# Burnout in Graduate Students

by

**Carly Alyssa Duncan**

Bachelor of Science in Biobehavioral Health, Pennsylvania State University, 2020

Submitted to the Graduate Faculty of the

Department of Behavioral and Community Health Sciences

Graduate School of Public Health in partial fulfillment

of the requirements for the degree of

Master of Public Health

University of Pittsburgh

2022

UNIVERSITY OF PITTSBURGH

GRADUATE SCHOOL OF PUBLIC HEALTH

This essay is submitted

by

**Carly Alyssa Duncan**

on

April 29, 2022

and approved by

Martha Ann Terry, PhD, MA
Associate Professor
Department of Behavioral and Community Health Sciences
University of Pittsburgh

Nancy W. Glynn, PhD, MEd
Associate Professor
Department of Epidemiology
University of Pittsburgh

Jeanine Buchanich, PhD, MEd, MPH
Research Associate Professor
Department of Biostatistics
University of Pittsburgh

**Burnout in Graduate Students**

Carly Alyssa Duncan, MPH

University of Pittsburgh, 2022

## Abstract

Amongst the approximately 3.1 million graduate students currently enrolled in advanced degree programs in the United States, nearly 66% reported above-average stress since the beginning of the pandemic, most notably due to poor relationships with advisors and difficulty finding a work-life balance. This has led to considerable feelings of burnout. Burnout is not a new phenomenon in the United States, as it was first defined by psychoanalyst H.J. Fruedenberger in 1974. While burnout is often used to describe the working population throughout the United States, it has become increasingly noticed that graduate students are particularly vulnerable to feelings of burnout, which is evident by three symptoms particular to students: cynicism, exhaustion, and lack of professional efficacy.

This essay explored published literature on burnout in graduate students, analyzed the literature for recurring themes, and proposed a future study to address the gaps in knowledge in current literature. Current literature suggests that certain comorbid mental health conditions are present among graduate students and a few documented methods that mitigate the effects of burnout in this demographic. However, a few problems exist evident in current literature regarding burnout in graduate students. First of all, current literature lacks qualitative data to help understand why graduate students experience burnout. Furthermore, the reviewed articles do not measure burnout consistently, making it difficult to generalize findings.

As a result, is it recommended that focus groups be conducted to account for the gap in existing literature and to guide the development of future interventions targeted at this population. Future exploration of this topic will help ease the burden of graduate school and guide creation of conducive learning environments for many generations of future graduate students to come. Easing the burden of graduate school for students will also help to eliminate other public health problems in this population, including substance abuse, suicide, anxiety, and depression.

## Table of Contents

## List of Tables

## List of Figures

## Preface

First and foremost, I would like to thank Dr. Martha Terry for never giving up on me even when I gave up on myself, teaching me to take the good and bad days both with grace, and guiding me through the most challenging endeavor of my life thus far. It has been an honor and privilege having you as a mentor for the past two years, and just know that your kindness, dedication, and selflessness will stick with me for the rest of my professional career (and probably even beyond that). I'd also like to thank Dr. Nancy Glynn and Dr. Jeanine Buchanich for taking the time to contribute their comments to my essay in the home stretch of the semester. I didn't make it easy or convenient for you two, but you still helped me succeed, and I will be forever grateful. Finally, I'd like to thank my undergraduate mentor, Dr. Penelope Morrison, for always lending an ear and offering advice when I needed it the most. I wouldn't be on this professional journey without you convincing me to go into public health from the start, and I appreciate the countless hours you've invested into me.

## 1.0 Introduction

Stress is a common feeling in the United States. According to Searing (2020), at least 60% of Americans feel some level of stress on a weekly basis, whether in their professional or personal lives. According to the National Institute of Mental Health (2021), stress may be defined as "a physical or mental response to a singular external cause." Although most professionals experience stress in their work environment to some extent (The American Institute of Stress 2019), whether a school or workplace, chronic stress can lead to a condition known as burnout (International Classification of Diseases 2010). While burnout applies to many different types of professional settings, it has significantly increased in students since the beginning of the COVID-19 pandemic, although the phenomenon itself is nothing new (Citroner 2021). While all student populations may be affected by burnout, the graduate student population is even more at risk for these feelings than undergraduate students (Ickes, Brown, Reeves, and Zephyr 2015).

According to the National Center for Educational Statistics (2021), approximately 3.1 million graduate students are currently enrolled in degree programs in the United States. Out of these, nearly 66% reported above-average stress since the beginning of the pandemic, most notably due to poor relationships with advisors and difficulty finding a work-life balance (American College Health Association 2018). Even though graduate student burnout is well-documented, there is a lack of pressure on universities to learn more about why this specific population experiences burnout and to find interventions to treat it. Instead, the pressure is put on students to find solutions to improve their mental health (Lane 2021).

## 2.0 Background

### 2.1 Historical Perspective on Burnout

Burnout has been described by humans dating back to the Old Testament of the Bible, but according to Muheim (2013), the term "burnout" was officially coined by psychoanalyst H.J. Fruedenberger in 1974 and originally used to describe the pure exhaustion that led to a decrease in quality and quantity of work produced in human-service fields such as healthcare (Samara 2018). Even though Fruedenberger is considered the father of burnout, the new phenomenon was also studied by Maslach starting in 1976, which eventually lead to the development of the Maslach Burnout Inventory (MBI) (Muheim 2013). After the 1970s, research on burnout entered two different phases, the pioneer phase and the empirical phase, still led by the same two researchers. Work in the pioneer phase, which spanned to the mid 1980s, aimed to articulate what burnout is while research in the empirical phase, which remains active today, aims at determining the effect that burnout has on professionals in different scenarios (Muheim 2013). While the burnout phenomenon is not specific to the United States and its culture, Schaufeli (2017) explains that occupational burnout can be interpreted only in cultures where jobs, occupations, and professions exist, even though exhaustion and depression are universal psychological experiences.

