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## Pre-Health Professional and Graduate Students in Patient Care Support Roles: A Measure of Burnout and Compassion Fatigue Rates in a COVID-19 World

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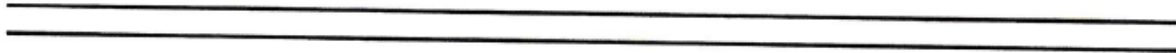
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Date

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Certified by [Signature] 4/26/23  
Date  
Director, Honors Program



**Pre-Health Professional and Graduate Students in Patient Care Support Roles: A  
Measure of Burnout and Compassion Fatigue Rates in a COVID-19 World**

A Thesis

Presented to the Department of History  
College of Pharmacy and Health Sciences

and

The Honors Program

of

Butler University

In Partial Fulfillment

of the Requirements for Graduation Honors

Jacey Cornett  
May 6, 2023

## **Abstract**

Burnout and compassion fatigue rates are on the rise for nearly all healthcare professions and specialties, leading to serious harm for both patient and provider. Perpetuated by the COVID-19 pandemic, the healthcare industry has been left in disarray as the world returns to “normal”. Currently, Butler University is educating and training undergraduate and graduate students in a variety of healthcare settings that are soon subjected to high rates of burnout and compassion fatigue. This study aimed to identify the prevalence of burnout and compassion fatigue rates in pre-health professional and health professional students in the context of completing preparatory clinical hours amid a pandemic. Specifically, this study analyzes students' intended career paths, completed patient care hours, and specialties worked in as a framework for the subjective experiences of burnout and compassion fatigue. Linear regression analysis identified potential risk factors including an increased risk of personal and work-related burnout for females, high compassion satisfaction in those intending to become a physician with the opposite seen in pharmacists, and low levels of burnout in those who have worked in non-pharmacy related patient care roles. The implications of these findings suggest that certain student profiles could benefit from preventative burnout and compassion fatigue programs through means of subjective assessments, educational trainings, and intentional support systems in an effort to equip students with the necessary tools to combat burnout and compassion fatigue before entering their desired professions.

## **Background**

### *Personal Significance*

For the past three years, I have worked as a certified nursing assistant (CNA). I received my training at a long-term care facility shortly after the beginning of the COVID-19 pandemic, assisting patients that required total and complete skilled nursing care. Often, I would report to my shift and discover that the only staff for that day was unsatisfactory. On a unit of thirty to forty complex care patients, having only one nurse and two CNAs present was very common. With the added layer of COVID-19 on an already understaffed unit, the nursing home was, at times, somber and an extremely distressing work environment. While I can confidently say that I strived to provide the most attentive and compassionate care for the residents that I could, it was disheartening to leave my shift each day knowing that not even my best could provide the bare minimum for those nearing the end of their lives.

The emotional toll I experienced upon my initial introduction to healthcare undoubtedly shaped me into a more resilient individual in my personal and professional life, but I often wondered at what cost? In the United States, it is a normalized idea that healthcare work is only for the strong and mighty. This completely ignores the systemic problems that perpetuate provider burnout and compassion fatigue, creating a culture in which healthcare workers should expect to sacrifice their overall well-being to care for their patients. With a large population of potential future healthcare professionals at Butler University, I wondered if the clinical experiences of my peers reflected my own in our pursuit of advanced professional healthcare careers.

## Literature Review

### *Current State of Healthcare and Burnout*

In an ideal world, the perfect healthcare professional approaches each one of their patients with empathy, understanding, compassion, patience, and undivided attention. Whether you have been on the receiving end of care or provided the care yourself, you have most likely either witnessed or personally felt that healthcare providers are susceptible to feelings of stress, fatigue, irritation, depression, or a combination of all of these. Consisting of a “people-work” model, healthcare providers are often vulnerable to developing burnout.<sup>1</sup> Recent awareness and conversation within the healthcare sector have led to the recognition that provider sentiments of burnout inhibit the human side of healthcare, leaving medical professionals unsatisfied with their occupations and patients at risk of unsatisfactory care.<sup>2,3</sup>

While it is still unclear whether healthcare provider burnout has increased in recent years or more awareness has been attributed to the issue, it is certain that healthcare providers are calling out for help. A recent Mayo Clinic Proceedings reported that the physician burnout rate has increased from 38.2% in 2020 to 62.8% in 2021. Findings also divulged that one in five physicians plans to leave their current practice within two years.<sup>4</sup> Current medical students and residents are estimated to have 45-60% burnout prevalence.<sup>5</sup> In response to these findings, the American Medical Association Recovery Plan for America’s Physicians identifies “reducing physician burnout” as one of their five main objectives for the upcoming years.<sup>6</sup>

Burnout is not isolated to those at the top of the healthcare hierarchy. Within the nursing profession, 75% of all nurses have experienced burnout, and 66% have

experienced compassion fatigue since the COVID-19 pandemic.<sup>7</sup> Listed as the third-best job overall in the nation, 30.6% of physician assistants reported feeling burnout, with even higher rates seen in specialties like critical care, emergency medicine, oncology, family medicine, and primary care.<sup>8</sup> Comparable to physicians, nurses, and physician assistants, 51% of pharmacists report burnout, with additional surveys reporting rates as high as 87.6% in both ambulatory and non-ambulatory pharmacists in the post-pandemic world.<sup>9,10</sup>

Healthcare professionals often consider their high workload, hierarchical culture, the imbalance between personal and professional life, work pressure, poor quality of life, patient needs, inadequate leadership, and consistent understaffing as perpetuating reported burnout.<sup>3,5,9,11</sup> Along with constant burnout comes an increased staff turnover rate. Referred to as the “Great Resignation,” patient care technicians, certified nursing assistants, and registered nurses all experienced respective turnover rates of 38.1%, 35.5%, and 27.1% in 2022.<sup>12</sup> With job turnover rates being one of the direct results of healthcare professional-experienced burnout, this accounts for the annual \$4.6 billion healthcare-related cost that is attributed to physician burnout.<sup>13</sup>

Perhaps discouraging in nature to actualize the increasing healthcare professional burnout rates, it is promising to garner societal attention towards efforts to increase awareness and education of the issue to work towards practical solutions. A systematic approach over an individual application must initiate aggressive actions against burnout. A framework that analyzes the societal, cultural, structural, and organizational factors that cause workers to leave the healthcare industry must be taken seriously by healthcare administrative teams and utilized to generate solutions supporting their employee's well-

being.<sup>5</sup> Reported practical practices that administrative teams can implement to reduce burnout include wellness/fitness stipends, access to fitness centers, flexible scheduling, counseling/therapy (one-on-one or group), mindfulness/meditative education, peer support programs, and access to mental health hotlines for their employees.<sup>7</sup> This approach recognizes that the problem is not individual employee work ethic but the normalized “hustle” culture of healthcare work today. Recognized as a current priority of the U.S. Surgeon General and an “urgent public health issue,” governmental agencies have created action plans to counteract burnout through workplace transformations that emphasize each healthcare worker’s individual value.<sup>5</sup> Overall, it is evident that burnout is a relevant issue in the United States healthcare system.

### *Burnout*

Coined in 1959, the term burnout was first proposed by J.H. Freudenberger to explain the phenomenon of professionally induced exhaustion in many workplace settings.<sup>14</sup> Through a series of observations, Freudenberger noticed that his colleagues were experiencing excessive physical symptoms such as fatigue, headaches, and sleeplessness and behavioral changes such as increased frustration, suspicion, anger, depression, and arrogance. Contextually, Freudenberger also noted that “the dedicated and the committed” were more likely to display these sentiments.<sup>15</sup> While not scientifically analyzed or proven, Freudenberger provided a springboard for the awareness, vulnerabilities, and further research of occupational-associated stress.



