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North Carolina Public School Educator Perceptions of Teaching During COVID and Impacts on Burnout

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NORTH CAROLINA PUBLIC SCHOOL EDUCATOR PERCEPTIONS OF TEACHING DURING COVID AND IMPACTS ON BURNOUT

By
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Approval Page

This dissertation was submitted by Leah Massey Huttlinger under the direction of the persons listed below. It was submitted to the Gardner-Webb University College of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

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Abstract

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Educators in North Carolina have been burdened with many different negative stressors, such as low pay, increasing class sizes, and violence in the classroom, and the COVID-19 pandemic has only added to the role of the educator. Current research suggests an inevitable exodus of teachers due to the increased stress brought by the pandemic. Through this mixed methods study, I sought to examine relationships between COVID-19 stress, physical and mental health symptoms, and occupational burnout. Using Pearson's correlation coefficient, I determined statistical relationships between specific domains of COVID stress and the physical and mental health of North Carolina educators. There was also statistical significance between specific domains of COVID stress and the emotional exhaustion and depersonalization domains of occupational burnout. I also interviewed North Carolina educators about their experiences of teaching during the pandemic. This study offers concrete evidence of COVID stress correlating to negative physical and mental health symptoms and results suggest increased perceptions of burnout.

Keywords: COVID-19, stress, physical health, mental health, occupational burnout, North Carolina educators

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Chapter 1: Introduction

When we think about educators around the world, we cannot help but consider the potential impact these educators have on students. According to Roser (2017), there were 84.23 million educators globally from the preschool level to post-college level in 2014; however, Roser also stated during the same time, the estimated number of students worldwide was 1.29 billion. Educators teach our young people and prepare them to enter as competent and productive adult members of society. With teachers in front of such a massive number of students every day, it is crucial to consider the working conditions and well-being of educators. Educator working conditions and rates of attrition have long been subjects of interest for researchers around the world. Local education agencies (school districts), regions, and states would be remiss to choose to ignore the current plights of educators. Because burnout is common in occupational domains where individuals have frequent or prolonged contact with others, education is one of the highest-risk professions for individuals to experience burnout (Chervinski, 2021). Chervinski (2021) also noted educational burnout stems from chronic, unabated stress. Teaching is a high-stress profession made only more stressful by the novel coronavirus pandemic (COVID-19; Chervinski, 2021). As of the fall of 2021, many schools across the nation are unable to staff open teaching positions and are unable to hire enough substitute teachers to fill empty classrooms (Dickler, 2021).

There is an urgent need for this study because to date, there is little quantitative or qualitative data on educator perceptions of teaching during the COVID-19 pandemic (Chervinski, 2021; Gugliemi & Tatrow, 1998). There is even less data on North Carolina (N.C.) educators during their COVID-19 teaching experiences. As attrition rates for

educators climb, we must determine if the pandemic is contributing to mental and physical ill-health and feelings of occupational burnout. Chervinski (2021) also noted there is little qualitative research currently on educator experiences and perceptions of burnout. In order for research to continue, we must first establish whether or not the pandemic is having an effect (perceived or real) on educators' physical and mental health as well as their feelings of burnout secondary to teaching during the time of COVID-19. Increasing awareness of educator experiences will enable principals, district leaders, and state leaders–even leaders at the federal level–to more accurately and quickly diagnose educator needs with the goal of reducing or preventing occupational burnout.

Background

Internationally, studies have shown time and time again that education is a stressful occupation (Gugliemi & Tatrow, 1998; Kyriacou, 1989; Seibt et al., 2012). In the United Kingdom, Born (2008, as cited in Rothi et al., 2010) found one third of all educators reported feeling their job was extremely stressful. Arvidsson et al. (2016) found professionals in Sweden at the highest risk of stress-related disorders were educators. Tang (2020, as cited in Chen et al., 2020) studied educators working in rural China and found a significant positive correlation between occupational culture (e.g., long hours, high class sizes) and low job satisfaction. Researchers have consistently found educators around the world report feeling professionally overburdened and stressed out on the job.

Elyashiv (2019) found between 20% and 50% of educators around the globe leave education within their first 5 years of teaching. According to Bowles and Arnup (2016, as cited in Gray et al., 2017), one third of Australian educators in their first 10 years of teaching indicated they intended to leave the field; of that survey population, one quarter

of educators reported they planned to leave education within the next 2 years. Lundqvist et al. (2014) predicted Sweden would lose 20% of its teaching force due to turnover and attrition by 2020, findings that are echoed worldwide (Gugliemi & Tatrow, 1998; McCormick, 1997; Seibt et al., 2012; Zhang et al., 2019). Research continues to highlight global consistencies in educator feelings of being overworked and stressed out. More so, research on educator experiences of teaching during the COVID-19 pandemic is still in its infancy, and data are developing and continuing to be published.