## 2.2 Burnout in the United States

While burnout is not a new phenomenon, it has become increasingly common in working individuals throughout the United States in 2021 (Threlkeld 2021). In 2010, the International Classification of Diseases (ICD) defined burnout as the presence of the following symptoms: persistent and distressing complaints of increased fatigue after mental effort; at least four physical symptoms that are present for at least two weeks, including but not limited to insomnia, cognitive deficits, pain, heart palpitations, and gastrointestinal problems; psychosocial stressors that are present for at least six months; and clinically significant distress or impairment (van Dam 2021). Further, Fowler (2015) explains that burnout from a psychological viewpoint can be categorized by three primary dimensions: emotional exhaustion, depersonalization, and low sense of personal accomplishment. Regardless of the definition, Leiter (2004) shows that burnout takes a toll on one's body both physically and mentally, which directly affects energy levels and productivity in the workplace.

## 2.3 Measuring Burnout

Like all other conditions, burnout must meet certain criteria to receive an official diagnosis, so the MBI was created by Christina Maslach and Susan E. Jackson in 1981. The MBI uses 22 questions to assess the three dimensions of burnout in the workplace and has been modified to address burnout in other specific settings, such as schools, healthcare job settings, and other job settings known to take a significant emotional toll on professionals. Fowler (2015) further explains that the adapted MBI for students focuses on three areas more suited to the student population:

cynicism, exhaustion, and professional efficacy. Maslach and Jackson (1981) argue that it is vital to consider these concepts when measuring burnout in professional settings in order to understand where to target interventions and changes in said environments.

However, the MBI does not exist without critique. Perlman and Hartman (1982) suggest that burnout is a multi-dimensional diagnosis that cannot be summed into a score like other psychological diagnoses, such as autism spectrum disorder. The authors argue that topics such as coping, spill-over effects from burnout, and impact of life stages are not explored through the original MBI even though they may affect how an individual experiences burnout. Furthermore, Kristensen, Borritz, Villadsen, and Christensen (2007) argue that the three dynamics of burnout cannot be intertwined and should be examined individually instead of in a singular measure because it is unfair to measure a single phenomenon with multiple, unrelated dimensions. The authors also note that even though the MBI is used in over 90% of international research regarding burnout, the questions are leading and often stir up negative emotions in those who take the survey. Finally, the authors state that the MBI applies only to human-services work due to the language of the survey, and in turn, is difficult to use with professions that do not work directly with the public.

In turn, the authors (Kristensen et al. 2007) created the Copenhagen Burnout Inventory (CBI), which takes into account multiple aspects on an individual's life to pinpoint where burnout is rooted. Furthermore, in 2009, the School Burnout Inventory was created by Salmela-Aro, Kiuru, Leskinen, and Nurmi. While this inventory is also popular outside of the United States, it is proven valid and reliable only when working with students in high schools and vocational schools, thus making it impossible to apply to graduate students. Both the Copenhagen Burnout Inventory and Student Burnout Inventory are utilized internationally; however, the MBI is still the most

commonly used burnout inventory in research conducted in the United States and considered the gold standard in burnout research (Williamson, Lank, Cheema, Hartman, and Lovell 2018).

### 2.4 Burnout in Different United States Populations

While burnout is common, previous research shows individuals in different populations in the United States experience burnout differently. Greenglass, Burke, and Ondrack (1990) explore the differences in burnout between males and females and the coping mechanisms each uses. This article postulated that females are overall better at reducing burnout through coping mechanisms than their male counterparts due to the gender stereotypes present in American society. This is further explained by Giankos (2000), where the author states that men are less likely to engage in positive coping mechanisms due to toxic masculinity expectations held by American society. While women may seek out positive coping mechanisms, Montero-Marin et al. (2014) further discussed that individuals deploy different coping mechanisms depending on how burnout manifests based on the MBI. Regardless of gender, they determined that lower levels of engagement in professional responsibilities was the most common way to cope with burnout (Montero-Marin et al. 2014).

Furthermore, many different professions in the United States have fallen victim to burnout in the wake of the COVID-19 pandemic, most notably healthcare workers (Bradley and Chahar 2020) and those who work in education (Mheidly, Fares, and Fares 2020). Mheidly, Fares, and Fares (2020) suggest making burnout testing more readily available to those in professions more likely to experience burnout after the COVID-19 pandemic but emphasize the importance of mental health resources for those in education, whether students, faculty, or staff.

## 2.5 Graduate Students in the United States

In the United States, the number of enrolled graduate students has risen steadily since 2009 and is expected to continue rising. According to the National Center for Educational Statistics (2021), enrollment in graduate-level programs increased by 8% between 2009 and 2019, from 2.8 million to 3.1 million students respectively. While a plethora of published studies explore high school and undergraduate stress and mental health (Walburg 2014; Pisarik 2009; Neumann, Finaly-Neumann, and Reichel 2016), comparatively, few studies focus specifically on graduate student mental health, which presents a problem as the graduate student population continues to rise. Current research on student burnout covers individuals in many specific fields, including but not limited to healthcare, psychology, music, education, and finance. However, few studies look at the graduate student population, which makes it difficult to generalize current data. Finally, few studies provide qualitative data or incorporate interventions specifically focused on graduate students that would contribute to the overall understanding of and intervening on burnout in the graduate student population.