Even though the experience of burnout is not isolated to specific jobs, burnout is most identified and studied in “people-work” (i.e., occupations with a common goal of providing personal services to individuals). As a pioneer in burnout research, Christina Maslach considered burnout a syndrome consistent with three circumstances: emotional exhaustion, negative and cynical attitudes directed toward one’s clients [patients], and reduced personal accomplishment. The most essential component of burnout, known as emotional exhaustion, is derived from “work overload and personal conflict” that is constant and leaves no room or time for replenishment.<sup>1</sup> Also referred to as depersonalization, the negative and cynical attitudes consistent with burnout are viewed as an extension of emotional exhaustion, propelled by detachment as a means of self-protection. The final component of burnout, reduced personal accomplishment, is best described as an apathetic attitude towards productivity and one’s involvement in work. Relying heavily on the “individual stress experience,” this multidimensional theory emerged as a bottom-up approach, recognizing that those under duress have launched and sustained the continued exploration and investigation of burnout.<sup>1,16</sup>

Highly disputed by clinical psychologists and psychiatrists, burnout is not currently considered a diagnosable term or mental disorder.<sup>17,18,19</sup> Commonly referred to as a “psychological syndrome” in today’s literature, burnout symptoms often overlap with other diagnosable disorders including, depression, anxiety, and suicidal ideation.<sup>19</sup> Fostered by an increase in overall societal recognition and discussion, the disputed and gray areas of burnout have been subjected to a “medicalization” process by some professionals to define the phenomenon and treat it clearly.<sup>18</sup> While this study does not aim to define nor persuade one to believe in an appropriate diagnostic

approach for burnout, it is worth noting the dispute the term burnout can induce in the scientific, medical, psychological, and social science communities.

Despite the contested underpinnings of burnout, one thing is certain - the negative associations and harms burnout can produce within the self, others, and the external environment. Burnout has been classified as a risk factor for a myriad of physical health challenges: increased risk of heart attacks, coronary heart disease, insomnia, headaches, depression, anxiety, fatigue, exhaustion, poor immune system function, and substance abuse.<sup>14,18,20</sup> Major symptoms of active burnout include work-related exhaustion (physical and emotional), alienation from work, social, and personal activities, and reduced occupational performance.<sup>2</sup> Burnout in the healthcare profession has also seemingly normalized negative patient-provider relationships characterized by inattentiveness, stress, hurriedness, and tepid responses.<sup>21</sup> High burnout levels are also associated with decreased patient safety, increased adverse events, the inability to work as a cohesive healthcare team, and an increased risk of patients acquiring infections.<sup>3</sup>

Mistakenly perceived as a simple emotion that intersperses itself with the ebbs and flows of one's environment and circumstances, burnout is a much more complex term than it appears. Consisting of emotional exhaustion, negative attitudes towards others, and reduced personal accomplishment, the criteria for burnout diagnosis are still blurry. However, it is certain that the associated negative side effects of burnout are troublesome for the healthcare industry and, thus, not a sustainable way of living for any individual, regardless of occupation.

## *Compassion Fatigue*

As a newer and more vaguely defined term, compassion fatigue is typically described concerning a single event, such as a trauma and/or “temporal” event.<sup>17,22</sup> The term was first coined in 1992 to describe the psychosocial consequences of emergency room nurses who were being examined for burnout prevalence.<sup>23</sup> Older studies have also referred to compassion fatigue as “secondary traumatic stress” or “vicarious traumatization.” An essential element in medicine, compassion can be defined as the exemplification of an empathetic attitude towards suffering individuals who desire to alleviate or remove the sources of pain. This quality is often subject to depletion in those who complete “people-work,” as those that experience “prolonged, continuous, and intense contact with patients, self-utilization, and exposure to multidimensional stress lead[s] to a compassion discomfort that...expands beyond restoration.”<sup>22</sup> Some theorists argue that a therapeutic relationship must be established between patient and provider to experience compassion fatigue. More empathetic providers, those who are defined as more “self-sacrificing,” and those who deal with trauma and death may be more prone to meeting the criteria for compassion fatigue.<sup>23</sup>

Researchers have yet to adopt a universal definition for compassion fatigue but have indeed characterized components of this condition in relation to singular or repeated exposures to traumatic events, making healthcare providers extremely vulnerable. Interestingly, even if providers identify themselves as “satisfied” with their work, unconscious emotional demands with repeated human suffering can still lead to compassion fatigue.<sup>24</sup>

Individuals experiencing compassion fatigue are at an increased risk for depression, anxiety, stress, degradation, irrational fear, insomnia, frequent and recurrent episodes of reliving traumas, and avoidance.<sup>22,25</sup> Providers experiencing compassion fatigue are also more likely to be less productive, call in sick to work, and actively search for other job positions.<sup>24</sup>

In relation to the patient, compassion fatigue has been linked to patient desensitization, compromised communication skills, and increased risk of clinical errors on the provider's behalf.<sup>25</sup> Protective benefits for compassion fatigue include older age, higher education levels, and more work experience. Regarding healthcare administration efforts, workplaces that utilize reasonable working hours, manageable caseloads, and specialized trauma educational programming are more likely to see lower rates of compassion fatigue in employees.<sup>24</sup> Despite its newfound awareness and exploration, compassion fatigue prevalence represents a call to action in the healthcare system to save both patients *and* healthcare providers.

#### *Relationship Between Burnout and Compassion Fatigue*

While it may appear that burnout and compassion fatigue have much overlap, there are a few distinct differences between the two experiences. Burnout is typically acquired via a “cumulative process” due to prolonged stressful exposures in one’s environment. Compassion fatigue is a more quickly developed condition that can be a result of a singular event/trauma that derives from an emotional relationship, often in terms of a specific patient.<sup>26, 27</sup> Some studies have also reported that healthcare providers experiencing compassion fatigue pose a more considerable danger to their patients than those who are burnt out.<sup>28</sup>

Unsurprisingly, a positive correlation exists between burnout and compassion fatigue.<sup>26</sup> Some researchers argue that an individual must be burnt out to experience compassion fatigue; others believe that an individual must be experiencing compassion fatigue to be burnt out. Some posit that the two conditions are separate entities.<sup>28</sup> The literature suggests that the “treatment plan” for burnout and compassion fatigue can contain significant differences. According to Figley, the prescribed treatment plan for varying combinations of burnout and compassion fatigue are as follows: low burnout/low compassion fatigue indicates sticking with your job; low burnout/high compassion fatigue indicates staying and working on the management of the emotional toll; high burnout/low compassion fatigue indicates changing your job employer; and high burnout/high compassion fatigue indicates changing your occupation field.<sup>25</sup> Given the high percentage of healthcare workers that have already left or are planning to leave their occupations, it is worth noting the definitive differences between the two conditions to ascertain how to navigate one’s situation. Recovery also requires an extended period for an individual to reach their pre-burnout mental/emotional state, whereas evidence suggests compassion fatigue can subside just as quickly as it arises.<sup>27</sup>

#### *Pre-Health Professional and Graduate Student Population Importance*

Although these studies have been conducted on practicing healthcare professionals, pre-health professional undergraduate and graduate student experience of burnout and compassion fatigue still need to be discovered. Often serving in introductory patient care support staff roles, students aim to gain familiarity, knowledge, and competency in their designated healthcare specialties in preparation for their future

advanced healthcare practice. Whether a requirement for graduate school applications, a part of their respective program's clinical rotations/experience, or a necessary source of income, students are often subjected to "paying their dues" and grunt work in lower, hierarchical healthcare positions while also balancing the demands of academics and extracurriculars.

Limited research has been conducted in the specific demographic population of undergraduate and graduate students who plan to work in advanced healthcare roles while simultaneously gaining "entry-level" clinical experience.<sup>28</sup> It is notably known that medical students in the classroom phase of their learning, compared to residency/fellowship, are more likely to experience depression, suicidal ideation, and a low sense of personal accomplishment than at any other stage of their learning. Once medical students advance to residency/fellowship, it is known that burnout, depersonalization, and extreme fatigue levels peak.<sup>29</sup> The results from studies such as this one further warrant exploring the connection between pre-professional experiences and post-graduate healthcare practice, as it may be that the undergraduate environment is a pre-disposing risk factor for future burnout and compassion fatigue.

