findings suggest that students need help handling the complexities of healthcare atmospheres.

Kajjimu et al. (2021) found that burnout has wide-ranging consequences for students' professional growth. Recent research by Rosales-Ricardo et al. (2021) revealed that burnout conditions have a damaging impact on the psychological well-being of students. Numerous reviews

demonstrate that burnout affects students' capacity to provide quality patient care (Kajjimu et al., 2021; Tlili et al., 2021). Studies showed that burnout students are characterized by low empathy and a lack of professional efficacy. Therefore, it is evident that these actions weaken their prospects of becoming future OT practitioners (Abram & Jacobowitz, 2021). Burnout management should be based on an approach that includes organizational support, self-care strategies, and resilience building (Tlili et al., 2021; Abram & Jacobowitz, 2021). A favorable learning environment promotes resilience in learners, allowing them to succeed academically and professionally.

Prevalence of Burnout on Medical and Dental Students

In healthcare, burnout is not limited to nurses. Medical and dental students also face challenges and stressors. The data on the rates of medical students experiencing burnout due to such high demands is approaching 40% (Rosales-Ricardo et al., 2021). The academic workload is enormous, clinical experiences are high-stakes, and the pressure to maintain good grades all increase stress levels. Likewise, dental students face the challenging aspects of their education, combining theoretical and practical practice (Tlili et al., 2021; Woo et al., 2020). Their challenges, including clinical practice demands and academic pressures, make them vulnerable to burnout.

Burnout is an epidemic affecting medical students and impairs their well-being and academic performance. A cross-sectional analysis study at the College of Medicine, University of Kerbala, highlights a notable burnout syndrome. The results showed that 38% had heightened emotional exhaustion at 86%, cynicism at 78%, and decreased proficient efficacy at 33% (Yahya et al. 2021). Regular use of legal substances and a family history of mental illnesses were among the factors associated with higher rates of burnout (Kushida and Troster, 2023). These results imply the necessity of a holistic approach to the mental health of medical students.

Kong et al. (2023) study indicates that dental students, as a result of the distinct stressors of their profession, are at risk of burnout. Many studies have used the Maslach Burnout Inventory-Student Survey (MBI-SS) to assess the burnout level in dental students. The results showed a moderate prevalence of burnout at 18% (Rosales-Ricardo et al., 2021). This illuminates the problem of mental health among dentists. Dental students' burnout is correlated with factors of students' performance, medication intake related to studies, and quitting the course (Kajjimu et al. 2021). These dimensions reflect the psychosocial and individual aspects of burnout among dental students.

Effects of Burnout

The impact of burnout on the clinical performance of healthcare students is substantial. One concerning aspect is the heightened risk of medical errors associated with burnout. Emotional fatigue, reduced concentration, and detachment from work contribute to lapses in judgment and attention (Woo et al., 2020). These factors increase the probability of diagnosis, treatment, or patient management mistakes. Furthermore, burnout leads to diminished compassion, which will impact overall quality of patient care (Ge et al., 2023; Siraj et al., 2022). This gap hinders effective communication and rapport-building. Patients perceive a need for more engagement, affecting their satisfaction with their healthcare experience (Kajjimu et al., 2021). Research has also demonstrated that healthcare professionals suffering from burnout are more likely to commit medical errors, reduced job satisfaction, and patient dissatisfaction (Rosales-Ricardo et al., 2021; Alamri et al., 2020). The results show that as future healthcare professionals, students experiencing burnout bring these negative consequences into their clinical practice—such experiences threaten patient safety and health outcomes (Alamri et al., 2020). Thus, dealing with burnout in healthcare students is critical to protecting their health and ensuring patient-centered care.

The effects of burnout extend beyond academic and clinical settings. It has impacts on psychological well-being. Chronic stress and emotional exhaustion contribute to an increased vulnerability to psychological distress. Studies have linked burnout to heightened levels of stress, anxiety, and depression (Alamri et al., 2020). Moreover, the emotional toll of burnout leads to a sense of disillusionment, contributing to the risk of psychological disorders. Continuous exposure to high-pressure situations erodes the mental resilience of healthcare students, causing psychological disorders (Siraj et al., 2022; Nteveros et al., 2020). Proactive measures to mitigate burnout foster a resilient and emotionally healthy future healthcare workforce.

In addition, burnout leads to workforce issues and shortages in the healthcare system. The study by Kong et al. (2023) shows that burnout increases attrition rates, dropouts from programs, and unwillingness to work in healthcare. The analysis by Gómez-Urquiza et al. (2023) supports the previous findings, stating that burnout has led to 40% of the current shortage of healthcare professionals. A broad study on burnout among medical students in Cyprus by Nteveros et al. (2020) shows that the phenomenon prevents people from disadvantaged backgrounds from qualifying for healthcare professions. As a result, burnout continues to promote inequality in accessing care (Gómez-Urquiza et al., 2023; Siraj et al., 2022). The fight against burnout among healthcare students is essential for attracting and retaining a diverse, competent workforce. This initiative guarantees the provision of health care services for all people. Investing in interventions and support systems to address burnout among healthcare students promotes the long-term sustainability and resilience of the health workforce (Nteveros et al., 2020), which benefits both learners and patients.