## 3.0 Methods

Google Scholar, PsycINFO, PubMed, and the University of Pittsburgh Library System were utilized to identify articles in January 2022, as shown in Figure 1. Search terms included the following: academia burnout, burnout in graduate students, burnout graduate school, educational burnout graduate students, and secondary education burnout. The term "academia burnout" yielded 48,040 results. The term "burnout in graduate students" produced 154,660 results. The term "burnout graduate school" returned 136,927 results. The term "educational burnout graduate students" yielded 131,047 results. Finally, the term "secondary education burnout" produced 201,435 results. Inclusion and exclusion criteria were established to identify the most relevant articles. Articles were excluded if they met any one of the following criteria:

- Published before 2010, as the educational climate has changed
- Failed to focus primarily on graduate students
- Not written in English
- Not published in a peer-reviewed journal
- Not conducted in the United States
- Focused on one academic concentration

Articles were included if they primarily focused on burnout in the graduate student population, regardless of academic concentration or level of graduate study. Ten articles were selected to explore the general phenomenon of burnout in graduate students. The selected articles highlight the three identified dynamics of burnout in graduate students: cynicism, exhaustion, and lack of professional efficacy.

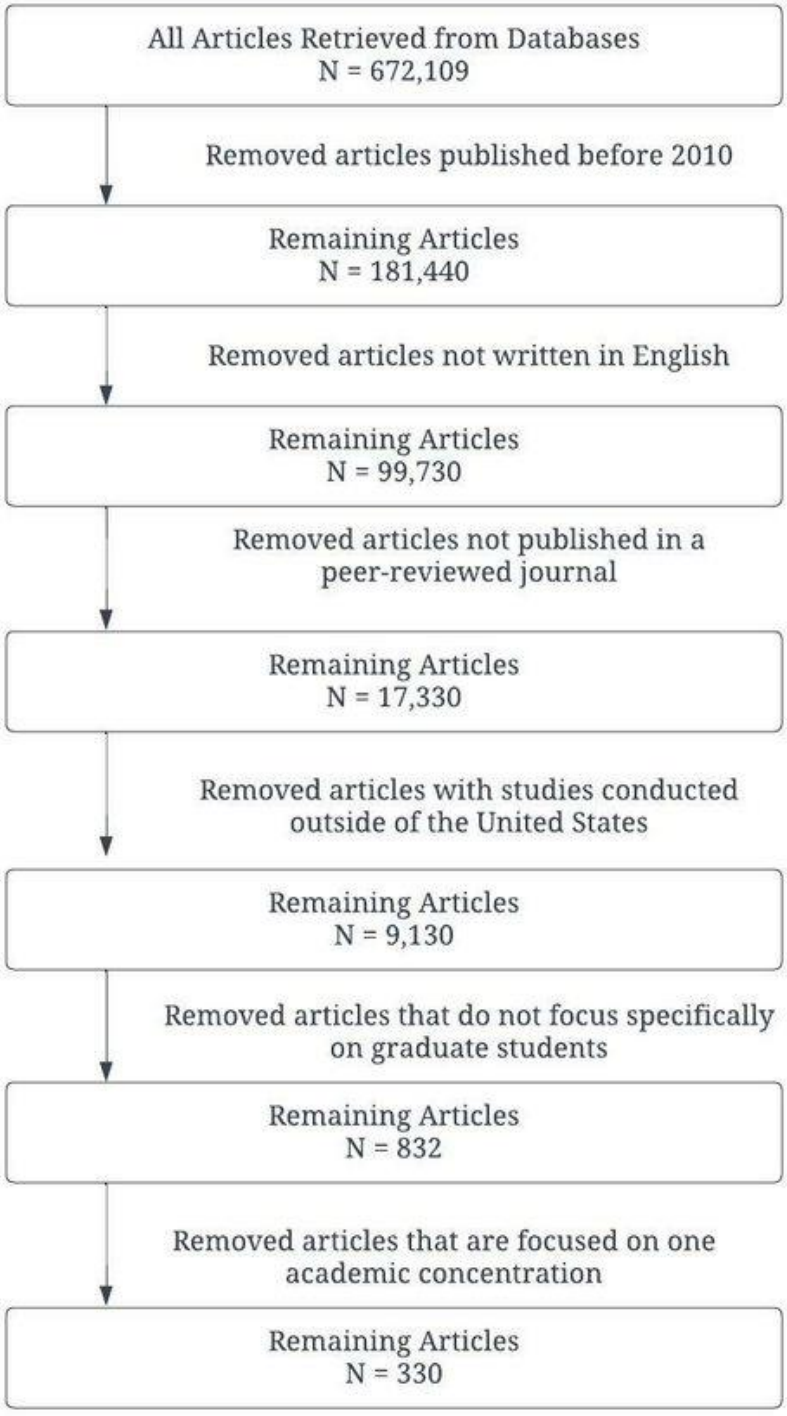


**Figure 1. Flowchart of Literature Search**

## 4.0 Results

The ten articles explore three different dynamics of educational burnout: factors that mitigate burnout, comorbid health conditions, and interventions that have been introduced to eliminate burnout in this specific population. Five articles focus on factors that mitigate burnout (Rigg, Day, and Adler 2013; Boren 2013; Goodboy, Martin, and Johnson 2015; Evans, Bira, Gastelum, Weiss, and Vanderford 2018; Allen, Barrall, Vincent, and Arria 2020). Four articles explore on comorbid health conditions (Allen, Lilly, Green, Zanjani, Vincent, and Arria 2020; Dolson and Deemer 2020; Gallea, Medrano, and Morera 2021; Warlick, Farmer, Gorp, and Patterson 2021), and one article investigates a possible intervention (Fang, McMahon, Miller, and Rosenthal 2020), as explained in Table 1.