Evolving studies have proposed burnout risk factors in the undergraduate healthcare population, such as high academic demand, modeling focused on success/self-sufficiency, high care burdens, lack of clinical resources, lack of time to eat/rest/tend to personal needs, competitiveness, and social isolation/vulnerability. Protective factors against these experiences include practices that can be implemented in the educational field, like training in wellness/prevention, participating in early screening of burnout in students, developing more robust support networks, and being exposed to education on

increasing individual resiliency, communication, self-care, and healthy lifestyles, and ensuring adequate teacher-to-student ratios.<sup>30</sup>

### *Research Purpose*

The main objective of this study was to identify the prevalence of burnout and compassion fatigue rates in Butler University College of Pharmacy and Health Sciences undergraduate and graduate pre-health professional and professional phase students. This study also aimed to examine the influence of students' chosen career paths, clinical patient care hours, and subjective experiences concerning their burnout and compassion fatigue scores. Identifying the Butler University student's current burnout and compassion fatigue provides an imperative insight to determine whether students are preparing to enter the healthcare workforce in an already tenuous form. Findings can potentially help determine preventive measures that can be implemented in educational college classroom settings to best prepare students for the mental toll working in healthcare can exhibit.

This research works to explore four central questions:

RQ1: What are the rates of burnout in pre-health professional undergraduate students?

RQ2: What is the rate of compassion fatigue in pre-health professional undergraduate students?

RQ3: What is the relationship between burnout and compassion fatigue rates in pre-health professional undergraduate students who have worked in healthcare during COVID-19?

RQ4: How do students understand burnout and how it impacts their personal life?

Identifying the prevalence and connections between burnout and compassion fatigue in the student population provides a baseline and direction for understanding how universities can prepare, educate, and prevent their graduates from these conditions' unfortunate and negative associations.

## **Methodology**

### *Participants and Recruitment*

The sample population included Butler University College of Pharmacy and Health Science (COPHS) students in undergraduate and graduate programs (i.e., Master of Physician Assistant Studies and Doctor of Pharmacy). Inclusion criteria included students enrolled in any year of an undergraduate or graduate program in the College of Pharmacy and Health Sciences. The survey was emailed to all enrolled students in the college from January 2023 to February 2023. COPHS professors and instructors announced additional survey promotion through online and in-person announcements. All participants provided informed consent by signing a digital consent form before taking the survey. If desired, participants could fill out an additional survey to potentially receive a Butler University bookstore gift card as a small thank you in appreciation for their time. No personal identifiers were collected in the primary survey instrument, and responses were anonymous. This study was approved by the Butler University Institutional Review Board.

### *Data Collection Tools*



This electronic survey was conducted via Qualtrics and delivered by a URL link and QR code. Participants were first prompted with demographic and personalized healthcare experience questions (gender identification, grade level, desired career path, specialty worked in, and accumulated hours). Questions were both open-ended and multiple-choice.

To measure burnout, the Copenhagen Burnout Inventory Tool (CBI) was employed. The tool measures three distinct kinds of burnout: personal burnout, work-related burnout, and patient-related burnout. Personal burnout is defined as “the degree of physical and psychological fatigue and exhaustion,” work-related burnout is defined as “the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work,” and patient-related burnout is defined as “the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work with clients [patients]”. An estimated coefficient alpha of 0.85-0.87 is exemplified with the CBI tool. Strengths of the survey tool include high internal reliability and low non-response rates.<sup>31</sup> Participants' responses were based on 19 questions utilizing a 5-point Likert scale. Possible answers included 1 (never/almost never to a very low degree), 2 (seldom/a low degree), 3 (sometimes), 4 (often/a high degree), and 5 (always/a very high degree). An average for each burnout category was generated for each individual, making each participant have three associated burnout scores (personal, work-related, and patient-related). Scores equal to 3 or less were considered low risk, 3-3.99 were considered moderate risk, and 4-4.99 were regarded as high risk. Participants that failed to respond to 3 or more questions in each burnout subcategory were not considered in data analysis and interpretation.

To measure compassion fatigue, the Professional Quality of Life Scale (ProQOL) was employed. The tool measured three components: compassion satisfaction, burnout, and secondary traumatic stress. An estimated coefficient alpha of 0.88 is exemplified by the ProQOL survey.<sup>32</sup> Utilized for over 15 years and used in more than 200 peer-reviewed papers, the ProQOL survey has been heavily used in the nursing, psychiatric, and other “helping” professions to evaluate compassion fatigue.<sup>28</sup> Participant responses were based on 30 questions utilizing a 5-point Likert scale. Possible responses included 1 (never), 2 (rarely), 3 (sometimes), 4 (often), and 5 (very often).

After the survey, five open-ended qualitative questions were asked to generate a deeper understanding of student perception and personal experiences of burnout and compassion fatigue about clinical hours. Included questions were as follows:

1. How have your clinical hours impacted your college experience and private life?
2. How has COVID-19 impacted your patient care experience?
3. What do you know about burnout?
4. What is your view on the stress of patient care hours?
5. What burnout have you witnessed in faculty or clinical colleagues?

Appendix A includes the complete survey questionnaire.

### *Statistical Analysis*

Linear regressions were used to determine if significant differences existed between demographic and burnout/compassion fatigue factors. The dependent variables measured included the six related measures of burnout: CBI personal burnout, CBI work-related burnout, CBI patient-related burnout, ProQOL compassion satisfaction, ProQOL burnout, and ProQOL secondary traumatic stress. Predictor variables included gender,

educational level, intended career path, past clinical role, and specialty worked in. Hours worked in past clinical roles were not included as predictor variables.

To determine the relationship between burnout and compassion fatigue, a Pearson correlation analysis of the subscale dimensions was performed. All tests were run at the significance level of  $\alpha = 0.05$ . Statistical analysis was completed in IBM SPSS statistics version 28.0.1.1. The open-ended, qualitative questions were not subjected to external validation but were thematically analyzed to understand student attitudes.

## **Results**

### *Undergraduate and Graduate Student Demographics*

Of the 182 submitted survey results, 100 respondents were included in the analysis (n=100). Survey respondents that failed to answer three or more questions in each subsection of the CBI tool (personal, work-related, and patient-related), six or more questions of the ProQOL tool, and/or respondents with no current or past clinical experience were excluded from further analysis.

Respondents were 86% female and 14% male. The distribution of the educational phase of respondents indicated that 30% were undergraduate or pre-pharmacy students, 55% were professional-phase pharmacy students, 13% were physician assistant graduate students, and 2% were identified as other. When asked about their future career path, 10% indicated physician, 30% stated physician assistant, 56% indicated pharmacist and 4% indicated other. Looking at current and/or past clinical roles in patient care support, 24% of students were a CNA/patient care technician/medical assistant, 58% a pharmacy technician, 4% a medical scribe, 1% a home health aide, 6% an emergency medical technician, and 7% other (including addiction medicine, neonatal intensive care unit,

ENT, epidemiology, Chinese medicine, and pediatrics). Specialties worked in included 25% retail pharmacy, 14% inpatient pharmacy, 12% long-term care, 10% community pharmacy, 5% emergency medicine, 4% med surg, 3% cardiology, 3% family medicine, 3% orthopedics, 3% phlebotomy, 3% physical therapy, 2% float, 2% OB/GYN, 4% not specified, and 7% other. Clinical experience ranged from 100-5500 hours of experience. See Table 1.

### *Burnout and Compassion Fatigue Rates*

Overall, COPHS CBI tool burnout rates were as follows. Looking at personal burnout, 29% of students were identified as low risk, 52% were at moderate risk, and 19% were at high risk. Work-related burnout revealed 39% were at low risk, 48% were at moderate risk, and 13% were at high risk. Patient-related burnout showed that 76% were at low risk, 20% were at moderate risk, and 4% were at high risk.

The ProQOL tool's measure of compassion satisfaction showed 1% identifying as low, 94% identifying as moderate, and 5% as high. Total burnout was reported as 22% low and 78% moderate. Secondary traumatic stress (compassion fatigue) highlighted 57% at low risk and 43% at moderate risk. See Table 2.