Interventions

Resilience is the capacity to endure and overcome stressful situations. This inner ability has become a buffer against burnout for healthcare students. Studies have shown that students with high resilience are less likely to suffer from burnout, stress, and depression (Yahya et al., 2021). Resilience-promoting interventions, including stress management programs and mindfulness training, have been shown to help reduce burnout in healthcare students (Tlili et al., 2021; Woo et al., 2020). The importance of resilience in reducing burnout among RT students and interns became a significant issue. According to Abram and Jacobowitz (2021), only a few students showed high resilience. Nevertheless, the study also revealed a strong association between resilience and three magnitudes of burnout. These include emotional weakness, depersonalization, and personal attainment.

Support programs are indispensable when it comes to mitigating burnout. Learning institutions that create a supportive atmosphere enhance student cognitive health (Siraj et al., 2022; Nteveros et al., 2020). Besides, another study by Kushida and Troster (2023) specifies that coupling learners with mentors enables sharing experiences and reinforcement. A large body of research discloses that this tradition fosters a sense of belonging among the students (Kajjimu et al., 2021). At the same time, Woo et al. (2020) state that mentors offer emotional support and role-modeling of effective stress management strategies and self-care practices. The findings by Rosales-Ricardo et al. (2021) show that these programs increase student resilience.

Yahya et al. (2021) study reveals that institutional support and policy changes develop environments where student well-being is prioritized for burnout reduction. The authors state that institutions should spend resources on mental health services, counseling, and wellness programs to support students. Many studies have shown that proactive measures to implement evidence-

based interventions and advocate for systemic changes address burnout, fostering resilient, thriving professionals (Siraj et al., 2022; Kajjimu et al., 2021). Therefore, it is essential to equip students with proper coping mechanisms and support systems from an early age. It makes them ready for the demands of their future jobs, thereby minimizing burnout.

Conclusion

The high burnout rate among healthcare students is a challenging issue that impacts the healthcare system in a negative manner, affecting individuals and the entire health system. Burnout is a global issue that requires holistic interventions targeting individual and institutional factors. The literature found that policies that ensure the well-being of students and integrated wellness initiatives enable learners to handle their education demands with resilience. The studies call for promoting a culture of self-care, work-life balance, and open communication. This approach fosters a positive learning environment that nurtures healthcare students' personal and professional growth. It guarantees that students can deliver patient-centered care while safeguarding their mental health and well-being.

CHAPTER III

Methodology

This section presents a summary of the approaches and methods designated for the execution of the research project. This study was conducted through a cross-sectional survey aimed to assess the prevalence of burnout and its subsequent effect on the academic performance of healthcare students at the Byrdine F. Lewis College of Nursing and Health Professions at Georgia State University. The study used a validated questionnaire known as Maslach Burnout Inventory-General Survey for Students (MBI-GS (S)) to evaluate the incidence and severity of burnout

among participants. The participants were requested to provide self-reported information. Concurrently, academic performance was assessed through the Cumulative Grade Point Average (CGPA) of the enrolled students. The use of this study design was based on its ability to successfully answer the research questions, hence maximizing the use of time and resources.

Research Questions

The study questions were meant to answer the following questions:

1. What is the prevalence rate and severity level of burnout syndrome among healthcare students?
2. What is the association between sociodemographic characteristics and burnout syndrome among healthcare students?
3. What is the association between burnout syndrome and the academic performance among healthcare students?

Study instrument

This study examined the prevalence of BO among healthcare students who enrolled in the Byrdine F. Lewis College of Nursing and Health Professions at Georgia State University will be evaluated by using a 16-item survey. The MBI-GS questionnaire for students, the most frequently utilized self-assessment instrument for determining the risk of burnout among students, comprised the survey. Maslach and Jackson were responsible for its design and organization (Maslach et al., 2001). The Maslach Burnout Inventory General Survey for Students comprises three subscales: Exhaustion (EX), Cynicism (CY), and Professional Efficacy (PE). Exhaustion (EX) refers to the experience of feeling overwhelmed and fatigued as a result of one's academic pursuits. Cynicism (CY) is a gauge of apathy or a detached demeanor towards one's studies. Professional Efficacy (PE) is a measure of satisfaction with past and present achievements, and it specifically evaluates an individual's expectations of ongoing performance in an educational setting (Portoghese et al.,

2018). The student's academic performance was assessed based on their Cumulative Grade Point Average (CGPA). The academic achievement was categorized as excellent, average, poor, and extremely poor. The rating scale is as follows: a score of 3.50-4.00 is considered excellent, a score of 3.00-3.49 is considered average, a score of 2.50-2.99 is considered poor, and a score below 2.5 is considered extremely poor.