**Table 1. Reviewed Articles on Graduate Student Burnout**

| Authors | Sample Size | School Location and Description | Outcome of Interest | Burnout Measurement |
|---|---|---|---|---|
| Allen, Barrall, Vincent, and Arria (2020) | 2,683 Students | Two large, public universities in the Mid-Atlantic United States | Sleep quality and duration | MBI - Student Survey |
| Allen, Lilly, Green, Zanjani, Vincent, and Arria (2020) | 2,683 Students | Two large, public universities in the Mid-Atlantic United States | Substance use and mental health | MBI - Student Survey |
| Boren (2013) | 213 Students | Urban United States | Co-rumination | *MBI - General Survey |
| Dolson and Deemer (2020) | 245 Students | Large, Midwestern University | School-family conflict | MBI - Student Survey |
| Evans, Bira, Gastelum, Weiss, and Vanderfold (2018) | 2,231 Students | Arizona | Work-life balance and mentoring relationships | MBI - Student Survey |
| Fang, McMahon, Miller, and Rosenthal (2020) | 66 Students | North Carolina | Phone intervention | School Burnout Inventory |
| Gallea, Medrano, and Morera (2021) | 153 Students | United States | Mental health | MBI - General Survey |
| Goodboy, Marrtin, and Johnson (2015) | 272 Students | Throughout the United States | Faculty bullying | MBI - Student Survey |
| Rigg, Day, and Adler (2013) | 400 Students | Midwestern US | Self-efficacy, social support, engagement | MBI - General Survey |
| Warlick, Farmer, Gorp, and Patterson (2021) | 88 Students | United States | Comparison between graduate students and professionals | **CBI |

*MBI: Maslach Burnout Inventory
**CBI: Copenhagen Burnout Inventory

### 4.1 Factors that Mitigate Burnout

A review of the literature shows that several factors mitigate burnout. For the purposes of this paper, social support and sleep will be discussed. Review of the articles shows that receiving social support received from friends, family, advisors, and classmates is a recurring theme. Rigg, Day, and Adler (2013) explored the role of engagement, self-efficacy, and social support in the context of educational burnout in 400 graduate students in the midwestern United States. While no article mentioned the exact university at which data were collected, this article states that it was a "medium-sized, research-driven university" (page 142) where international students make up nearly half of the population (Rigg, Day, and Adler 2013). The authors concluded that students experienced lower levels of educational burnout when they engaged in more out-of-class activities, received social support from peers, and displayed greater rates of self-efficacy.

Similar to the description from Rigg, Day, and Adler, Boren (2013) reports that his research was conducted at a "large, urban university in the United States" (page 9). While Boren (2013) agreed that social support is needed to eliminate educational burnout, he hypothesizes that social dynamics are more complex than originally described by Rigg, Day, and Adler (2013). Boren (2013) notes that any kind of support network acts as a buffer for the stress that graduate students experience; however, it is vital to understand whether these social networks focus on positive or negative interactions when creating interventions for graduate students experiencing burnout. Boren (2013) explains that co-rumination, defined as "excessive negative talk about issues with peers" (page 7), suppresses the positive effects that most graduate students experience as a result of social support. Therefore, it is more harmful for students to engage in these conversations than to not engage in any conversation at all.

Goodboy, Martin, and Johnson (2015) support the idea that harmful social support systems, particularly with advisors, increase the amount of burnout a student may face regardless of their location throughout the United States. The authors of this study (Goodboy, Martin, and Johnson 2015) concluded that harmful advisor-student relationships may lead to cynical attitudes, lack of professional efficacy, and low civic virtue in graduate students, in addition to burnout, all of which are detrimental to a student's educational experience.

However, similar to Rigg, Day, and Adler (2013), Evans, Bira, Gastelum, Weiss, and Vanderford (2018) emphasize the important of positive relationships when considering burnout in graduate students. Even though this article only focused graduate students specifically in Arizona, they discovered that positive mentor relationships from faculty helped to offset feelings of burnout.

While social support is the most widely accepted mediator of educational burnout in graduate students, Allen, Barrall, Vincent, and Arria (2020) explored the relationship between sleep and burnout in graduate students. The authors concluded that quality of sleep was more vital than the quantity of sleep an individual had in reducing the burnout experience, and even though the study (Allen et al. 2020) had a fairly large sample size, the authors urged future researchers to continue examining the relationship between burnout and sleep.

### 4.2 Comorbid Health Conditions

Many of the comorbid health conditions that are present in graduate students who experience educational burnout are a result of genetics and hormonal markers within the body, even though one article (Allen, Lilly, Green, Zanjani, Vincent, and Arria, 2020) hypothesized the opposite: burnout leads to other health conditions as a result of the actions a student may take while

experiencing burnout. Allen et al. (2020) hypothesized that substance use may be heightened while experiencing burnout which, in turn, can lead to adverse health conditions related to using these substances. However, the authors found the opposite to be true. They concluded that there was no significant correlation between educational burnout in graduate students and substance use. However, the authors discovered a significant correlation between educational burnout and high levels of stress, anxiety, and depression, both self-diagnosed and professionally diagnosed (Allen, et al. 2020).