Statement of the Problem

Teaching can be a stressful profession, and studies have linked educator stress to decreased mental health; attrition; decreased effectiveness; and ultimately, increased burnout (Holt et al., 2020). There are many anecdotal reports of educators feeling overworked and underpaid and having felt that way for years (Dickler, 2021). The COVID-19 pandemic is another factor in a long list of complications for the teaching profession, only increasing the number of challenges educators already faced before the pandemic. These new challenges include teaching remotely and in-person at the same time, working with students after lengthy quarantine periods, and communicating effectively in masks, all in combination with the worry of becoming infected with COVID-19. Many teachers also feel as if they lack autonomy in their classroom or their school building (Brown, 2020). Educators under consistent, unrelenting professional stressors have been known to experience burnout, which has been linked to negative physical and mental health outcomes (Holt et al., 2020). Historical research describes myriad societal issues prevalent during pandemics, and they mirror the issues educators have been facing in the classrooms during the COVID-19 pandemic: contamination

reduction, hyperawareness of proximity to others, and financial burdens for cleaning supplies, to name a few (Mardon et al., 2020). Much research exists on the connection between occupational burnout, educator satisfaction, and educator retention, and decades of research have found occupational stress is negatively correlated with physiological and psychological well-being (Cox, 1975, as cited in Holt et al., 2020). Due to the newness of the COVID-19 pandemic, there is little research yet on N.C. public school educator perceptions of the effect of the pandemic on their health or on the impact of educators' intent to remain in education. Through this study, I aimed to gather data on educator perceptions of any physical and mental problems they have experienced while teaching during the COVID-19 pandemic as well as rates of occupational burnout. Through this data collection, I aimed to see if there were any quantitative statistical associations between COVID stress, physical and mental symptoms, and occupational burnout through Pearson's correlation coefficient analysis. I also gathered and coded thematic qualitative data from willing participants so they had an opportunity to share their stories.

Definition of Key Terms

The following operational definitions will be used throughout this study.

Burnout

Defined by Arvidsson et al. (2016) as, "an undesirable psychological state characterized by exhaustion, cynicism, and feelings of reduced professional efficacy" (p. 823). Educator burnout is a major cause of attrition from the profession (Chervinski, 2021).

Job Satisfaction (Satisfaction)

When an individual is able to meet perceived job demands and requirements, they

are likely to have high job satisfaction. If an individual has job demands (perceived or real) they cannot meet or low levels of decision latitude (autonomy and control), they will be more likely to experience job strain and have low job satisfaction (Gugliemi & Tatrow, 1998).

Mental Health

Refers to individuals' well-being enabling them to cope effectively with typical life stressors, make social and emotional adjustments to events appropriately, and contribute productively as a member of society (Ivey, 2019; Zalat et al., 2017).

Physical Health

The World Health Organization (WHO, 2020) defined physical health as "a state of physical…well-being and not merely the absence of disease or infirmary" (para. 1).

Stress

In the context of education, stress is defined as "enduring conflicts of educational processes and structures with teachers' personal needs and aspirations" (Tang et al., 2001, p. 888). Some confusion exists around the interchangeability of the terms stress and burnout; for example, in some studies, stress and burnout predict health outcomes, while in other studies, they are "outcome variables" along with health outcomes (Gugliemi & Tatrow, 1998, p. 87). However, in this study, the terms must be considered separately. Chronic stress occurs when duration, frequency, and intensity are high and the stressor(s) is (are) constant (Slipack, 1996, as cited in Menghi, 2018).

Research Questions

The following research questions guided this study:

1. What are the relationships between COVID-19 stress and the physical and

mental health of N.C. K-12 public school educators?

2. What are the relationships between COVID-19 stress and N.C. K-12 public school educator burnout?
3. What are N.C. K-12 public school educator perceptions of the impact of teaching during the COVID-19 pandemic?

Since this is a mixed methods research study and I am gathering both quantitative and qualitative data, I will include hypotheses to address two of the three research questions. The hypotheses predict there to be a relationship between teaching during COVID-19 and educators' physical and mental health as well as a positive correlation between teaching during COVID-19 and educator feelings of occupational burnout.

Hypothesis 1: Teaching during the COVID-19 pandemic will be shown to significantly impact N.C. educator physical and mental health.

Hypothesis 2: Teaching during the COVID-19 pandemic will be shown to significantly impact N.C. educator burnout.

Purpose and Significance of the Study

Little data exist examining the potential impacts of COVID-19 stress on educators in the United States (U.S.), and no studies to date explore COVID-19 stress specific to N.C. educators. The purpose of this study was to add to the growing body of literature exploring the impact of the COVID-19 pandemic on N.C. educators. No studies like this currently exist to investigate possible connections between COVID-19 stress, physical and mental symptoms, and experiences of occupational burnout in N.C. educators.

Educators comprise one of the largest professions worldwide, and much research has been done on the connection between the profession and physical and psychological

health problems (Zalat et al., 2017). However, many gaps, including the perceived impact of the COVID-19 pandemic on educators, exist in the research. According to Soares et al. (2014), there exists little research on the mental health of educators. What is more, little work has been done to understand the combined effects of teaching during a global pandemic, educator perceptions of teaching during this unprecedented time, and the impact of pandemic stress on teacher burnout. While extensive literature is available regarding educator satisfaction, there is a current gap in the literature on N.C. educators specific to the impacts of the COVID-19 pandemic. According to Gugliemi and Tatrow (1998), "the study of teacher stress and burnout appears to still be in its infancy, and it lags far behind the parent occupational stress literature" (p. 82). Additionally, Chen et al. (2020) acknowledged the lack of current research on the relationship between educator job satisfaction and burnout. Through this study, I seek to contribute to the body of research on educator stress as it relates to COVID-19.