### *CBI & ProQOL Likert Responses*

Likert responses were interpreted as the following: "Never" represented a response of "1," "Rarely" represented a response of "2," "Sometimes" represented a response of "3," "Often" represented a response of "4," and "Very Often" represented a response of "5". In the CBI tool, average scores of 3 or less represent "Low," between 3 and 3.99 represent "Moderate," and 4 to 4.99 represent "High."<sup>31</sup> In the ProQOL tool,

summative scores of 22 or less represent “Low,” between 23 and 41 represent “Moderate,” and 42 or more represent “High.”<sup>32</sup>

The first subsection of the CBI tool measured personal burnout. Respondents most closely identified feeling “tired” ( $\bar{x} = 3.86$ ,  $SD = 0.711$ ), “worn out” ( $\bar{x} = 3.70$ ,  $SD = 0.870$ ), and “emotionally exhausted” ( $\bar{x} = 3.60$ ,  $SD = 0.964$ ) as contributors to personal burnout. Additional contributors to burnout included “physical exhaustion” ( $\bar{x} = 3.27$ ,  $SD = 0.886$ ), feeling “weak and susceptible to illness” ( $\bar{x} = 2.66$ ,  $SD = 1.139$ ), and sentiments of not being able to “take it anymore” ( $\bar{x} = 2.57$ ,  $SD = 1.103$ ). See Table 3.

The CBI tool’s measure of work-related burnout produced higher overall means when respondents were asked if they felt “worn out at the end of a working day” ( $\bar{x} = 4.04$ ,  $SD = 0.828$ ), “exhausted at the thought of working another shift” ( $\bar{x} = 3.33$ ,  $SD = 0.965$ ), and if they had enough “energy for family and friends during leisure time” ( $\bar{x} = 3.13$ ,  $SD = 0.872$ ). Respondents also reported lower overall averages when asked if their work was “emotionally exhausting” ( $\bar{x} = 2.99$ ,  $SD = 1.193$ ), produced feelings of burnout ( $\bar{x} = 2.96$ ,  $SD = 1.154$ ), frustrating ( $\bar{x} = 2.80$ ,  $SD = 1.163$ ), and tiring and each and every hour ( $\bar{x} = 2.67$ ,  $SD = 1.035$ ). See Table 4.

The final category measured by the CBI tool, patient-related burnout, produced the highest averages when respondents were asked if they felt that they gave more than they received back from patients ( $\bar{x} = 3.22$ ,  $SD = 1.162$ ), if working with patients drained their energy ( $\bar{x} = 2.48$ ,  $SD = 0.915$ ), and if working with patients made them frustrated ( $\bar{x} = 2.40$ ,  $SD = 0.853$ ). Lower averages were reflected by responses regarding whether or not respondents find it “hard to work with patients” ( $\bar{x} = 2.24$ ,  $SD = 0.878$ ), “wonder how

long [they] will be able to continue working with patients” ( $\bar{x} = 2.13$ ,  $SD = 1.178$ ), and tiring to working with patients ( $\bar{x} = 1.89$ ,  $SD = 1.043$ ). See Table 5.

The ProQOL’s measure of compassion satisfaction revealed the highest means in respondents receiving satisfaction from helping people ( $\bar{x} = 4.49$ ,  $SD = 0.689$ ), liking their work as a helper ( $\bar{x} = 4.05$ ,  $SD = 0.845$ ), and having happy thoughts and feelings about those they help and helping them in the future ( $\bar{x} = 3.80$ ,  $SD = 0.899$ ). Additional means revealed respondents' attitudes on how pleased they are able to “keep up with helping techniques and protocols” ( $\bar{x} = 3.64$ ,  $SD = 0.981$ ), how their work makes them feel “satisfied” ( $\bar{x} = 3.61$ ,  $SD = 0.931$ ), thoughts they are a “‘success’ as a helper” ( $\bar{x} = 3.48$ ,  $SD = 0.919$ ), “invigorated” they feel after working with those they help ( $\bar{x} = 3.42$ ,  $SD = 0.943$ ), and how “happy” they are they chose to complete helping work ( $\bar{x} = 2.14$ ,  $SD = 1.020$ ). See Table 6.

The burnout measures of the ProQOL scale highlighted that respondents identify themselves as caring people ( $\bar{x} = 4.33$ ,  $SD = 0.685$ ) but simultaneously “overwhelmed” with their workload ( $\bar{x} = 3.33$ ,  $SD = 1.1016$ ), “‘bogged down’ by the system” ( $\bar{x} = 3.14$ ,  $SD = 1.137$ ), and “worn out” due to their work as a helper ( $\bar{x} = 3.12$ ,  $SD = 0.924$ ). Lesser averages were reflected by respondent’s beliefs surrounding if they were the person “they always wanted to be” ( $\bar{x} = 2.48$ ,  $SD = 0.797$ ), if they have beliefs that sustain them ( $\bar{x} = 2.41$ ,  $SD = 1.156$ ), they are “happy” ( $\bar{x} = 2.19$ ,  $SD = 0.662$ ), “feel connected to others” ( $\bar{x} = 2.11$ ,  $SD = 0.942$ ), feel “trapped by [their] job as a helper” ( $\bar{x} = 1.80$ ,  $SD = 0.979$ ), and not as productive at work due to “losing sleep over traumatic experiences” ( $\bar{x} = 1.62$ ,  $SD = 0.753$ ). See Table 7.

The ProQOL's final category of secondary traumatic stress measures showed that respondents are "preoccupied with more than one person [they] help" ( $\bar{x} = 3.65$ ,  $SD = 0.958$ ), are easily startled ( $\bar{x} = 3.29$ ,  $SD = 1.328$ ), and "find it difficult to separate [their] personal life from [their] life as a helper" ( $\bar{x} = 2.90$ ,  $SD = 1.193$ ). To a lesser extent, respondents "feel on edge" ( $\bar{x} = 2.28$ ,  $SD = 1.155$ ), think they might have "affected by the traumatic stress of those they help" ( $\bar{x} = 1.90$ ,  $SD = 0.1050$ ), "can't recall important parts of [their] work with trauma victims" ( $\bar{x} = 1.78$ ,  $SD = 1.133$ ), avoid certain activities/situation due to reminders of past frightening events ( $\bar{x} = 1.73$ ,  $SD = 0.903$ ), feel as though they experience the trauma of those they help ( $\bar{x} = 1.69$ ,  $SD = 0.950$ ), have "intrusive, frightening thoughts" ( $\bar{x} = 1.65$ ,  $SD = 0.896$ ), and feel depressed due to traumatic experiences ( $\bar{x} = 1.65$ ,  $SD = 0.833$ ). See Table 8.

Overall average respondent scores by the CBI tool revealed work-related burnout as the most prevalent type of burnout ( $\bar{x} = 22.0100$ ,  $SD = 4.78950$ ), followed by personal burnout ( $\bar{x} = 19.6600$ ,  $SD = 4.47489$ ), and patient-related burnout ( $\bar{x} = 14.3000$ ,  $SD = 4.83777$ ). The ProQOL survey identified moderate levels of compassion satisfaction ( $\bar{x} = 32.4900$ ,  $SD = 4.53827$ ) and burnout ( $\bar{x} = 26.3400$ ,  $SD = 4.93640$ ) and low levels of secondary traumatic stress ( $\bar{x} = 22.0000$ ,  $SD = 6.64238$ ). See Table 9.

### *Linear Regression Analysis*

Linear regression analysis was completed to determine relationships between respondent demographic factors and burnout/compassion fatigue rates. Gender was significantly related to personal burnout, work-related burnout, and secondary traumatic stress ( $t = -3.032$  ( $p = 0.003$ ),  $t = -2.347$  ( $p = 0.021$ ),  $t = -2.336$  ( $p = 0.016$ )). Respondent career path was associated with patient-related burnout as well as compassion satisfaction

( $t = 2.753$  ( $p = 0.007$ ),  $t = -2.616$  ( $p = 0.010$ )). Past clinical roles were also significantly related to overall burnout rates ( $t = 1.988$ ,  $p = 0.050$ ). See Table 10.