Research design

This cross-sectional research was conducted on participants enrolled in healthcare students at Byrdine F. Lewis College of Nursing and Health Professions, Georgia State University. The data collection phase of the study was scheduled after the acquisition of approval from the ethics committee and Institutional Review Board (IRB) at Georgia State University.

Study Population and Sampling Technique

Methods of participant recruitment include convenience sampling. The selection of participants depended on their level of availability. Healthcare students at Byrdine F. Lewis College of Nursing and Health Professions were the population of interest. The exclusion criteria for this study comprised those who were not enrolled as active healthcare students at Georgia State University throughout the duration of the research.

Protection of Human Subjects

Data collection was commenced after the necessary ethical sanction has been obtained from the Institutional Review Board (IRB) of Georgia State University. Documents of informed consent was provided to participants, detailing the purpose of the study, their rights as participants, and the voluntary nature of their participation. The identity and confidentiality of participants, in addition to their personal information, was secured.

Data Analysis

Data analysis was conducted using version 29 of the Statistical Package for the Social Sciences (SPSS) software. For categorical variables, descriptive statistics of the participants were presented as frequencies, percentages, means, and standard deviations. The study employed an to compare MBI-GS (S) scores inside and across categories, we utilized a one-way ANOVA, Chi-Square test, and Pearson correlation tests. A statistically significant association was shown by a p-value equal or less than 0.05.

Chapter IV

Results

The purpose of this study was to assess the prevalence of burnout and its subsequent impact on the academic performance among healthcare students. Results are presented for each of the research questions.

Research Questions

The study questions were meant to answer the following questions:

1. What is the prevalence rate and severity level of burnout syndrome among healthcare students?
2. What is the association between sociodemographic characteristics and burnout syndrome among healthcare students?
3. What is the association between burnout syndrome and the academic performance among healthcare students?

Demographic characteristics of the study participants

A total of 327 responses were received, including both undergraduate and graduate levels across four professions: Respiratory Therapy, Nursing, Occupational Therapy, and Physical Therapy. The gender distribution was as follows: 273 female participants (83.5%) and 60 male

participants (16.5%) with a mean age of 24.13 years old (SD ± 4.5). The Respiratory Therapy students had the highest presence (n=90, 27.5%), followed by Physical Therapy (n=81, 24.8%), Nursing (n=79, 24.2%), and Occupational Therapy (n=77, 23.5%). Most of the students were an undergraduate (baccalaureate) (n=159, 48.6%), followed by a clinical doctorate (n=154, 47.1%), and graduate (master) (n=14, 4.3%). In terms of program advancement, 184 participants (56.3%) were in their second year, while 143 were also in their second year (43.7%). The majority of students were single, including 293 individuals (89.6%), and had a cumulative GPA ranging from (3.50 to 4.00) (n= 157, 48.0%). Additionally, more than Half of the students were employed (n= 192, 58.7%) with a mean of 16.23 hours per week (SD ± 9.3). Moreover, healthcare students typically manage emotional exhaustion by exercise (n=119, 36.4%), followed by relaxation and sleep (n=52, 15%). **Table 4.2** presents the distribution of participants who preferred to cope the burnout by doing exercises among the four different professions. The demographic characteristics of all participants are comprehensively summarized in **Table 4.1**

Table 4.1 Frequencies of all participants' demographic characteristics (n=327).

| Variables | Frequency (%), m (\pmSD) |
|---------------------------------------|--|
| Gender n (%) | |
| Male | 54 (16.5%) |
| Female | 273 (83.5%) |
| Age (mean, \pmSD) | 22.75 \pm 3.8 |
| Profession n (%) | |
| Respiratory therapy | 90 (27.5%) |
| Physical therapy | 81 (24.8%) |
| Nursing | 79 (24.2%) |
| Occupational therapy | 77 (23.5%) |

| | |
|---|-------------|
| Level of education n (%) | 159 (48.6%) |
| Undergraduate | 14 (4.3%) |
| Graduate (master) | 154 (47.1%) |
| Clinical doctorate | |
| Level of program n (%) | |
| First year | 143 (43.7%) |
| Second year | 184 (56.3%) |
| Marital status n (%) | |
| Single | 293 (89.6%) |
| Married | 34 (10.4%) |
| Cumulative GPA n (%) | |
| 3.50 – 4.00 | 157 (48.0%) |
| 3.00 – 3.49 | 147 (45.0%) |
| 2.50 – 2.99 | 19 (5.8%) |
| 2.00 – 2.49 | 4 (1.2%) |
| Work status n (%) | |
| Employed | 192 (58.7%) |
| Non-employed | 135 (41.3%) |
| Working hours per week (mean, ±SD) | 16.23 ±9.3 |
| Coping Technique | |
| Exercise | 119 (36.4%) |
| Relaxing and sleep | 52 (15.9%) |
| Nothing | 41 (12.5%) |
| Drinking alcohol | 37 (11.3%) |
| Video gaming and social media | 32 (9.8%) |
| Other | 46 (14.0%) |

Data are presented as frequency and percentage or mean ± standard deviation.