The objective of conducting a mixed methods study is twofold. A quantitative study investigating the prevalence and strength of COVID-19 stress and physical and mental symptoms in educators added to growing data exploring occupational effects of the COVID-19 pandemic. A qualitative study on educators' experiences teaching during the COVID-19 pandemic provided them an opportunity to tell their stories and have their voices heard. This study contributes to the existing body of research on educator stress and burnout. I also aimed to begin a conversation about the connections (if any) between the mental and physical health of educators and how they have been impacted by teaching during the COVID-19 pandemic. This research could potentially shape future educational practices and policies and increase the effectiveness of the discipline. I also

added to the small but growing amount of available research specific to public school educators in N.C. I aimed to examine rates of COVID-19 stress, rates of reported physical and mental symptoms, and feelings of occupational burnout by N.C. public school K-12 educators. The results of this mixed methods study provided relevant quantitative and qualitative data to N.C. school districts and district leaders in order to begin assessing educators' potential likelihood of burnout from COVID-19 pandemic stress and possible resulting physical and mental health problems.

Gaining a deeper understanding of the relationship educators are perceiving between their professional roles, health status, and teaching during the pandemic may begin to help solve the problem of teacher attrition by giving frustrated, exhausted, and frightened teachers a chance to voice their experiences (Harding et al., 2019). According to Chervinski (2021), educators who experience high levels of stress and poor well-being reported feeling less equipped and able to support students through their problems.

Study Framework

I used a combination of existing theoretical frameworks to create the conceptual framework for this study. Because this study relied on participants to self-report on their experiences of the human condition, it was essential to adopt a human-centered approach to any conceptual framework. To keep this study human centered, I sought to understand the participants' perceptions and emotions through personal interviews while still collecting quantitative data. This study also drew heavily on the psychodynamic theory in which an individual's current choices and behaviors are explained in the context of prior experiences and motivations (American Psychological Association [APA], 2021. According to APA (2021), actions are viewed as originating from instinct, biology, and

"attempts to resolve conflicts between personal needs and social requirements" (para. 4). I utilized theoretical frameworks involving stress, work environment, and how individuals perceive events as the basis for this study. Additionally, I included theoretical frameworks relating stress to physical and mental outcomes exploring frameworks related to sudden, negative, large-scale change and related these to the COVID-19 pandemic. Ultimately, I connected existing theoretical frameworks on stress, work environment, and individual perceptions and integrated physical and mental stress theoretical models within the framework of a sudden, large-scale traumatic event (i.e., the COVID-19 pandemic). Lastly, I presented a conceptual model integrating these theoretical frameworks.

Theoretical Framework

Lazarus and Folkman (1984) defined the stress framework as the relationship between stress and the context of that stress. They stated stress is dependent on and determined by an interaction between an individual's specific characteristics (for example, past experiences and resources) and the context (for example, time in history, geographical location, cultural norms, and mores; Gonzalez et al., 1990; Whitehead, 2020). This is often referred to as cognitive appraisal: the way an individual reacts to and responds to stressors in their life (Gonzalez et al., 1990; Lazarus & Folkman, 1984). Lord and Foti (1986, as cited in McCormick, 1997) posited individuals use cognitive frameworks to make sense of relationships and interactions between oneself, the work environment, and stressors. Lazarus (1991, as cited in Spilt et al., 2011) introduced a model of interpersonal relationships being a mediator of stress and increasing coping mechanisms of individuals. This framework relates to my current study because of the focus on educators' individual situations and perceptions while teaching during COVID-

19.