Gallea, Medrano, and Morera (2021) further explored this phenomenon and linked it to the deregulation of the hypothalamic-pituitary-adrenal (HPA) axis in the body, which in turn led to unbalanced levels of cortisol, which is known as the stress hormone, in the body. High levels of cortisol may explain why students feel heightened levels of anxiety and depression while experiencing educational burnout, which is further explored by Vedhara et al. (2003). Vedhara et al. (2003) found that cortisol levels are significantly related to high levels of emotional distress, even though it is unclear which factor causes the other.

Furthermore, Warlick, Farmer, Gorp, and Patterson (2021) conclude that females are more likely than males to experience any kind of burnout, whether it is workplace, educational, or personal burnout. The authors argue that women experience greater school-life imbalances, gender bias, discrimination, and sexual harassment, which lead to higher levels of burnout, anxiety, depression, and stress. However, these authors, similar to most authors of the ten reviewed articles, emphasize that further research is required to investigate the relationship between gender and burnout, particularly burnout in the graduate student population (Warlick et al. 2021).

### 4.3 Interventions

While the initial literature searches returned many results, published literature on current interventions for graduate students who experience burnout is lacking. However, one article, by Fang, McMahon, Miller, and Rosenthal (2020), explored the efficacy of phone-administered behavioral interventions with graduate students who experience burnout. Participants completed three days of baseline surveys, a phone call with the study coordinator, and a week of follow-up surveys. The call consisted of therapeutic ways to increase rewarding behaviors and helping participants reach goals that they have been avoiding. The authors focused on shifting students' attitudes from avoidance to approach-based over the course of the intervention, which had positive results. The authors concluded that students in the experimental group reported significantly lower levels of burnout and higher levels of well-being compared to those in the control group. However, a larger sample size is needed to generalize the findings of the study before implementing the intervention on a larger scale (Fang, McMahon, Miller, and Rosenthal 2020).

## 5.0 Discussion

The reviewed articles on burnout in graduate students create a solid foundation for future research on this topic. However, future research will need to account for a few flaws to collect the most relevant, useful data possible on a topic that is of the upmost importance in the United States. First and foremost, all of the reviewed studies utilized solely quantitative measures. While quantitative measures are beneficial for understanding the prevalence and incidence of certain phenomena, qualitative data enriches the understanding of why different phenomena happen and can help guide the development of interventions.

Furthermore, while most studies utilized the MBI, whether the student survey or the general survey, two articles (Fang et al. 2020; Warlick et al. 2021) used different burnout inventories, notably inventories that are not considered the gold standard of use in American burnout research (Williamson, Lank, Cheema, Hartman, and Lovell 2018). Therefore, results from these articles cannot be generalized to graduate student populations in the United States.

Finally, even though all ten articles focused on American graduate students, all lacked specificity about the location of the graduate students enrolled in each study and the atmosphere and environment of the universities accounted for. The studies either gave a state, general location within the United States (e.g., the Midwest), or just noted “the United States.” In public health practice, the social ecological framework illustrates that health is affected by multiple levels of relationships throughout the life course, from the individual influences to interpersonal relationships to policy and society standards. If these studies had included a more complete understanding of the environment in which these students were learning, they might have provided

more insight into which factors related to burnout in graduate students needed further investigation.

## 5.1 Study Proposal

Since the articles analyzed for this paper exhibit gaps in current literature about burnout in graduate students, it is proposed that a study deploying focus groups be conducted to expand the current understanding of burnout in graduate students, and in turn, give future researchers the necessary foundation to create and implement interventions targeted specifically at this population. While any qualitative data would be beneficial to the understanding of burnout in graduate students, using focus groups has some advantages, as explained by Litosseliti (2003). First and foremost, compared to other qualitative strategies such as interviews or observations, researchers are able to collect more data over a shorter period of time when conducting focus groups. Furthermore, focus groups are a collaborative effort among the participants, which gives them the opportunity to build on each other's comments when discussing their personal experiences and opinions because they may have certain experiences in common. This enriches the conversation as well as the data that are being collected. Finally, graduate school is not a solo venture. As previously stated, graduate students are affected by the environment around them and who they interact with on a daily basis. Focus groups simulate this environment. Other qualitative research methods, such as interviews, can force the participants to define and explain these circumstances from an individualistic point of view. Putting students in focus groups together allows them to learn from each other, banter with each other, and create a more realistic vision into what the life of a graduate student looks like.

Just like any other research methods, focus groups also have their drawbacks, especially in the era of COVID-19. While pre-COVID research has explored the viability of online focus groups compared to in-person focus groups (Reid and Reid 2005), online focus groups are not ideal for the moderator due to the difficulty of picking up on social cues given by participants. On the other hand, in the middle of a pandemic, individuals may not feel comfortable attending in-person focus groups, and it may be challenging to recruit as many participants.

## 5.2 Sampling Scheme

This proposed study will consist of at least four focus groups containing six to 12 participants in each group. If data saturation is not reached after four focus groups, additional groups may be conducted until data saturation is reached. Participants must meet the following criteria to be included in the study:

- At least 18 years of age
- Able to speak English
- Currently enrolled in a graduate program at the University of Pittsburgh
- Experienced self-reported burnout within the last year confirmed by the MBI – Student Survey
- No one will be excluded based on gender identity, sexual orientation, religion, or country of origin.

Participants will be excluded if they have not experienced burnout, are pursuing an undergraduate degree, or are pursuing a graduate degree from another university.