Table 4.2: The distribution of coping strategy among professions.

| Professions | | Exercise |
|-----------------------------|-------|----------|
| Physical therapy | Count | 31 |
| Occupational therapy | Count | 35 |
| Nursing | Count | 40 |
| Respiratory therapy | Count | 13 |

Chi-Square test

Findings Related to Question 1

The prevalence of burn out was measured by MBI-GS(S), which includes 16 items on a 7-point scale, ranging from 0 "Never" to 6 "Every Day". The prevalence of burnout was measured by using three subscales Emotional Exhaustion (EE), Cynicism (CY), and Professional Efficacy (PE). This study found that healthcare students demonstrated a high level of emotional exhaustion (EE), with a mean score of 3.65 (SD \pm 1.34). Also, healthcare students exhibit a moderate level of cynicism (CY) with a mean of 2.05 (SD \pm 1.25). In addition, participants reported a high of professional efficacy (PE), with a mean score of 4.43 (SD \pm 0.96).

Table 4.3: Maslach Burnout Inventory-General survey (S) (MBI-GS(S)) scoring*

| Categorization | High (mean score) | Moderate (mean score) | Low (mean score) |
|----------------|-----------------------------|---------------------------------|----------------------------|
| EE | ≥ 3.50 | 1.50–3.49 | ≤ 1.49 |
| CY | ≥ 3.50 | 1.50–3.49 | ≤ 1.49 |
| PE | ≤ 2.49 | 2.50–3.99 | ≥ 4.00 |

*Ref: MBI manual 4th edition. EE: Emotional Exhaustion, CY: Cynicism, PE: Professional Efficacy

Table 4.4: Prevalence BO among healthcare students (n= 327).

| Categorization | Mean | ±SD |
|-----------------------|-------------|--------------|
| EE | 3.65 | ±1.34 |
| CY | 2.05 | ±1.25 |
| PE | 4.43 | ±0.96 |

EE: Emotional Exhaustion, CY: Cynicism, PE: Professional Efficacy

More than half of the healthcare students 188 (57.5%) had a high level of EE. Concerning CY, 167 (51.1%) of the healthcare students had moderate level of CY. Furthermore, the majority of healthcare students 244 (74.6%) had a high score of PE. **Table 4.5** presents the prevalence and percentage of BO among healthcare students.

Table 4.5: Severity level of BO among healthcare students (n= 327).

| Categorization | N (%) | | |
|-----------------------|--------------|-----------------|-------------|
| | High | Moderate | Low |
| EE | 188 (57.5%) | 111 (33.9%) | 28 (8.6%) |
| CY | 42 (12.8%) | 167 (51.1%) | 118 (36.1%) |
| PE | 244 (74.6%) | 75 (22.9%) | 8 (2.4%) |

EE: Emotional Exhaustion, CY: Cynicism, PE: Professional Efficacy

Findings Related to Question 2

A one-way ANOVA test analysed the association between sociodemographic characteristics and three measures of burnout EE, CY, and PE among healthcare students (**Table 4.5**). There was an association between EE and the healthcare profession ($F = 4.61, p = 0.004$). OT students had a high mean of EE 4.0 ($SD \pm 1.17$) compared to the other healthcare students (RT: 3.4, N: 3.4, PT: 3.7). An association was observed between EE and the educational level of healthcare students ($F = 6.46, p = 0.002$). Clinical doctoral students exhibited a high mean of EE at 3.9 ($SD \pm 1.20$) in

contrast to undergraduate and graduate students, who had means of 3.4 and 3.0. Furthermore, the CY was associated with healthcare students who were employee ($F = 4.08, p = 0.044$). Healthcare students who were employed had significantly higher CY score compared to non-employed students (2.1 (SD± 1.29) vs 1.8 (SD± 1.17)). Additionally, the program level had a noticeable association with PE ($F = 4.30, p = 0.039$). Second year students had a significantly higher PE score compared to first year students (4.5 (SD± 0.93) vs 4.3 (SD± 0.97)). Furthermore, Bivariate Personal correlations were performed to measure the interrelationships among BO and students' working hours (Table 4.8). There was a statistically significant weak positive correlation between students' working hours and EE ($r = 0.114, p = 0.039$).

Table 4.6: The association of sociodemographic characteristics data with BO (n=327).