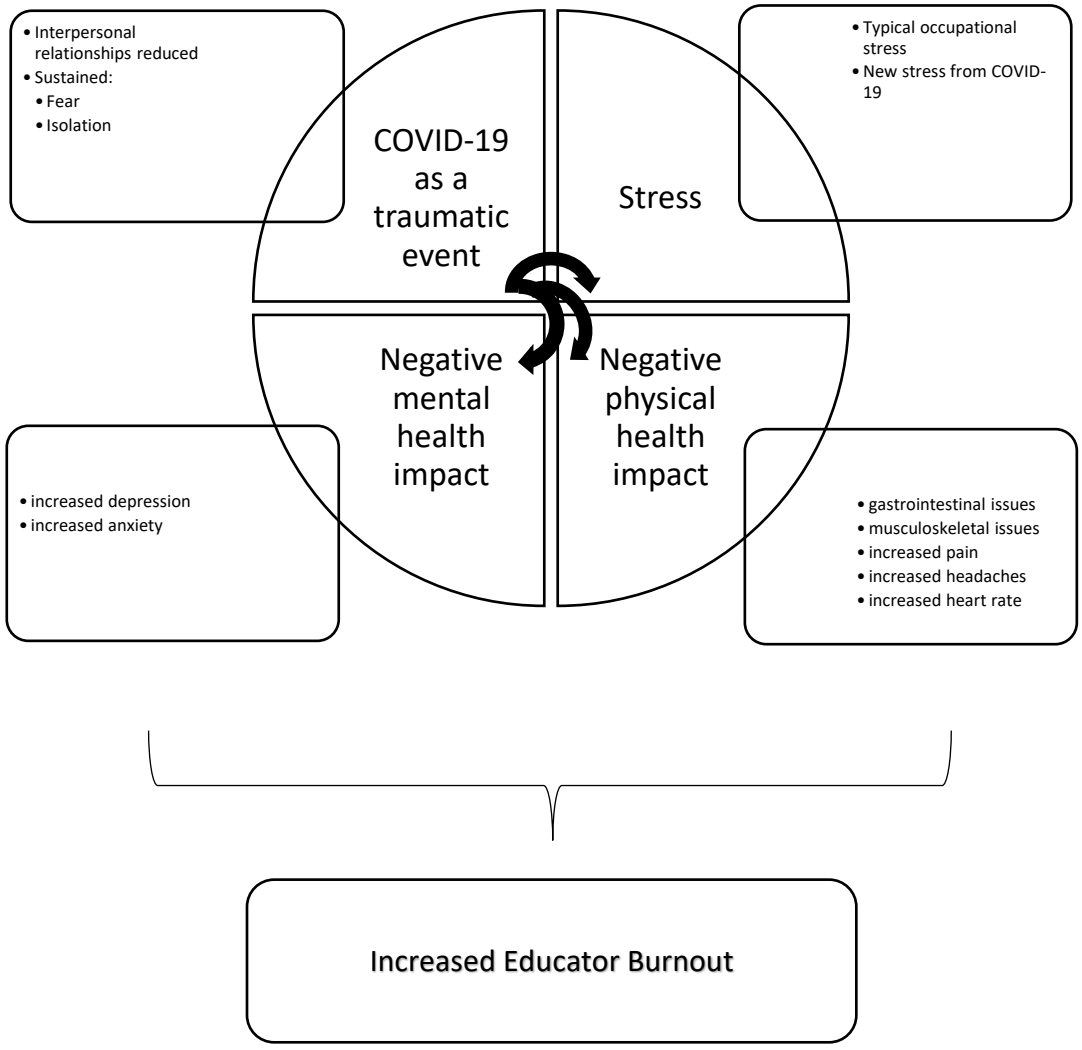
Gugliemi and Tatrow (1998, as cited in Tang et al., 2001) have published much research on stress-strain interaction models, describing the interaction between working environments, the individuals, and the specific strains or stressors. Tang et al. (2001) noted individual educator perceptions, backgrounds, and levels of tolerance for and vulnerability to stressors are stress-strain modifiers to consider. Wu (2020) noted the relationship between high levels of occupational stress experienced by educators and resulting harm to their physical and mental health. Occupational stress experienced by educators influences other areas of life, including physical and mental health (Wu, 2020). Lazarus and Folkman (1984) developed a theory of the relationships between health and stress where the effects of stress are measurable through physical and mental health outcomes. While it is extremely difficult to determine causal relationships because of the sheer volume of potential variables, researchers agree there is a connection between stress and health (Gonzalez et al., 1990). This is the bio-psycho-social model, noting the connection between one's physiology and what is happening outside of the body in their environment by way of stress. This model is crucial to my current study as I explored how educators perceive stressors related to COVID-19, whether they perceive to have experienced negative physical and/or mental symptoms, and whether any connections can be made between feelings of COVID-19 stress and health.

Conceptual Framework

I combined these theoretical ideas into a conceptual framework, as shown in Figure 1.

Figure 1

Study Framework



This conceptual model shows COVID-19 as a preceding event, triggering increased rates of stress among N.C. educators. Facets of the COVID-19 pandemic increasing educator stress may include increased workloads, reduced ability to nurture relationships with students and colleagues, and fear of COVID-19 contamination and disease. This sustained level and duration of increased stress may, in turn, increase rates of poor physical and mental health. As a result, these factors will combine to increase

feelings of educator burnout.

Another way to describe this framework is by describing the relationships between these variables. I anticipated educators have experienced and will continue to experience COVID stress, measured by COVID Stress Scales (CSS). Additionally, I anticipated educators would report high rates of physical and mental symptoms. Finally, I predicted these factors combined–COVID stress and increased poor physical and mental health–would lead to increased rates of feelings of educator burnout. Chervinski (2021) noted the connections between feelings of educator burnout and the desire by educators to leave the profession, suggesting a link between occupational burnout and attrition. Akar (2018, as cited in Chervinski, 2021) noted occupational stress experienced by educators leads to occupational burnout. Research abounds about the connections between experiences of burnout and educator attrition, leading to educator shortages in areas across the nation and across the globe (Arvidsson et al., 2016; Brackett & Cipriano, 2020; Bringle, 2020; Brown, 2020; Chervinski, 2021; Golodryga & Pomrenze, 2021; Lahelma et al., 2012; Lundqvist et al., 2014; Miller & Flint-Stipp, 2019; Morgan, 2021; Morrison, 2019; Mulvahill, 2019; Nguyen & Springer, 2019; Shami et al., 2017; Strauss, 2017; Sutcher et al., 2016; Ward, 2019; Will, 2021; Wood & McCarthy, 2002). Researchers disagree, however, whether N.C. educators are actually leaving the field in large numbers (Bringle, 2020; Golodryga & Pomrenze, 2021; Morgan, 2021; Morrison, 2019; Mulvahill, 2019; Nguyen & Springer, 2019; Strauss, 2017; Sutcher et al., 2016; Turner, 2016; Ward, 2019; Will, 2021). Through this study, I sought to add clarity to the intent of N.C. educators to leave the profession. There is a gap in data, however, quantifying the relationship between burnout and attrition. I also compared historical

attrition data from N.C. educators to current, pandemic era attrition data.