### 5.3 Recruitment

Graduate students will be recruited from each graduate program at the University of Pittsburgh. Flyers will be posted around campus, and emails will be sent to program listservs with the contact information for the study. Study information will also be distributed through the *Pitt + Me* research community. Overall, approximately 35 students will be enrolled into the study.

### 5.4 Housekeeping

Half of the focus groups will be held at the Cathedral of Learning, located on the campus of the University of Pittsburgh, and the other half will be held virtually via Zoom. Groups will run for approximately an hour and a half. Take-home meals will be provided to participants who attend in person, but all participants will receive a $20 VINCENT card for participation compensation, regardless if they choose to attend in person or virtually. Groups will be held at different times of day to account for different class schedules throughout the different graduate programs at the University of Pittsburgh. The following focus group guide will be used to conduct the discussions.

### 5.5 Introduction

Good evening, everybody. Thank you all for coming. My name is Carly Duncan. I am an MPH candidate from the University of Pittsburgh. We are conducting these focus groups in order to better understand the experience of burnout in graduate students. We will use the data collected

in these focus groups to identify trends, lay the foundation for future research, and guide intervention development. Before we get started, I just wanted to go over some rules. First of all, I am not here to lecture you. I am here to listen. With that being said, I want to hear from all of you. Each person has their own unique experience, and I want you to know that each experience is valid. There is no right or wrong opinion to have, and I don't expect everybody to agree throughout the course of the next hour and a half. I just ask that you are as honest with me as you feel comfortable being. This focus group will be recorded and later transcribed. Once the recording it transcribed, it will be destroyed. Transcripts from all the groups will be stored in encrypted files, and these files will only be accessible to research staff. You will not be identified in the recording or anytime afterwards. Your identity remains confidential throughout the entire research process, and your participation is completely voluntary. You do not need to answer any questions that make you feel uncomfortable. By staying seated at this table, you are consenting for your words, stories, and opinions to be used to the previously stated research purposes. Does anybody have any questions before we get started?

### 5.6 Questions

- Tell me about your graduate experience at the University of Pittsburgh.
- Why do you believe you have burnout?
- Tell me about when you started to feel burnout during your program.
- What do you do to cope with burnout?
- What kind of social support systems do you have in place?
- What interventions would help lessen your feelings of burnout?

- Is there anything else you'd like to tell me about your burnout experience in graduate school?

## 5.7 Analysis Plan

Focus groups will be recorded and transcribed by research staff. After transcription, five members of the research team will enter data into Atlas.TI and thematically code each transcript. Following the creation of the codebook, the research team will further analyze the findings for recurring themes and determine steps for future research and identify elements of potential interventions.

## 6.0 Conclusion

While burnout was officially defined in 1974 by psychoanalyst H.J. Freudenberger (Muheim 2013), burnout has become common in the United States over the past ten years, and even more so since 2021 (Threlkeld 2021). While there are multiple ways to measure burnout, such as the Maslach Burnout Inventory (Maslach and Jackson 1981), the Copenhagen Burnout Inventory (Kristensen et al. 2007), and the School Burnout Inventory (Salmela-Aro et al. 2009), the Maslach Burnout Inventory, specifically the adapted version specifically created for secondary education students, is the gold standard for burnout research in the United States (Williamson, Lank, Cheema, Hartman, and Lovell 2018). While this essay focuses on graduate students who experience burnout, other populations in the United States are susceptible to burnout as well, including healthcare workers (Bradley and Chahar 2020). Also, females are more susceptible to burnout than their male counterparts (Greenglass, Burke, and Ondrack 1990). With the graduate student population rising and not expecting a decrease anytime soon (National Center for Educational Statistics 2021), it is even more important to investigate burnout in this specific population within the United States.

The results of this literature review inform us that educational burnout is a prevalent problem in a plethora of graduate programs. Current research spans over multiple topics surrounding burnout in graduate students, including interventions, strategies to mitigate burnout, and comorbid health behaviors and conditions that may worsen burnout. However, the current literature fails to utilize qualitative data while exploring these topics, which is crucial to understanding the topic at hand as well as any other health problems. In turn, it is proposed to conduct another study using focus groups to obtain qualitative data surrounding burnout in

graduate students in order to optimize the understanding of knowledge on this topic. The data collected through focus groups can support future researchers in creating more interventions specifically targeted to curb the amount of educational burnout that graduate students face.

As with any other research study, the present literature review and proposed focus group study have certain limitations. To begin with, only ten articles were analyzed for the purpose of the literature review due to the specificity of most articles on the topic of educational burnout in graduate students. Although initial searches returned over 600,000 results, many previous studies focused on burnout in a particular graduate field, most often healthcare. Therefore, only a select number of studies were analyzed and used to draw conclusions for this literature review. Furthermore, instead of focusing on one component of educational burnout, the literature review covered three different components. The moderator of a focus group generally asks only four to six questions, so it would be difficult to encapsulate all of the explored components in a singular focus group. Finally, the proposed focus group will take place at only one university; however, plans are to recruit students from every graduate program. This may limit the experiences shared in the focus groups and impose reporting bias on future results, thus minimizing the understanding of burnout as a result of said future study.

As previously mentioned, the number of graduate students in the United States is not predicted to decline anytime soon (National Center for Educational Statistics 2021). The current literature and published quantitative data show that burnout is a common phenomenon in graduate students. However, current literature is lacking understanding from a qualitative point of view, consistent burnout measurements, and explanation of external factors associated with burnout, such as campus environment. By conducting qualitative research on the topic and creating interventions to combat feelings of burnout, future investigators will help students conquer a

feeling that is too commonly felt among graduate student. Obtaining a graduate degree is difficult enough without feelings of exhaustion, lack of motivation, isolation, failure, and frustration. Further exploration of this topic can help future researchers set up graduate students up for the highest level of success for many generations to come.