Further regression analysis of significant contrasting demographic variables revealed that higher levels of personal burnout are associated with being female ( $t = 3.032$ ,  $p = 0.003$ ) rather than being male ( $t = -3.032$ ,  $p = 0.003$ ). The same conclusion is also reflected in work-related burnout, with females having significantly higher ratings of this kind of burnout in comparison to males ( $t = 2.347$ , ( $p = 0.021$ ),  $t = -2.347$  ( $p = 0.021$ ). Those who intend to become a physician had higher compassion satisfaction scores ( $t = 2.984$ ,  $p = 0.004$ ), while those who intend to become a pharmacist had much lower compassion satisfaction levels ( $t = -2.921$ ,  $p = 0.004$ ). Lower levels of traditional burnout were associated with respondents who have worked in nonpharmacy-related patient care support roles such as a certified nursing assistant, patient care technician, medical assistant, medical scribe, or emergency medical technician ( $t = -2.113$ ,  $p = 0.037$ ). See Table 11.

Pearson correlation coefficient analysis revealed a positive correlation between personal burnout and work-related burnout, patient-related burnout, ProQOL burnout, and secondary traumatic stress ( $r = 0.478, 0.199, 0.585, 0.342$ ). Work-related burnout was positively associated with patient-related burnout, ProQOL burnout, and secondary traumatic stress ( $r = 0.523, 0.522, 0.319$ ). Patient-related burnout was also significantly related to ProQOL burnout and secondary traumatic stress ( $r = 0.538, 0.233$ ). ProQOL burnout and secondary traumatic stress also showed positive correlations ( $r = 0.571$ ). Compassion satisfaction was associated with an inverse relationship with personal



burnout, work-related burnout, patient-related burnout, and ProQOL burnout ( $r = -0.296, -0.429, -0.550, -0.490$ ). See Table 12.

### *Qualitative Findings*

To supplement quantitative analysis, respondents were asked open-ended questions to gain insight into the perceptions and attitudes of their lived experiences of burnout and compassion fatigue. Thematic analysis of students' perception of burnout revealed that it is an endless cycle, leading to sentiments of extreme emotions (stress, loss of passion, depression, fatigue). Probable causes of burnout were identified as unfair healthcare systems and a lack of self-care (Q3). Respondents were also asked to recall instances in which they witnessed burnout in faculty or clinical colleagues. Students were cognizant of decreased enthusiasm and passion, the normalization of negative talk, complaints, poor morale, an increase in turnover rates, understaffed shifts, and leaving the healthcare field (Q5).

When asked about their views on patient care hours, respondents generally vocalized the necessity for graduate program entry and to gain competent clinical and healthcare communication skills. While the stress of patient care experience is viewed as "part of the job" as a healthcare student, students report clinical hours are difficult to keep up with and an additional layer of stress (Q4). Contributing to overall poorer mental health, less time with family and friends, and difficulty balancing academics and clinical work, these were some of the main themes identified by respondents regarding the impact their clinical experiences have had on their educational and private lives (Q1). When questioned about the effects COVID-19 has had on their patient care experience, respondents generally agreed that patient distrust and the inability to make genuine

connections with patients negatively impacted their experiences thus far (Q2). Positively speaking, respondents acknowledged that patient care experience had solidified their choice to work in the healthcare field, expanded their understanding of patient backgrounds, and allowed them to apply classroom material in a real-world setting (Q1).

### **Discussion**

The main objective of this study was to identify the rates of burnout and compassion fatigue among COPHS Butler undergraduate and graduate students who have completed clinical work in preparation for their future healthcare roles. Data analysis suggests that gender influences one's risk for personal burnout, work-related burnout, and secondary traumatic stress. Students' intended career path was found to influence patient-related burnout and compassion satisfaction, while past clinical roles were associated with overall burnout levels. All types of burnout (patient-related burnout, work-related burnout, patient-related burnout, and overall burnout) and compassion fatigue (secondary traumatic stress), had positive correlations with one another. Compassion satisfaction had an inverse relationship with all types of burnout except for secondary traumatic stress.

Further analysis of the data suggests that specific demographic factors may contribute to higher burnout and compassion fatigue rates. The data suggests that females are at an increased risk for personal burnout, work-related burnout, and secondary traumatic stress, while their male counterparts see the opposite effect. Hoff and Lee's 2021 study came to a similar conclusion that female physicians experience higher rates of burnout and emotional exhaustion than males, even when considering other factors like specialties, workload, and age.<sup>33</sup> These results should be considered when investigating how female healthcare burnout is related to work-life integration, gender bias, lack of

autonomy, and sexual harassment.<sup>34</sup> This current study has the potential to provide insight as to how university staff can best support female students in combating emotional burnout and fatigue while also ensuring that the university's culture is not a significant source of increased stress for this population.

Additionally, the data analysis supported the idea that those who intended to become a physician were more likely to have higher compassion satisfaction levels. Aligned with the belief that university students perceive their future roles in healthcare with an optimistic, excited, and at times "naive" attitude, these results might suggest that Butler students intending to become a physician have highly empathetic attitudes and are eager to pursue their future careers. Relevant student responses that intend to work in these occupations indicated that their clinical experience made them "more sure of the path" they want to continue, "solidified [they] are in the right field" and has "made [their] education so much more meaningful and relevant."

When looking at the framework of high levels of compassion satisfaction as inversely related to burnout, these results do not necessarily align with the existing evidence that states the current physician burnout rates is 62.8%.<sup>4</sup> This data creates a clearer picture that burnout is manifested in post-graduate, clinical work rather than the academic setting. These results may exemplify that Butler students continue to remain motivated in their future healthcare work and that, perhaps, the educational setting of this university cultivates a caring and empathetic student population. This should be taken into consideration when healthcare systems are looking for preventative measures to reduce burnout and restore compassion satisfaction levels in employees. As Bitran et al. identify, the university practices of consistent educational programming surrounding

personal emotional care, tight-knit support systems, and burnout screenings are important preventative factors, and these operations could be extended well beyond the educational setting to sustain high compassion satisfaction levels.<sup>30</sup>

In terms of past clinical roles, non-pharmacy jobs (certified nursing assistant, patient care tech, medical assistant, etc.) tended to have lower overall burnout rates. The results might appear as suggesting that these roles do not produce burnout and are satisfactory occupations. However, based on the findings of the 2022 NSI National Health Care Retention & RN Staffing Report, entry-level patient care support roles (such as certified nursing assistants and patient care technicians) report the highest turnover rates of any healthcare profession.<sup>12</sup> A plausible explanation for this discrepancy in the student population is that these non-pharmacy roles are likely temporary, seasonal, or per diem jobs that students work outside of school hours. While more likely to be “unnecessary” for a student’s survival in comparison to a full-time patient care worker (i.e., supporting a family, paying bills, benefits, etc.), students may be more focused on gaining clinical experience and realize they will only be in these short-term roles for a few years, leading to lesser degrees of experienced burnout.

Examination of the relationship between the different types of burnout revealed a positive correlation between all subtypes, except for the inverse correlations seen between compassion satisfaction and burnout subtypes and no correlation between compassion satisfaction and secondary traumatic stress. These findings can imply that once one type of burnout is identified, this can increase the likelihood of other subtypes occurring. Perhaps the most intriguing discovery is how high compassion satisfaction scores resulted in lower burnout subtype scores but had no relationship to secondary

traumatic stress, the main measurement for compassion fatigue. While suggesting that compassion satisfaction serves as a protective factor against burnout, the same generalization cannot be made to compassion fatigue. This proposes another potential variable that separates burnout and compassion fatigue from one another, a viewpoint that is also supported by Chacula's proposition of not treating the terms synonymously.<sup>28</sup>

### *Limitations*

The generalizability of this study was limited by the small sample size (n=100) and incomplete response size (n=82). Generalizability may also be confounded by the uneven distribution of gender and intended career path as most participants were female, pharmacy students. The methodological choice of self-reported hours completed also left clinical experience hours excluded from data analysis. Additionally, the open-ended nature of self-reported specialty and past clinical role worked required the creation of generalized dummy variables, thus limiting the specificity of significant demographic predictor factors. Nevertheless, data analysis was still able to generate the rates of burnout and compassion fatigue and their relation to student demographics.