Limitations of the Study

Limitations are defined as outside influences the researcher cannot control (Tang et al., 2001). This study has several limitations potentially impacting the generalizability of its findings. One limitation is the emotional connection many educators have to themes of stress, burnout, and health (Gugliemi & Tatrow, 1998). Because of this strong connection, the risk exists that educators who participate in this study "might cooperate to confirm" (Gugliemi & Tatrow, 1998, p. 87) research hypotheses. Since the data collected via online surveys relied entirely on participant honesty through their self-reporting, I consider this potential confirmation bias a limitation of the study. There are many well-known concerns with self-report instruments, including retrospective bias, criterion contamination, and common method variance (Gugliemi & Tatrow, 1998; Tofthagen, 2012).

I cannot discount the vital role cognitive appraisal plays in individuals' perceptions of stress and their ability to recall past events' influences. Cognitive appraisal, another potential limitation, simply refers to how an individual perceives events or stimuli in their environment; cognitive appraisal also determines an individual's emotional regulation following the event or stimulus (Sakakibara & Endo, 2015). A third limitation related to participant responses on the survey instrument is recall bias, which occurs when there are errors in participants' memory accuracies and, like confirmation bias, is another potential influence and limitation (Spencer et al., 2017). Self-report instruments are a key limitation impacting this study's validity due to the reasons self-report is subjective: cognitive appraisal and recall bias. Bohleber (2010) acknowledged

the scientific and political debate about the "validity of memories and whether there is a specific traumatic memory in which memories are preserved differently from those in explicit autobiographical memory" (para. 16). There is little scientific consensus on "how a forgotten memory can return and whether traumatic memories are processed differently" (Bohleber, 2010, para. 17). Asking participants to self-report is another limitation as there are many potential concerns with self-reporting and the challenges are well-known to researchers. According to Garcia and Gustavson (1997), some of the negative aspects involved with self-report include individual inaccuracy with reporting physical symptoms (i.e., heart rate, blood pressure), reporting pain (i.e., since there are multiple dimensions involved, such as intensity, frequency, current psychological factors), and memory-related concerns such as false positives and false negatives. Additionally, another concern associated with self-report is confirmation bias. This type of bias occurs when study participants seek to affirm researcher beliefs (Garcia & Gustavson, 1997).

One method of collecting reliable data on mental and physical conditions affecting educators is to gather medical and/or health data directly from educators' medical providers. However, generally, researchers have no right to patients' health records (Johns Hopkins University, 2005). There are four ways to obtain permission to access patient health records; due to the complexity of the process, I decided to remain with a self-report study. Other concerns with self-report studies include recall period and selective recall.

Because I asked participants to consider their experiences beginning with the N.C. public school shutdown in approximately March 2020 to June 2022, it is important to

acknowledge the wide length of time from which participants may have remembered and reported health events and experiences. This time frame is another limitation and may have allowed for increased error in participant reporting due to recall bias; that is, a participant's difficulty in producing accurate memories (Garcia & Gustavson, 1997).

According to Wigdor and Green (1991), criterion contamination is an additional limitation and can impact data when "construct-irrelevant factors influencing the criterion measure are correlated with predictors" (p. 143). We must understand the relationship between a predictor and criterion measure in order to accurately describe said relationship. Furthermore, this general area of study presents challenges due to the sheer number of factors potentially influencing educators. For example, perception by the individual, duration of a stressful event, timing or intensity of an event, or concurrent events can all vary from individual to individual and have different degrees of mitigating or exacerbating circumstances as well (Gugliemi & Tatrow, 1998). This implies the presence of many potential confounder variables.

Because of the essence of human nature, exact predictors and outcomes and exact causes and effects were difficult to determine in this type of study. While I did not attempt to determine predictors, I sought to explore the relationship between educator physical and mental health experiences during the COVID-19 pandemic and feelings of educator burnout.

Delimitations of the Study

Delimitations are intentional choices the researcher makes in order to provide boundaries for a study (Simon & Goes, 2013). The first delimitation is the educators invited to take part as participants. To keep the study sample manageable, I solicited

participation from only N.C. public school educators who teach in kindergarten to 12th-grade (K-12) schools. I considered collecting data from only middle grades teachers or only certain districts in N.C. to further delimit the study; however, I rejected this stricter approach with hopes of giving more K-12 educators in N.C. an opportunity to share their experiences and potentially affect positive change. I aimed to have at least 100 participants. I did not have 100 participants complete the survey, even after requesting participation three times with social media group administrator approval. I closed the survey after 5 weeks with 91 participants.