### 6.1 Public Health Relevance

While literature dating back to the 1990s describes stress, anxiety, and depression in college students (Heiligenstein, Guenther, Hsu, and Herman 1996), multiple studies have reported increased depression, anxiety, and stress in graduate students in wake of the COVID-19 pandemic (Hoyt, Cohen, Dull, Castro, and Yazdani 2021; Woolston 2020). Burnout only worsens feelings of stress, depression, and anxiety in college students (Gallea, Medrano, and Morera 2021). If researchers neglect burnout in the graduate student population, use of toxic coping mechanisms, such as substance use and suicide, will increase while the use of mental health resources on college campuses will decrease. Graduate students pursue higher education in order to make a difference in the lives of others, regardless of what academic concentration they are in. It is time for professionals to care about shoes they once filled in order to support the next generation of working professionals in the United States.

## Bibliography


Allen, H.K., Barrall, A.L., Vincent, K.B., & Arria, A.M. (2020). Stress and burnout among graduate students: moderation by sleep duration and quality. *International Journal of Behavioral Medicine, 28,* 21-28. https://doi.org/10.1007/s12529-020-09867-8

Allen, H.K., Lilly, F., Green, K.M., Zanjani, F., Vincent, K.B., & Arria, A.M. (2020). Graduate student burnout: substance use, mental health, and the moderating role of advisor satisfaction. *International Journal of Mental Health and Addiction.* https://doi.org/10.1007/s11469-020-00431-9

Allen, H.K., Lilly, F., Boren, J.P. (2013). Co-rumination partially mediates the relationship between social support and emotional exhaustion among graduate students. *Communication Quarterly,* 61(3), 253-267. https://doi.org/10.1080/01463373.2012.751436

Bradley, M. & Chahar, P. (2020). Burnout of healthcare providers during the COVID-19 pandemic. *Cleveland Clinic Journal of Medicine.* https://tinyurl.com/mpwvd269

Champion, D.F. & Westbrook, B.W. (1984). Maslach burnout inventory. *Measurement and Evaluation in Counseling and Development,* 17(2), 100-102.

Citroner, G. (25 July 2021). *College students increasingly support high levels of anxiety and burnout during the pandemic.* Healthline. https://tinyurl.com/yckruh7w

Dolson, J.M. & Deemer, E.D. (2020). The relationship between perceived discrimination and school/work-family conflict among graduate student-parents. *Journal of Career Development,* 49(1), 174-187. doi:10.1177/0894845320916245

*Executive Summary.* (2018). American College Health Association. https://tinyurl.com/2p86ewkk

Evans, T.M., Bira, L., Gastelum, J.B., Weiss, L.T., & Vanderfold, N.L. (2018). Stress & burnout in graduate students: the role of work-life balance and mentoring relationships. *The FASEB Journal:* 32, 535. https://doi.org/10.1096/fasebj.2018.32.1_supplement.535.27

Fang, C.M., McMahon, K., Miller, M.L., & Rosenthal, M.Z. (2021). A pilot study investigating the efficacy of brief, phone-based, behavioral interventions for burnout in graduate students. *J Clin Psychology,* 77, 2725-2745. doi:10.1002/jclp.23245

Fowler, S. (2015). Burnout and depression in academia: a look at the discourse of the university. *European Journal for the Philosophy of Communication, 6*(2), 155-167. doi:10.1386/ejpc.6.2.155_1

Gallea, J.I., Medrano, L.A., & Morera, L.P. (2021). Work-related mental health issues in graduate student population. *Frontiers in Neuroscience,* 15. doi:10.3389/fnins.2021.593562

Gianakos, I. (2000). Gender roles and coping with work stress. *Sex Roles,* 42(11), 1059-1079. doi.org/10.1023/A:1007092718727

Goodboy, A., Martin, M., & Johnson, Z. (2015). The relationship between workplace bullying by graduate faculty with graduate students' burnout and organizational citizenship behaviors. *Communication Research Reports:* 32(3), 272-280. doi:10.1080/08824096.2015.1052904

Greenglass, E.R., Burke, R.J., & Ondrack, M. (1990). A gender-role perspective of coping and burnout. *Applied Psychology: An International Review, 39*(1), 5-27. https://doi.org/10.1111/j.1464-0597.1990.tb01035.x

Heiligenstein, E., Guenther, G., Hsu, K., & Herman, K. (1996). Depression and academic impairment in college students. *Journal of American College Health,* 2, 59-64. Doi.org/10.1080/07448481.1996.9936863.