### *Recommendations*

Given that the future healthcare professional student population (particularly undergraduate students) is an under researched sample, larger-scale and extensive studies of burnout and compassion fatigue rates are necessary to identify the earliest signs of these issues. University-led research of their own student population provides a better snapshot of the cultivated environment on their respective campuses, providing a springboard for establishing strategies to aid students before entry into the workforce.

Further research is needed to establish how predictor variables of burnout and compassion fatigue can be met with protective and preventative factors to lessen the likelihood of future emotional burdens in healthcare occupations. Research in the areas of preventative training tools, supportive communication strategies, and the prioritization of mental health in organized settings serve as promising avenues in combating burnout and compassion fatigue in both educational and non-educational settings.<sup>3,7, 35</sup>

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## References

1. Maslach C, Jackson SE. The measurement of experienced burnout. *J Occup Behav.* 1981;2:99-113. <https://onlinelibrary.wiley.com/doi/epdf/10.1002/job.4030020205>
2. Institute for Quality and Efficiency in Health Care. Depression: what is burnout?. National Library of Medicine. June 18, 2020. Accessed January 15, 2023. <https://www.ncbi.nlm.nih.gov/books/NBK279286/>
3. Garcia CL, Abreu LC, Ramos JLS, et al. Influence of burnout on patient safety: systematic review and meta-analysis. *Medicina (Kaunas).* 2019;55(9):553. doi:10.3390/medicina55090553
4. Shanafelt TD, West CP, Dyrbye LN, et al. Changes in burnout and satisfaction with work-life integration in physicians during the first 2 years of the COVID-19 pandemic. *Mayo Clinic Proceedings.* 2022;97(12):2248-2258. doi:10.1016/j.mayocp.2022.09.002
5. Health worker burnout. U.S. Department of Health and Human Services. 2022. Accessed January 15, 2023. <https://www.hhs.gov/sites/default/files/health-worker-wellbeing-advisory.pdf>
6. AMA recovery plan for America's physicians. American Medical Association. 2023. Accessed January 9, 2023. <https://www.ama-assn.org/amaone/ama-recovery-plan-america-s-physicians>
7. Trusted health. 2022 frontline nurse mental health and well-being survey. 2022. Accessed January 15, 2023. [https://assets-global.website-files.com/62991a992ad4fe937e88efec/62d1ba32d9f1be54b8361503\\_Trusted%20Health%202022%20Mental%20Health%20Survey.pdf](https://assets-global.website-files.com/62991a992ad4fe937e88efec/62d1ba32d9f1be54b8361503_Trusted%20Health%202022%20Mental%20Health%20Survey.pdf)
8. Job satisfaction remains high among certified PAs despite continuing COVID-19 pandemic. National Commission on Certification of Physician Assistants. September 20, 2022. Accessed January 16, 2023. <https://www.nccpa.net/nccpa-reports-that-job-satisfaction-remains-high-among-certified-pas-even-after-two-years-of-dealing-with-the-covid-19-pandemic/>
9. Dee J, Dhuhaiabawi N, Hayden JC. A systematic review and pooled prevalence of burnout in pharmacists. *Int J Clin Pharm.* 2022;1-10. doi:10.1007/s11096-022-01520-6
10. McQuade BM, Keller E, Elmes A, et al. Stratification of burnout in health-system pharmacists during the COVID-19 pandemic: A focus on the ambulatory care pharmacist. *J Am Coll Clin Pharm.* 2022;5(9):942-949. doi:10.1002/jac5.1672
11. Shah MK, Gandrakota N, Cimiotti JP. Prevalence of and factors associated with nurse burnout in the US. *JAMA Netw Open.* 2021;4(2):e2036469. doi:10.1001/jamanetworkopen.2020.36469



12. 2022 NSI National Health Care Retention & RN Staffing Report. NSI Nursing Solutions. 2022. Accessed January 15, 2023.
13. Han S, Shanafelt TD, Sinsky CA, et al. Estimating the attributable cost of physician burnout in the United States. *Ann Intern Med.* 2019;170:784-790. doi:[10.7326/M18-1422](https://doi.org/10.7326/M18-1422)
14. Sturzu L, Lala A, Bisch M, et al. Empathy and burnout - a cross-sectional study among mental healthcare providers in France. *J Med Life.* 2019;12(1):21-29. doi:[10.25122/jml-2018-0050](https://doi.org/10.25122/jml-2018-0050)
15. Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues*, 30, 159-165.
16. Maslach C. A multidimensional theory of burnout. In: Cooper CL. *Theories of Organizational Stress*. Oxford University Press. 1999:68-85. Accessed February 6, 2022. [https://books.google.com/books?hl=en&lr=&id=ahfJ16b-BdUC&oi=fnd&pg=PA68&dq=Maslach+C+Maslach+C+Jackson+SE+Leiter+MP+Burnout:+A+multidimensional+perspective.+In+WB+Schaufeli,+C+Maslach,+T+Marek+\(eds\).+Professional+burnout:+recent+developments+in+theory+and+research+1993+\(pp.19-32\).+Washington+DC:+Taylor+and+Francis.+1996.+Maslach+&ots=O-dnQJpxzX&sig=KIeYF4\\_eCETYacy51Wc52TUW0Ik#v=onepage&q&f=false](https://books.google.com/books?hl=en&lr=&id=ahfJ16b-BdUC&oi=fnd&pg=PA68&dq=Maslach+C+Maslach+C+Jackson+SE+Leiter+MP+Burnout:+A+multidimensional+perspective.+In+WB+Schaufeli,+C+Maslach,+T+Marek+(eds).+Professional+burnout:+recent+developments+in+theory+and+research+1993+(pp.19-32).+Washington+DC:+Taylor+and+Francis.+1996.+Maslach+&ots=O-dnQJpxzX&sig=KIeYF4_eCETYacy51Wc52TUW0Ik#v=onepage&q&f=false)
17. Sullivan A. Clinician burnout. DynaMed Plus database. EBSCO Information Services. Accessed January 15, 2023. <https://www.dynamed.com/condition/clinician-burnout>
18. Heinemann LV, Heinemann T. Burnout research: emergence and scientific investigation of a contested diagnosis. 2017:1-12. doi:[10.1177/21582440176971](https://doi.org/10.1177/21582440176971)
19. Nadon L, De Beer LT, Morin AJS. Should burnout be conceptualized as a mental disorder? *Behavioral Sciences.* 2022;12(3):82. doi:[10.3390/bs12030082](https://doi.org/10.3390/bs12030082)
20. Azoulay E, De Waele J, Ferrer R, et al. Symptoms of burnout in intensive care unit specialists facing the COVID-19 outbreak. *Ann Intern Care.* 2020(110). doi:[10.1186/s13613-020-00722-3](https://doi.org/10.1186/s13613-020-00722-3)
21. Rachel H, Francesco S. Factors associated with and impact of burnout in nursing and residential home care workers for the elderly. *Acta Biomed.* 2018;89(7)60-69. doi:[10.23750/abm.v89i7-S.7830](https://doi.org/10.23750/abm.v89i7-S.7830)
22. Zhang Y, Zhang C, Han X, et al. Determinants of compassion satisfaction, compassion fatigue and burnout in nursing: a correlative meta-analysis. *Medicine.* 97(26). doi:[10.1097/MD.00000000000011086](https://doi.org/10.1097/MD.00000000000011086)
23. Cross LA. Compassion fatigue in palliative care nursing. *J Hosp Palliat Nurs.* 2019;21(1):21-28. doi:[10.1097/NJJ.0000000000000477](https://doi.org/10.1097/NJJ.0000000000000477)