Another delimitation is the instruments I selected to use, at the rejection of others. I used a combination of the CSS (authored by Taylor et al., 2020), Patient Health Questionnaire (PHQ), and Maslach Burnout Inventory-Educator Survey (MBI-ES; authored by Maslach & Jackson, 1986). I chose these three items because of their alignment with my research questions. The CSS measured the level of perceived stress educators feel due to the COVID pandemic. I examined Fimian's (1984) Teacher Stress Inventory but rejected it as it focused more on stress than burnout. I felt it did not align as closely with my research questions and goals, as I wanted to focus specifically on COVID-19-related stress and educator-related burnout. I chose the PHQ to measure participants' physical symptoms while teaching during the COVID-19 pandemic. I considered shorter PHQs but ultimately chose the full survey as it encompasses both physical and mental health symptomology. I chose the MBI-ES because it is well known, widely used, and has good validity and reliability (Chervinski, 2021).

My choice to use the CSS, PHQ, and MBI-ES may have illustrated instrumentation threat. According to Tofthagen (2012), instrumentation threat occurs

when the intentional selection of measurement tools influences the results of a study. The CSS are new measures with no documented use in N.C. The length of the PHQ may have caused survey fatigue in some participants, but I felt the longer PHQ more comprehensively covered the physical and mental symptoms on which I sought to gather data. While I intentionally selected the three instruments to use, I must acknowledge the selections may have impact results through a combination of instrumentation threat and confirmation bias.

Assumptions

I conducted this study with several assumptions or things I believed to be true. First, I assumed participating educators would be as honest as possible when completing the survey and participating in the interview. Another assumption was educators were from N.C., a requirement for participation relying on honesty of educator self-report. A third assumption was enough N.C. educators would voluntarily participate in both the survey portion and interview portion to generate enough data to be meaningful.

Organization of the Study

The study is organized into five chapters. Chapter 1 introduced the study and major decisions I made about the parameters of the study. Chapter 2 provides a comprehensive review of applicable and related literature. The literature review briefly covers political influences on education, information on the current teaching climate, and working conditions in the U.S. as well as in the southeastern U.S. The literature also narrows down these themes within the context of education in N.C. I also cover educator satisfaction, educator stress, and educator health. I explore educator burnout and educator attrition. Finally, I explore pandemics throughout history, the current COVID-19

pandemic, and impacts on society as well as impacts on educators. Chapter 3 describes the study methodology. Chapter 4 presents the data collected. Chapter 5 explains and interprets the data and discusses possible directions for future studies.

Chapter 2: Literature Review

Introduction

Chapter 2 contains a comprehensive review of literature providing a framework of the connections between educator working conditions and educators' physical and mental health and experiences of occupational burnout. This exploration begins at the national level and narrows down to southeastern states before discussing N.C. specifically. I also share research on how past pandemics affect populations of people and the general effects of COVID-19 on society since the beginning of the COVID-19 pandemic. Finally, I explore reports of educator attrition.

In order to examine literature related to educator stress, educator burnout, and educator attrition, I conducted a search for peer-reviewed articles falling within the timeframe of 2000-2020 via databases in the Gardner-Webb University library as well as open access articles via Google Scholar. Because educator data are published at different intervals (biannually, quadrennially, etc.), it was important to include a range of data to allow me to examine any trends over time. I used the following search terms to find articles specific to this study: *educator stress, educator burnout, educator mental health, educator physical health, history of pandemics, COVID-19 stress, and educator attrition*. Variations of these terms were used to ensure exhaustive search results, and I also used the same terms with variations of "in North Carolina" to retrieve any research relevant to N.C. educators.

The purpose of this study was to examine possible relationships between educator perceptions of working during COVID-19, its impact on their physical and mental health, and potential occupational burnout. First, I collected data on educators' levels of COVID

stress and physical and mental health during the past 26 months. Educators were asked to consider their physical (somatic) and mental (psychological) symptoms from the beginning of the statewide shutdown of schools (March 2020) to May or June 2022, depending on when participants completed the survey. Second, I offered participating educators an opportunity to voice their experiences via interviews seeking information about their individual experiences. Through this work, I attempted to fill gaps in current understanding of large-scale traumatic events (in the context of the COVID-19 pandemic) and the impact on educator burnout on N.C. educators.

Politics in Education

Public education is largely mandated by policies enacted at the national level, and these policies are written to support educators and students in being successful in attaining myriad educational goals (Chervinski, 2021). However, these policies have brought about challenges in the educational system at the school level and individual educator level. Gray et al. (2017) noted that increased scrutiny and diminished autonomy through federal political reforms have all likely contributed to increasing educator burnout. According to Dee and Jacob (2010, as cited in Holt et al., 2020) and Firestone (2014, as cited in Holt et al., 2020), policies enacted at the federal level have "increased the credentials required for teaching and added a variety of accountability measures tied to student achievement" (p. 4). One such policy is the Elementary and Secondary Education Act of 1965 (ESEA). ESEA was a foundational piece of President Johnson's "War on Poverty," and the legislation sought to provide critical funding for low-income schools and students in the midst of continued, complicated attempts at desegregation following the *Brown v. Board of Education* (1954) decision (Paul, 2016; Ramsey, 2017;

Zelizer, 2015). The intent of ESEA (later reauthorizations named it No Child Left Behind and Every Student Succeeds Act) was to provide "equal access to quality education" (Jeffrey, 1978, as cited in Paul, 2016, para. 1; Hanna, 2005). More specifically, this act provided funding to schools and districts with high percentages of students from low-income families. This legislation was one piece of President Johnson's idea of a "Great Society" and included reforms to "reduce social inequality" (Zelizer, 2015, para. 4) to positively impact education through social and community improvements. However, the intended positive effects have yet to be seen as the challenges faced by low-income families are multi-faceted and complex (Matsuba & Williams, 2020). More recently, No Child Left Behind and Race to the Top in 2009 further taxed already stressed school districts by emphasizing high stakes testing and basing educator evaluations on the results (Richards et al., 2016, as cited in Chervinski, 2021).