| Sociodemographic Characteristics | N | EE Mean (±SD) | CY Mean (±SD) | PE Mean (±SD) |
|---|----------|--------------------------|--------------------------|--------------------------|
| Professions | | | | |
| Physical therapy | 81 | 3.7 (±1.1) | 1.8 (±1.3) | 4.4 (±0.86) |
| Occupational therapy | 77 | 4.0 (±1.1) | 2.0 (±1.2) | 4.4 (±0.89) |
| Nursing | 79 | 3.4 (±1.2) | 2.3 (±1.2) | 4.5 (±0.99) |
| Respiratory therapy | 90 | 3.4 (±1.6) | 1.9 (±1.2) | 4.3 (±1.07) |
| | | $F = 4.61, p = 0.004^*$ | $F = 1.80, p = 0.146$ | $F = 0.60, p = 0.61$ |
| Level of education | | | | |
| Undergraduate | 159 | 3.4 (±1.4) | 2.1 (±1.2) | 4.4 (±1.0) |
| Graduate (master) | 14 | 3.0 (±1.6) | 1.6 (±1.1) | 4.4 (±1.0) |
| Clinical doctorate | 154 | 3.9 (±1.2) | 1.9 (±1.2) | 4.4 (0.88) |
| P value | | $F = 6.46, p = 0.002^*$ | $F = 1.80, p = 0.25$ | $F = 0.02, p = 0.97$ |
| Level of program | | | | |
| First year | 143 | 3.5 (±1.4) | 1.9 (±1.3) | 4.3 (±0.93) |
| Second year | 184 | 3.7 (±1.2) | 2.1 (±1.2) | 4.5 (±0.97) |
| | | $F = 1.30, p = 0.25$ | $F = 0.86, p = 0.35$ | $F = 4.30, p = 0.03^*$ |

| Working status | | | | |
|-----------------------|-----|----------------------|-------------------------|----------------------|
| Non-employed | 135 | 3.7 (± 1.3) | 1.8 (± 1.1) | 4.4 (± 0.92) |
| Employed | 192 | 3.5 (± 1.3) | 2.1 (± 1.2) | 4.3 (± 0.98) |
| | | F = 0.90, $p = 0.34$ | F = 4.08, $p = 0.044^*$ | F = 0.80, $p = 0.37$ |

*: Significant. EE: Emotional Exhaustion, CY: Cynicism, PE: Professional Efficacy. SD: Standard Deviation. GPA: Grade Point Average.

Findings Related to Question 3

In terms of academic performance, there was an association between EE and GPA ($F = 2.69, p = 0.046$). Healthcare students with a cumulative GPA of 3.00 – 3.49 had significantly elevated EE scores in comparison to other students. **Table 4.7** presents all the outcomes of the one-way ANOVA test. Additionally, Bivariate Personal correlations were performed to measure the interrelationships among BO and GPA (**Table 4.8**). There was a statistically significant weak positive correlation between GPA and PE ($r = 0.147, p = 0.008$). There was no statistically significant correlation between GPA and EE ($r = 0.010, p = 0.855$), nor between GPA and CY ($r = 0.13, p = 0.819$).

Table 4.7: The association of GPA with BO.

| GPA | N | EE Mean (\pm SD) | CY Mean (\pm SD) | PE Mean (\pm SD) |
|-------------|-----|-------------------------|------------------------|------------------------|
| 3.50 – 4.00 | 157 | 3.5 (± 1.2) | 2.0 (± 1.1) | 4.5 (± 0.89) |
| 3.00 – 3.49 | 147 | 3.8 (± 1.4) | 2.1 (± 1.3) | 4.3 (± 0.99) |
| 2.50 – 2.99 | 19 | 2.9 (± 1.5) | 1.7 (± 1.2) | 4.0 (± 1.1) |
| 2.00 – 2.49 | 4 | 3.8 (± 1.5) | 2.3 (± 0.57) | 3.7 (± 0.39) |
| | | F = 2.69, $p = 0.046^*$ | F = 0.78, $p = 0.50$ | F = 2.63, $p = 0.05$ |

*: Significant. EE: Emotional Exhaustion, CY: Cynicism, PE: Professional Efficacy. SD: Standard Deviation. GPA: Grade Point Average.

Table 4.8: Interrelationships among sociodemographic characteristics and BO.

| | | EE | CY | PE |
|----------------------|------------------------------|-----------|-----------|-----------|
| Working hours | Pearson correlations | 0.114* | 0.075 | 0.055 |
| | Sig. (2-tailed) | 0.039* | 0.178 | 0.320 |
| | N | 327 | 327 | 327 |
| Age | Personal correlations | 0.040 | 0.073 | 0.065 |
| | Sig. (2-tailed) | 0.466 | 0.188 | 0.238 |
| | N | 327 | 327 | 327 |
| GPA | Personal correlations | 0.010 | 0.13 | 0.147* |
| | Sig. (2-tailed) | 0.855 | 0.819 | 0.008* |
| | N | 327 | 327 | 327 |

*: Significant. EE: Emotional Exhaustion, CY: Cynicism, PE: Professional Efficacy. SD: Standard Deviation. GPA: Grade Point Average.

Chapter V

Interpretations of Findings

This chapter interprets findings presented in Chapter IV. This chapter is divided into six main sections: an introduction to the study, a discussion of the results, implications for future research, recommendations for future studies, the study's strengths and limitations, and a conclusion.

Overview of the study

This study aimed to address four concerns about the prevalence of burnout (BO) among healthcare students, the severity of burnout, the association between burnout and

sociodemographic characteristics, and its impact on academic performance. The study was guided by the following research questions:

1. What is the prevalence rate and severity level of burnout syndrome among healthcare students?
2. What is the association between sociodemographic characteristics and burnout syndrome among healthcare students?
3. What is the association between burnout syndrome and the academic performance among healthcare students?