24. Salmond E, Salmond S, Ames M. Experiences of compassion fatigue in direct care nurses: a qualitative systematic review. *JBIS Database of Systematic Reviews and Implementation Reports*. 2019;17(5):682-753. doi:10.11124/JBISRIR-2017-003818
24. Figley C. *Basics of Compassion Fatigue*. Figley Institute; 2012:4-5.
25. Potter P, Deshields T, Divanbeigi J, et al. Compassion fatigue and burnout: prevalence among oncology nurses. *Clin J Onc Nurs*. 2010;14(5):e56-e62. doi:10.1188/10.CJON.E56-E62
26. Crabtree-Nelson S, DeYoung PM, Vincent NJ, et al. Compassion fatigue, compassion satisfaction, and burnout: a study of nurses in a large Texas health-care system. *J Nurs Schol*. 2022;54:720-727. doi:10.1111/jnu.12780
27. Cavanagh N, Cockett G, Doig CJ. Compassion fatigue in healthcare providers: a systematic review and meta-analysis. *Nursing Ethics*. 2020;27(3):639-665. doi:10.1177/0969733019889400
28. Chacula KM. A comprehensive review of compassion fatigue in pre-licensure health students: antecedents, attributes, and consequences. *Curr Psychol*. 2022;41:6275-6287. doi: 10.1007/s12144-020-01122-3
29. Dyrbye LN, West CP, Satele DB, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Academic Medicine*. 2014;89(3):443-451. doi: 10.1097/ACM.0000000000000134
30. Bitran M, Zuniga D, Pedrals N, et al. Burnout in students of health-care professions. *Rev Med Chile*. 2019;147(4):510-517. doi: 10.4067/S0034-988720190000400510
31. Kristensen TS, Biarritz M, Villadsen E, Christensen KB. The Copenhagen burnout inventory: a new tool for the assessment of burnout. *Natl Inst Occu Health*. 2005;19(3):192-207. doi:10.1080/02678370500297720
32. Chachula KM. Professional quality of life factors and relationships in nursing and psychiatric nursing students: an exploratory study. *SAGE Open Nurs*. 2021;7:1-13. doi:10.1177/2377960821994394.
33. Hoff T, Lee DR. Burnout and physician gender: what do we know?. *Med Care*. 2021;59(8):711-720. doi: 10.1097/MLR.0000000000001584
34. Berg S. Why women physicians are more likely to experience burnout. American Medical Association. September 9, 2019. Accessed March 24, 2023. <https://www.ama-assn.org/practice-management/physician-health/why-women-physicians-are-more-likely-experience-burnout>

35. Ptacek J, Apker J. Stress and burnout: a review of research in health organizations. In: Thompson TL, Grant Harrington N eds. The Routledge Handbook of Health Communication. 3rd ed. Taylor & Francis; 2022;259-269.

## Appendix A

### **Demographics and Personal Healthcare Experience Questionnaire**

1. What is your gender?
2. What is the current phase of your education at Butler University?
  1. I am an undergraduate or pre-pharm student
  2. I am a professional-phase pharmacy student
  3. I am an MPAS student
  4. I am a bridge program student (not yet practicing PA)
  5. Other
3. What is your intended career path?
  1. Physician
  2. Physician Assistant
  3. Pharmacist
  4. Physical Therapist
  5. Occupational Therapist
  6. Other
4. What current or past clinical role in patient care support have you had?
  1. CNA/patient care tech/ medical assistant
  2. Pharm tech
  3. Medical scribe
  4. Home health aide
  5. EMT
  6. Other
  7. Not applicable
5. If applicable, what specialty do you/did you work in?

## **Copenhagen Burnout Inventory Tool**

All questions to be answered with: always or to a very high degree (100%), often or to a high degree (75%), sometimes or somewhat (50%), seldom or to a low degree (25%), never/ almost never to a very low degree (0%)

### **Personal burnout**

1. How often do you feel tired?
2. How often are you physically exhausted?
3. How often are you emotionally exhausted?
4. How often do you think 'I can't take it anymore'?
5. How often do you feel worn out?
6. How often do you feel weak and susceptible to illness?

### **Work-related burnout**

1. Do you feel worn out at the end of the working day?
2. Are you exhausted in the morning at the thought of another day at work?
3. Do you feel that every working hour is tiring for you?
4. Do you have enough energy for family and friends during leisure time?
5. Is your work emotionally exhausting?
6. Does your work frustrate you?
7. Do you feel burnt out because of your work?

### **Patient-related burnout**

1. Do you find it hard to work with patients?
2. Does it drain your energy to work with patients?
3. Do you find it frustrating to work with patients?
4. Do you feel that you give more than you get back when you work with patients?
5. Are you tired of working with patients?
6. Do you sometimes wonder how long you will be able to continue working with patients?

### **Professional Quality of Life Scale**

All questions to be answered with: 1 (never), 2 (rarely), 3 (sometimes), 4 (often), 5 (very often)

1. I am happy
2. I am preoccupied with more than one person I help.
3. I get satisfaction from being able to help people.
4. I feel connected to others.
5. I jump or am startled by unexpected sounds.
6. I feel invigorated after working with those I help.
7. I find it difficult to separate my personal life from my life as a helper.
8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I help.
9. I think that I might have been affected by the traumatic stress of those I help.
10. I feel trapped by my job as a helper.
11. Because of my helping, I have felt 'on edge' about various things.
12. I like my work as a helper.
13. I feel depressed because of the traumatic experiences of the people I help.
14. I feel as though I am experiencing the trauma of someone I have helped.
15. I have beliefs that sustain me.
16. I am pleased with how I am able to keep up with helping techniques and protocols.
17. I am the person I always wanted to be.
18. My work makes me feel satisfied.
19. I feel worn out because of my work as a helper.
20. I have happy thoughts and feelings about those I help and how I could help them.
21. I feel overwhelmed because my workload seems endless.
22. I believe I can make a difference through my work.
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I help.
24. I am proud of what I can do to help.
25. As a result of my helping, I have intrusive, frightening thoughts.
26. I feel "bogged down" by the system.
27. I have thoughts that I am a "success" as a helper.
28. I can't recall important parts of my work with trauma victims.
29. I am a very caring person.
30. I am happy that I chose to do this work.

## **Qualitative Open-Ended Questions**

1. How have your clinical hours impacted your college experience and private life?
2. How has COVID-19 impacted your patient care experience?
3. What do you know about burnout?
4. What is your view on the stress of patient care hours?
5. What burnout have you witnessed in faculty or clinical colleagues?

Table 1. *Demographics of Undergraduate and Graduate Butler COPHS Students*

	<b>n (%)</b>
<b>Gender</b>	
Female	86
Male	14
<b>Educational phase</b>	
Undergraduate or pre-pharmacy	30
Professional-phase pharmacy	55
MPAS	13
Other	2
<b>Intended career path</b>	
Physician	10
Physician assistant	30
Pharmacist	56
Other	4
<b>Current and/or past clinical roles</b>	
Certified nursing assistant/patient care technician/medial assistant	24
Pharmacy technician	58
Medical scribe	4
Home health aide	1
Emergency medical technician	6
Other	7
<b>Specialties</b>	
Cardiology	3
Community pharmacy	10
Emergency medicine	5
Family medicine	3
Float	2
Inpatient pharmacy	14
Long term care	12
Med-surg	4
OB/GYN	2
Orthopedics	3
Phlebotomy	3
Physical therapy	3
Retail pharmacy	25
Not specified	4
Other	7



Table 2. *Burnout and Compassion Fatigue Rates of Undergraduate and Graduate Butler COPHS Students*

	<b>Low</b>	<b>Moderate</b>	<b>n (%) High</b>
<b>CBI PB</b>	29	52	19
<b>CBI WRB</b>	39	48	13
<b>CBI PRB</b>	76	20	4
<b>ProQOL CS</b>	1	94	5
<b>ProQOL BO</b>	22	78	0
<b>ProQOL STS</b>	57	43	0

Table 3. *Copenhagen Burnout Inventory Tool Personal Burnout Measures*

	<b>Mean (SD)</b>
<b>How often do you feel tired?</b>	3.86 (0.711)
<b>How often are you physically exhausted?</b>	3.27 (0.886)
<b>How often are you emotionally exhausted?</b>	3.60 (0.964)
<b>How often do you think “I can’t take it anymore”?</b>	2.57 (1.103)
<b>How often do you feel worn out?</b>	3.70 (0.870)
<b>How often do you feel weak and susceptible to illness?</b>	2.66 (1.139)