These federal policies, however, ended up largely focusing on students' academic achievements (using scores rather than academic growth as a measure of success) and have had a deleterious impact on educators; threatening their professional identities, their mental well-being, and their livelihoods (Holt et al., 2020; Rothi et al., 2010). People who become educators often want to make a difference in all aspects of students' lives: socially, emotionally, and academically. When teachers feel restricted by federal policies, feelings of professional identity, self-esteem, and self-efficacy are diminished (Rothi et al., 2010). According to Holt et al. (2020), these changes at the federal level combined with decreasing respect and wages "suggest that teachers' mental health, relative to their peers, might have changed over time" (p. 1).

Current Teaching Climate

Teaching has long been a profession held in high esteem by many cultures around the world, but this high regard has been eroding in the U.S. (Rothi et al., 2010). Within the past 3 decades, however, U.S. educators have seemingly become the scapegoats for society's woes: poverty, violence, and students ill-prepared for adulthood. With ever-increasing demands placed on educators, combined with low pay, politics acting as an influence in the classroom, and the threat of gun violence, many U.S. public school kindergarten through 12th-grade educators are leaving their district, leaving their state, or leaving education altogether (Matsuba & Williams, 2020). According to McKinney et al. (2007, as cited in Vilella et al., 2020), approximately half of teachers in the U.S. leave education within the first 3 to 5 years, and Mulvahill (2019) stated between 19% and 30% of educators leave teaching within the first 5 years of entering the profession. This range mirrors state-specific data: in Georgia, for example, 44% of educators leave within the first 5 years (Owens, 2015); in New York City middle schools, 66% of educators leave within the first 5 years (New York University Steinhardt, 2017). In Texas, 10% of teachers quit after their first year. Of those, 30% are either no longer teaching or have left the state (Zelinski, 2019). Forty percent of educators in Arkansas leave the profession after 5 years (Strauss, 2017). According to Darling-Hammond et al. (as cited in Strauss, 2017), one science department in Newark, New Jersey, had 15 positions and within 6 years had replaced 16 educators within the department, with 61% of principals having reported a substitute teacher in the classroom due to a lack of certified teachers. The trend of a lack of certified teachers is in the southeast as well. In one district in Virginia, sixth-grade students did not have a certified math teacher at any point during the 2016-2017

academic year (AY; Darling-Hammond et al., as cited in Strauss, 2017). In a regression analysis of U.S. teacher attrition, Sutcher et al. (2016) found when controlling for school, teacher, and student variables, educators who are less prepared to teach, who earn a lower salary, and who perceive low levels of administrator support are significantly more likely to leave the job or the field altogether. They stated annual turnover rates to range from 8% (in Utah) to 24% (in Arizona) and, overall, to be highest in the southern regions of the U.S. and lowest in the northeast (Strauss, 2017).

To compound the rates of attrition, many educators are not recommending the profession to others. Two of three teacher respondents to a survey conducted in 2015 were unlikely or very unlikely to suggest teaching to high school graduates in Georgia (Owens, 2015). Of the total respondents, only 2.7% stated they would recommend teaching as a profession (Owens, 2015). This is likely due to the fact that according to Sutcher et al. (2016), U.S. teachers work more hours per week and have less planning time when compared to other similar countries. Teachers in the U.S. also reported above-average class sizes and more high-poverty students than in other similar countries.

Educator Working Conditions

Fooladvand's (2005, as cited in Shami et al., 2017) research of occupational conditions indicated there to be a significant relationship between the working atmosphere and an employee's mental health. Levels of stress, educator-reported job satisfaction, and occupational commitment have all been found to be "correlated with one another and with…educator attrition" (Nelson et al., 2001, p. 123). Nguyen and Springer (2019) reviewed scholarly reports and analyzed effects across 120 studies and found educator satisfaction largely correlated with the decision to remain in the profession.

Additionally, “various measures of school organizational characteristics–such as student disciplinary problems, administrative support, and professional development” strongly impact rates of educator attrition (Nguyen & Springer, 2019, para. 6). Nguyen and Springer found external factors, such as high numbers of student disciplinary problems, perceived lack of administrative support, and gaps in professional development, to be highly associated with educator attrition.

Education in the U.S.

Garcia and Weiss (2019a) studied certification, experience, and education data comparing educators in low-poverty schools and high-poverty schools. They compiled data from the Schools and Staffing Survey (2011-2012) and Teacher Follow-Up Survey (2012-2013) from the National Center for Education Statistics (NCES) to compare percentages of U.S. educators who remained teaching at the same school, educators who left teaching, and the difference between those two data points.