Hoyt, L.T., Cohen, A.K., Dull, B., Castro, E.M., & Yazdani, N. (2021). "Constant stress has become the new normal": stress and anxiety inequalities among U.S. college students in the time of COVID-19. *Journal of Adolescent Health,* 68(2), 270-276. Doi.org/10.1016/jjadohealth.2020.10.030

Ickes, M.J., Brown, J., Reeves, B., & Zephyr, P.M.D. (2015). Differences between undergraduate and graduate students in stress and coping strategies. *Californian Journal of Health Promotion,* 13(1), 12-25. https://doi.org/10.32398/cjhp.v13i1.1810

*I'm so stressed out!.* National Institute of Mental Health. (2020). Retrieved from: https://tinyurl.com/2p93p7pu

Kahill, S. (1988). Symptoms of professional burnout: a review of the empirical data. *Canadian Psychology, 29*(3), 284-297. https://doi.org/10.1037/h0079772

Kim, B., Jee, S., Lee, J., An, S., & Lee, S.M. (2017). Relationships between social support and student burnout: a meta-analytic approach. *Stress and Health, 34*(2), 127-134. https://doi.org/10.1002/smi.2771

Koeske, G.F., & Koeske, R.D. (1989). Construct validity of the Maslach Burnout Inventory: a critical review and reconceptualization. *The Journal of Applied Behavioral Science, 15*(2), 131-132. https://doi.org/10.1177/0021886389252004

Kristensen. T.S., Borritz, M., Villadsen, E., & Christensen, K.B. (2007). The Copenhagen Burnout Inventory: a new toll for the assessment of burnout. *Work & Stress: 19(3),* 192-207. https://doi.org/10.1080/02678370500297720

Lane, C. (5 November 2021). *How to cope with academic burnout at university.* Top Universities. https://tinyurl.com/23skpp8y

Leiter, M.P. (2005). Perception of risk: an organizational model of occupational risk, burnout, and physical symptoms. *Anxiety, Stress, and Coping, 18*(2), 131-144. https://doi.org/10.1080/10615800500082473

Litosseliti, L. (2003). *Using Focus Groups in Research.* A&C Black, https://tinyurl.com/598h5hhd

Maslach, C. & Jackson, S.E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior,* 2(2), 99-113. doi.org/10.1002/job.4030020205

Mheidly, N., Fares, M.Y., & Fares, J. (2020). Coping with stress and burnout associated with telecommunication and online learning. *Front. Public Health.* doi: 10.3389/fpubh.2020.574969

Montero-Marin, J., Prado-Abril, J., Demarzo, M.M.P., Gascon, S., & Garcia-Campayo, J. (2014). Coping with stress and types of burnout: explanatory power of different coping strategies. *PLoS ONE 9*(2). https://doi.org/10.1371/journal.pone.0089090

Muheim, F. (2013). Burnout: history of a phenomenon. *Burnout for Experts.* Springer, Boston, MA. https://doi-org.pitt.idm.oclc.org/10.1007/978-1-4614-4391-9_3

Neumann, Y., Finaly-Neumann, E., Reichel, A. (2016). Determinants and consequences of students' burnout in universities. *The Journal of Higher Education:* 61(1). https://doi.org/10.1080/00221546.1990.11775089.

Perlman, B., & Hartman, E.A. (1982). Burnout: summary and future research. *Human Relations, 35*(4), 283-305. https://doi.org/10.1177/001872678203500402

Pisarik, C.T. (2009). Motivational orientation and burnout among undergraduate college students. *College Student Journal:* 43(4).

Reid, D.J. & Reid, F.J.M. (2005). Online focus groups: an in-depth comparison of computer mediated and conventional focus group discussions. *International Journal of Market Research,* 47(2), 131-162. https://doi.org/10.1177/147078530504700204

Rigg, J., Day, J., & Adler, H. (2013). Emotional exhaustion in graduate students: the role of engagement, self-efficacy, and social support. *Journal of Educational and Developmental Psychology,* 3(2), 138-152. doi:10.5539/jedp.v3n2p138

Salmela-Aro, K., Kiuru, N., Leskinen, E., & Nurmi, J. (2009). School burnout inventory (SBI). *European Journal of Psychological Assessment,* 25(1). https://doi.org/10.1027/1015-5759.25.1.48

Samara, R. (2018.) *Brief history of burnout.* The BJM. https://tinyurl.com/2kypjp3e

Searing, L. (20 April 2020). *60 percent of U.S. adults are feeling daily stress and worry.* The Washington Post. https://tinyurl.com/49v3bsvn

Threlkeld, K. (2021, March 11). *Employee burnout report: COVID-19's impact and 3 strategies to curb it.* Indeed. https://tinyurl.com/mrxdbne9

van Dam, A. (2021). A clinical perspective on burnout: diagnosis, classification, and treatment of clinical burnout. *European Journal of Work and Organizational Psychology, 30*(5), 732-741. DOI:10.1080/1359432X.2021.1948400

Vedhara, K. et al. (2003). An investigation into the relationship between salivary cortisol, stress, anxiety, and depression. *Biological Psychology,* 62(2), 89-96. https://doi.org/10.1016/S0301-0511(02)00128-X

Walburg, V. (2014). Burnout among high school students: a literature review. *Children and Youth Services Review:* 42(1), 28-33. https://doi.org/10.1016/j.childyouth.2014.03.020

Warlick, C.A., Farmer, N.M., Van Gorp, A., & Patterson, T. (2021). Comparing burnout between graduate-level and professional clinicians. *Training and Education in Professional Psychology,* 15(2), 150-158. https://doi.org/10.1037/tep0000328

Williamson, K., Lank, P.M., Cheema, N., Hartman, N., & Lovell, E.O. (2018). Comparing the Maslach Burnout Inventory to other well-being instruments in emergency medicine residents. *Journal of Graduate Medical Education,* 10(5), 532-536. doi:10.4300/JGME-D-18-00155.1

Woolston, C. (2020). Signs of depression and anxiety soar among US graduate students during pandemic. *Nature,* 585(7823), 147-148. https://tinyurl.com/ywkr62dv

*42 Worrying Workplace Stress Statistics.* (25 September 2019). The American Institute of Stress. https://tinyurl.com/yckzzsk8