Discussion

Findings Related to Research Question 1

The first question asked, "What is the prevalence rate and severity level of burnout syndrome among healthcare students?" The overall findings of this research question indicated that healthcare students exhibited a high level of emotional exhaustion (EE), a moderate level of cynicism (CY), and a high level of professional efficacy (PE). Emotional exhaustion (EE) was typically seen as the most indicator of burnout among the three subscales (Maslach & Leiter, 2016).

Burnout syndrome is a considerable challenge for healthcare workers and students desiring to pursue careers in the healthcare field (Wang et al., 2020). Our study findings were compatible with previous a survey-based study conducted by Siraj et al. (2022), which indicated that BO was prevalent among respiratory therapy students in Saudi Arabia at a rate of 95%. Specifically, 52% of the RT students and interns exhibited a high degree of EE (Siraj et al., 2022). More importantly, a research that was carried out in Saudi Arabia among students in the healthcare professions, it was revealed that 57% of students reported BO, and 62% of them had an elevated level of EE (Alemam et al., 2022). A related study conducted among healthcare students in the United Arab

Emirates reported findings consistent with our results, with 69% of participants demonstrating high levels of burnout (Salama et al., 2024). The findings of this study were in line with the findings of several of other studies conducted in a variety of countries, which revealed that BO was prevalent among students at a rate of more than 50% (Bullock et al., 2017).

More than half of the healthcare students (57%) had elevated scores in EE. These findings aligned with a research done among medical students, which reported an EE rate of 67% (Haile et al., 2019). Moreover, our study indicated that 12% of healthcare students achieved high scores for CY, which is similar to a previous study that reported 21% of healthcare students scoring high for CY (Harrafa et al., 2024). Healthcare students exhibited low ratings about lack of PE (2%). Conversely, a study including healthcare students indicated a significant prevalence of PE (62%)(Alemam et al., 2022).

Findings Related to Research Question 2

The second question asked, " What is the association between sociodemographic characteristics and burnout syndrome among healthcare students?" The findings of this study indicated that the profession, level of education, program level, and employment status were significantly associated with elements of burnout. This research revealed that the occupational therapy students had a significantly elevated mean score of EE in comparison to other healthcare students. These results exhibited similarities with another study that identified associative links between burnout and occupational therapy students (Nair et al., 2023). Recent research suggested that burnout, especially emotional burnout, is more prevalent in occupational therapy (OT) students than in other health professions (Hamed et al., 2023). This is Influenced by different factors such as academic workload, the clinical obligations and the profession's inherent emotional

demands. A study of Australian OT students found significant emotional exhaustion. (Morales-Rodríguez et al., 2019). The findings indicated that OT students have a higher risk of burnout due to the unique nature of training, highlighting the necessity for specialized support and treatment. (Morales-Rodríguez et al., 2019).

In terms of educational level, our study found that educational level was associated with high level of burnout. EE score was higher among graduate healthcare students. Similarly, a recent research revealed that graduate healthcare students, especially medical and nursing students, experience a higher levels of EE than undergraduate students (Hwang & Kim, 2022). The elevated burnout is attributed by the heightened level of academic requirements, clinical obligations, and emotional strain of patient care seen throughout graduate training (Almutairi et al., 2022). Additionally, a systematic review of 27 studies found a high levels of burnout in graduate healthcare students, which impacted their mental health, compassion and professional behavior. (Bullock et al., 2017).

In this study, we found that the level of program was significantly associated with burnout. First year students had a lower PE average than second year students. Accordingly, a recent study revealed a direct correlation between burnout and the academic year: first-year students were significantly burnt out more than second-year students (Roberts et al., 2020). Furthermore, a cross-sectional study was conducted among 330 medical students revealed that first-year students had greater levels of burnout compared to second-year students (Boni et al., 2018). This also aligned with a research that was conducted among 439 Saudi healthcare students, in which they found that first-year students showed the an elevated levels of burnout (Alsaad et al., 2021). Juniors are more likely to experience burnout as a result of adjusting to academic and clinical workloads and have less coping and resilience than senior students (Maria et al., 2020).

The current study observed a significant association between burnout and employment status. Employed students had greater scores in CY than non-employed students. This aligns with studies on healthcare students that emphasizes the need of resilience and self-care activities in alleviating burnout. Medical students frequently overlook self-care, resulting in increased burnout, particularly emotional tiredness, during their clinical years (Michael et al., 2024). Students who are employed, especially in healthcare, are more susceptible to burnout due to the combined pressures of professional and academic obligations. A subsequent study by Schramer et al. (2020) revealed that employed university students exhibited notable patterns of burnout in both professional and academic environments, with weariness and indifference as significant features. The research highlights that the equilibrium between academic and professional commitments significantly influences the prevalence of burnout, which is frequently influenced by context and exacerbated by the demands of both environments (Schramer et al., 2020).