Table 4. *Copenhagen Burnout Inventory Tool Work-Related Burnout Measures*

	<b>Mean (SD)</b>
<b>Do you feel worn out at the end of a working day?</b>	4.04 (0.828)
<b>Are you exhausted at the thought of working another shift?</b>	3.33 (0.965)
<b>Do you feel that every working hour is tiring for you?</b>	2.67 (1.035)
<b>Do you have enough energy for family and friends during leisure time?</b>	3.13 (0.872)
<b>Is your work emotionally exhausting?</b>	2.99 (1.193)
<b>Does your work frustrate you?</b>	2.80 (1.163)
<b>Do you feel burnt out because of your work?</b>	2.96 (1.154)

Table 5. *Copenhagen Burnout Inventory Tool Patient-Related Burnout Measures*

	<b>Mean (SD)</b>
<b>Do you find it hard to work with patients?</b>	2.24 (0.878)
<b>Does it drain your energy to work with patients?</b>	2.48 (0.915)
<b>Do you find it frustrating to work with patients?</b>	2.40 (0.853)
<b>Do you feel that you give more than you get back from patients?</b>	3.22 (1.162)
<b>Are you tired of working with patients?</b>	1.89 (1.043)
<b>Do you sometimes wonder how long you will be able to continue working with patients?</b>	2.13 (1.178)

Table 6. *Professional Quality of Life Scale Compassion Satisfaction Measures*

	<b>Mean (SD)</b>
<b>I get satisfaction from being able to help people.</b>	4.49 (0.689)
<b>I feel invigorated after working with those I help.</b>	3.42 (0.943)
<b>I like my work as a helper.</b>	4.05 (0.845)
<b>I am pleased with how I am able to keep up with helping techniques and protocols.</b>	3.64 (0.981)
<b>My work makes me feel satisfied.</b>	3.61 (0.931)
<b>I have happy thoughts and feelings about those I help and how I could help them.</b>	3.80 (0.899)
<b>I have thoughts that I am a “success” as a helper.</b>	3.48 (0.919)
<b>I am happy that I chose to do this work.</b>	2.14 (1.020).

Table 7. *Professional Quality of Life Scale Burnout Measures*

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	<b>Mean (SD)</b>
<b>I am happy.</b>	2.19 (0.662)
<b>I feel connected to others.</b>	2.11 (0.942)
<b>I am not as productive at work because I am losing sleep over traumatic experiences of a person I help.</b>	1.62 (0.753)
<b>I feel trapped by my job as a helper.</b>	1.80 (0.979)
<b>I have beliefs that sustain me.</b>	2.41 (1.156)
<b>I am the person I always wanted to be.</b>	2.48 (0.797)
<b>I feel worn out because of my work as a helper.</b>	3.12 (0.924)
<b>I feel overwhelmed because my workload seems endless.</b>	3.33 (1.016)
<b>I feel “bogged down” by the system.</b>	3.14 (1.137)
<b>I am a very caring person.</b>	4.33 (0.685)

Table 8. *Professional Quality of Life Scale Secondary Traumatic Stress Measures*

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	<b>Mean (SD)</b>
<b>I am preoccupied with more than one person I help.</b>	3.65 (0.958)
<b>I jump or am startled by unexpected sounds.</b>	3.29 (1.328)
<b>I find it difficult to separate my personal life from my life as a helper.</b>	2.90 (1.193)
<b>I think that I might have been affected by the traumatic stress of those I help.</b>	1.90 (1.050)
<b>Because of my helping, I have felt “on edge” about various things.</b>	2.28 (1.155)
<b>I feel depressed because of the traumatic experiences of the people I help.</b>	1.65 (0.833)
<b>I feel as though I am experiencing the trauma of someone I have helped.</b>	1.69 (0.950)
<b>I avoid certain activities or situation because they remind me of frightening experiences of the people I help.</b>	1.73 (0.903)
<b>As a result of helping, I have intrusive, frightening thoughts.</b>	1.65 (0.896)
<b>I can’t recall important parts of my work with trauma victims.</b>	1.78 (1.133)

Table 9. Overall Average Respondent Scores

		Mean (SD)
<b>Copenhagen Burnout Inventory Tool</b>		
	Personal burnout	19.6600 (4.47489)
	Work-related burnout	22.0100 (4.78950)
	Patient-related burnout	14.3000 (4.83777)
<b>Professional Quality of Life Scale</b>		
	Compassion satisfaction	32.4900 (4.53827)
	Burnout	26.3400 (4.93640)
	Secondary traumatic stress	22.0000 (6.64238)

Table 10. Regression Analysis of Demographic Factors with CBI and ProQOL Factors

	<b>CBI PB</b>	<b>CBI WRB</b>	<b>t (p-value)</b> <b>CBI PRB</b>
<b>Gender</b>	-3.032 (0.003)*	-2.347 (0.021)*	0.225 (0.822)
<b>Educational level</b>	0.786 (0.434)	-0.303 (0.763)	0.571 (0.569)
<b>Career path</b>	1.434 (0.155)	1.167 (0.246)	2.753 (0.007)*
<b>Past clinical role</b>	1.757 (0.82)	0.473 (0.638)	0.933 (0.353)
<b>Specialty</b>	1.279 (0.204)	0.699 (0.486)	-0.664 (0.508)
	<b>ProQOL CS</b>	<b>ProQOL BO</b>	<b>ProQOL STS</b>
<b>Gender</b>	1.089 (0.279)	-1.939 (0.055)	-2.446 (0.016)*
<b>Educational level</b>	-1.652 (0.102)	0.239 (0.812)	-0.222 (0.825)
<b>Career path</b>	-2.616 (0.010)*	1.885 (0.062)	1.311 (0.193)
<b>Past clinical role</b>	-1.724 (0.088)	1.988 (0.050)*	1.266 (0.209)
<b>Specialty</b>	0.562 (0.575)	0.814 (0.418)	0.748 (0.456)

\*p ≤ 0.05 (2-tailed)

Table 11. *Regression Analysis of Significant Contrasting Demographic Variables*

		<b>CBI PB</b>	<b>CBI WRB</b>	<b>t (p-value) CBI PRB</b>
<b>Gender</b>	<b>Female</b>	3.032 (0.003)*	2.347 (0.021)*	
	<b>Male</b>	-3.032 (0.003)*	-2.347 (0.021)*	
<b>Career path</b>	<b>Physician</b>			-1.314 (0.192)
	<b>Physician Assistant</b>			-1.731 (0.087)
	<b>Pharmacist</b>			1.733 (0.086)
	<b>Other</b>			1.682 (0.96)
		<b>ProQOL CS</b>	<b>ProQOL BO</b>	<b>ProQOL STS</b>
<b>Gender</b>	<b>Female</b>			2.446 (0.016)
	<b>Male</b>			-2.446 (0.016)
<b>Career path</b>	<b>Physician</b>	2.984 (0.004)*		
	<b>Physician assistant</b>	1.268 (0.208)		
	<b>Pharmacist</b>	-2.921 (0.004)*		
	<b>Other</b>	-0.219 (0.827)		
<b>Past clinical role</b>	<b>Nonpharmacy</b>		-2.113 (0.037)*	
	<b>Pharmacy</b>		1.711 (0.090)	
	<b>Other</b>		0.603 (0.548)	

\*p ≤ 0.05 (2-tailed)

Table 12. *Pearson Correlation Coefficient Analysis of Burnout Subgroups*

	<b>CBI PB</b>	<b>CBI WRB</b>	<b>CBI PRB</b>	<b>ProQOL CS</b>	<b>ProQOL BO</b>	<b>t (p-value) ProQOL STS</b>
<b>CBI PB</b>		0.478**	0.199*	-0.296**	0.585**	0.342**
<b>CBI WRB</b>	0.478**		0.523**	-0.429**	0.522**	0.319**
<b>CBI PRB</b>	0.199*	0.523**		-0.550**	0.538**	0.233*
<b>ProQOL CS</b>	-0.296**	-0.429**	-0.550**		-0.490**	-0.129
<b>ProQOL BO</b>	0.585**	0.522**	0.538**	-0.490**		0.571**
<b>ProQOL STS</b>	0.342**	0.319**	0.233*	-0.129	0.571**	

\* $p \leq 0.05$  (2-tailed)

\*\* $p \leq 0.01$  (2-tailed)