Findings Related to Research Question 3

The third question asked, "What is the association between burnout syndrome and academic performance among healthcare students?" Numerous studies have found a significant association between burnout and students' academic performance (Madigan & Curran, 2021; Nikodijević et al., 1820; Shadid et al., 2020). Our results indicate that students who had a high academic performance (as determined by their GPA) experienced higher levels of burnout than those who had lower GPAs. These findings were in accordance with a research conducted among respiratory therapy students in Saudi Arabia, which indicated that students with high GPAs had higher levels of burnout compared to those with low GPAs (Siraj et al., 2022). Students who have higher GPA probably study harder and dedicate more attention to their education because they want to succeed academically. Accordingly, similar pattern was observed

in the initial study of burnout, which revealed that it impacted the most dedicated workers who engaged with greater intensity in their duties (Freudenberger et al., 1975). Research involving a total of 748 medical students from two different universities revealed that those with a high GPA had a greater risk of work-related burnout compared to their counterparts who had a low GPA (Arif et al., 2021).

Our results indicated that healthcare students typically mitigate their burnout through exercising. This finding agrees with previous research carried out among 2,647 medical students in the UK suggested that physical activity was the most predictive factor among all lifestyle and health behavior factors, correlating with increased professional efficacy and decreased emotional exhaustion (Cecil et al., 2014). Similarly, a cross-sectional study of 284 nursing students highlighted that inactivity was strongly associated with burnout and emotional exhaustion (Lopes & Nihei, 2020). According to the guidelines from the Centers for Disease Control and Prevention (CDC), aerobic exercises and weight training activities are associated with reduced levels of burnout and improved quality of life. (Dyrbye et al., 2017).

Implication of Research

The study's results contribute to a better understanding of BO prevalence among all professions of healthcare students. Furthermore, the study adds to the existing literature by evaluating the association between professional satisfaction, sociodemographic characteristics, and BO. This study outcomes guide the development of more specific programs that reduce the probability of healthcare students' burnout. This research raises awareness of the need for educational institutions to educate and implement regulations to help students avoiding BO. This study findings also highlight that healthcare students need to know where they can find more information concerning BO education.

Suggestions For Future Research

Further research is warranted due to the dearth of studies that assist the prevalence of burnout among healthcare students. Additionally, it is very advisable to replicate with a larger sample size to verify and generalize this study's results. Additionally, it is recommended that the study be replicated to cover a larger diversity of healthcare professions and other educational institutions. This approach would increase the generalizability and reliability of the results, offering a better understanding of how prevalent burnout is among healthcare students.

Limitations and Strengths

The findings of the current study are restricted by a number of factors that must be taken into consideration. One of the biggest challenges that limits the scope of the study was the fact that it only investigated a single educational institution, which results in the findings having limited generalizability. In addition, the predominant gender of participants was female, thus limiting the generalizability of the findings. Furthermore, there are few studies that measure burnout among healthcare students, especially those in respiratory therapy and occupational therapy. This lack of research presents difficulties when attempting to compare the findings of the current study with those of earlier research conducted in this field. Although the present study had its limitations, it included an adequate sample size of healthcare students from a variety of academic levels and programs.

Conclusion

Our study suggested that burnout was prevalent among healthcare students. This study findings demonstrated that healthcare students had high average score of emotional exhaustion (EE) and professional efficacy (PE) along with moderate average cynicism (CY). Burnout had an association with students' academic performance. Multiple sociodemographic variables were

strongly associated with high burnout, including occupational therapy students, first-year students, employed students, clinical doctoral students, and students with a high GPA. This study offers significant insights for educational institutions and stakeholders to collectively implement specific interventions and strategies for coping that enhance students' mental well-being and academic performance.

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Appendix A: Informed Consent and Study Questionnaire

Burnout and its impact on academic performance among healthcare students

You are invited to participate in a research study entitled “Burnout and its impact on academic performance among healthcare students” Burnout is defined as a psychological disorder that stems from prolonged stress in the workplace. The aim of this study is to assess the prevalence of burnout and to investigate its impact on academic performance among healthcare students.

The questionnaire will take 3 minutes to complete, and it is completely voluntary to take part and participate in the study. The data will be used confidentially and for research purposes only.

By answering the first question, you voluntarily agree to participate in this study and give your consent to use your anonymous data for research purposes.

"You do not have to be in this study. You may skip questions or stop participating at any time".

For any additional inquiries regarding the study:

Principal investigator

Dr. Douglas S. Gardenhire

Georgia State University

Email: dgardenhire@gsu.edu

MBI - General Survey for Students

Wilmar B. Schaufeli, Michael P. Leiter, Christina Maslach & Susan E. Jackson

The purpose of this survey is to discover how university students view their studies, and their reactions to their academic work.

Instructions: On the following page are 16 statements of university-related feelings. Please read each statement carefully and decide if you ever feel this way about *your* academic work. If you have *never* had this feeling, write the number "0" (zero) in the space before the statement. If you have had this feeling, indicate *how often* you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way. An example is shown below.

Example:

| How often: | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|------------|-------|----------------------------|----------------------|---------------------|-------------|--------------------|-----------|
| | Never | A few times a year or less | Once a month or less | A few times a month | Once a week | A few times a week | Every day |

| How often 0-6 | Statement: |
|------------------|------------|
|------------------|------------|

1. _____ I feel depressed by my studies.

If you never feel depressed by your studies, you would write the number "0" (zero) under the heading "How often." If you rarely feel depressed by your studies, (a few times a year or less), you would write the number "1." If your feelings of being depressed by your studies are fairly frequent (a few times a week but not daily), you would write the number "5."

MBI - General Survey for Students

| How often: | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|------------|-------|-------------------------------------|----------------------------|---------------------------|----------------|--------------------------|-----------|
| | Never | A few times a year or less | Once a month or less | A few times a month | Once a week | A few times a week | Every day |

**How Often
0-6**

Statements:

1. _____ I feel emotionally drained by my studies.
2. _____ I feel used up at the end of the day at the university.
3. _____ I feel tired when I get up in the morning and have to face another day at the university.
4. _____ Attending classes all day is really a strain for me.
5. _____ I can effectively solve the problems that arise in my studies.
6. _____ I feel burned out from my studies.
7. _____ I feel I am making an effective contribution in class.
8. _____ I have become less interested in my studies since my enrollment.
9. _____ I have become less enthusiastic about my studies.
10. _____ In my opinion, I am a good student.
11. _____ I feel exhilarated when I accomplish something at the university.
12. _____ I have accomplished many worthwhile things in my studies.
13. _____ I just want to get my work done and not be bothered.
14. _____ I have become more cynical about whether my university work contributes anything.
15. _____ I doubt the significance of my studies.
16. _____ While working at the university, I feel confident that I am effective at getting things done.

(Administrative use only)

EX Total score: _____ CY Total score: _____ PE Total score: _____

EX Average score: _____ CY Average score: _____ PE Average score: _____

Demographic Data

Please answer the following background variables.

17. What is your biological gender?

- Male.
- Female.

18. What is your age now in years?

.....

19. What is your major?

- Nursing.
- Physical Therapy.
- Respiratory Therapy.
- Occupational Therapy.
- Other, please specify

20. What is your current level in the professional program?

- BS first year.
- BS Second year.
- MS first year.
- MS Second year.
- Other, please specify.....

21. What do you use to cope stress?

- Exercise.
- Smoking.
- Drinking alcohol.
- Other, please specify.....

22. Your cumulative GPA: Please choose the appropriate option for your GPA

- 3.50 – 4.00.
- 3.00 – 3.49.
- 2.50 – 2.99.
- 2.00 – 2.49.
- <2.00.

23. Your marital status:

- Single.
- Married.

24. Do you work?

- Yes.
- No.

If yes, how many hours do you work per week?

Thank you for participating in this survey.

Appendix B: IRB Approval

INSTITUTIONAL REVIEW BOARD
University Research Services and Administration

Mailing Address:
P.O. Box 3999
Atlanta, GA 30302-30303

In Person:
58 Edgewood Ave NE
3rd Floor
Atlanta, GA 30303

Office 404-413-3500
Email irb@gsu.edu
Web gsu.edu/irb



July 22, 2024

Principal Investigator: Douglas Gardenhire

Key Personnel: Alghamdi, Musaad J; Gardenhire, Douglas

Study Department: Respiratory Therapy

Study Title: The Prevalence of Burnout among Healthcare Students at Byrdine F. Lewis College of Nursing and Health Professions, Georgia State University.

Submission Type: Exempt Protocol Category 2

IRB Number: H25033

Reference Number: 380860

Determination Date: 07/22/2024

Status Check Due By: 07/21/2027

The above-referenced study has been determined by the Institutional Review Board (IRB) to be exempt from federal regulations as defined in 45 CFR 46 and has evaluated for the following:

1. Determination that it falls within one or more of the eight exempt categories allowed by the institution; and
2. Determination that the research meets the organization's ethical standards

If there is a change to your study, you should notify the IRB through an Amendment Application before the change is implemented. The IRB will determine whether your research continues to qualify for exemption or if a new submission of an expedited or full board application is required.

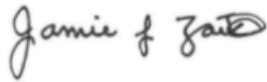
A Status Check must be submitted three years from the determination date indicated above. When the study is complete, a Study Closure Form must be submitted to the IRB.

This determination applies only to research activities engaged in by the personnel listed on this document.

It is the Principal Investigator's responsibility to ensure that the IRB's requirements as detailed in the Institutional Review Board Policies and Procedures For Faculty, Staff, and Student Researchers (available at gsu.edu/irb) are observed, and to ensure that relevant laws and regulations of any jurisdiction where the research takes place are observed in its conduct.

Any unanticipated problems resulting from this study must be reported immediately to the University Institutional Review Board. For more information, please visit our website at www.gsu.edu/irb.

Sincerely,

A handwritten signature in cursive script that reads "Jamie f Zaikov". The signature is written in black ink and is positioned below the word "Sincerely,".

Jamie Zaikov, IRB Member