Garcia and Weiss (2019a) noted when examining the percentage of teachers with full certification, having taken the traditional route into teaching, with more than 5 years of experience, and with an education background in the area of teaching assignment, *all* measures were greater for educators at low-poverty schools as compared to high-poverty schools. Of the total educators teaching at the same school, 88.7% at high-poverty schools and 93.1% at low-poverty schools were identified as fully certified. Of those educators who left teaching, between 90.0% at high-poverty schools and 89.6% at low-poverty schools were identified as fully certified. A greater percentage of educators at low-poverty schools entered teaching via the traditional route than educators at high-poverty schools. One striking piece of data Garcia and Weiss (2019a) cited was the

difference between educators who left teaching in high-poverty and low-poverty schools and whether their educational background was in their subject of assignment. Almost 69% of teachers at low-poverty schools (who left teaching) were educated in their subject of assignment, while 59.3% of teachers at high-poverty schools (who left teaching) were educated in their subject of assignment. This suggests more educators at low-poverty schools are fully certified, have more teaching experience, and are educated in their subject of teaching assignment than teachers at high-poverty schools.

Garcia and Weiss (2019a) compiled data from the 2011-2012 Schools and Staffing Survey and the 2012-2013 Teacher Follow-Up Survey and noted differences between low-poverty schools' and high-poverty schools' teachers. For high-poverty schools, fewer educators were fully certified (1.8% fewer), fewer educators took the traditional route into teaching (6.3% fewer), and fewer educators had a background in their subject (5.4% fewer) than educators at low-poverty schools (Garcia & Weiss, 2019a). These data indicate just how large the disparities are between educators in low-poverty schools when compared to educators in high-poverty schools.

O'Meara (2014) found that in the U.S., attrition is a larger issue than recruitment. Of 150,000 new educators entering schools each year, only half of those will remain after the first year. In addition to teachers leaving the field and choosing not to continue teaching, the number of teachers who are entering the field lacking certification is growing. Garcia and Weiss (2019a) also examined how teacher credentials were changing over time, comparing teacher credentials between the 2011-2012 AY and the 2015-2016 AY and finding educators in the U.S. have entered the teaching profession with less experience and less training in recent years: 6.8% of educators in the 2011-2012

AY had 2 years of experience or less, while that percentage grew to 9.4% of educators having 2 years of experience or less in the 2015-2016 AY (Garcia & Weiss, 2019a). Between those 2 AYs, 2.1% more educators were inexperienced (having taught 5 years or less). Further, 2.6% more educators in 2015-2016 than in 2011-2012 were novice teachers, having taught for 2 years or less. Even the amount of teaching experience in their subject of assignment is different: In 2011-2012, 31.1% of educators had no educational background in their main assignment versus 31.5% in 2015-2016. The percentage of educators not fully certified also grew from 8.4% in the 2011-2012 AY to 8.8% in the 2015-2016 AY. It comes as no surprise that only 3% of U.S. educators in their first year of teaching received adequate, comprehensive support (Sutcher et al., 2016).

Garcia and Weiss (2019a) also compared data from the 2015-2016 National Teacher and Principal Survey from NCES and found similar discrepancies between high-poverty and low-poverty schools. They noted the difference between certification, experience, and education of teachers working in high-poverty and low-poverty schools. Overall, more U.S. educators at low-poverty schools have full teaching certifications, took the traditional route into teaching, have more experience, are staying longer, and are educated in the subject they teach when compared with educators teaching at high-poverty schools (Garcia & Weiss, 2019a). These differences may impact student growth and achievement as well as educator burnout and rates of attrition. Research on the negative impact of teacher turnover is plentiful, from increased costs for school districts to reduced student achievement (Strauss, 2017).

Similarly, Garcia and Weiss (2019b) noted there to be negative growth from the

2008-2009 AY to the 2015-2016 AY in people pursuing and completing degrees in the education field, as well as enrolling and completing teacher preparation programs. These numbers have decreased by -15.40%, -37.80%, and -27.40% respectively. Garcia and Weiss (2019b) obtained data from the Digest of Education Statistics and Higher Education Act Title II State Report Card System from the U.S. Department of Education for 2017-2018.

The number of people obtaining degrees in education is declining for both the bachelor's and master's levels (Garcia & Weiss, 2019b). From the 2008-2009 AY to the 2015-2016 AY, the percentages are declining between a range of -14.30% to -31.20%. The number of educators not pursuing college degrees is increasing at a larger rate in 2015-2016 than in 2008-2009. If fewer people are graduating with degrees in education, it seems fewer people would be enrolling in teacher training programs to begin with. Garcia and Weiss (2019b) noted increasing enrollment in alternative teacher education programs and decreasing enrollment in traditional teacher preparation programs. The change was striking: by -25% in 2015-2016.

The number of educator vacancies has increased from the 2011-2012 AY to the 2015-2016 AY, and the ability to fill those vacancies has become increasingly difficult (Garcia & Weiss, 2019b). Garcia and Weiss (2019b) also reported a larger percentage of newly hired teachers who are in their first year of teaching. These data suggest teachers are leaving their schools in increasing numbers and creating vacancies, those vacancies are more difficult to fill, and those vacancies are being filled more and more by new or beginning teachers. According to The Graide Network (2019), there has been an educator shortage in the U.S. for more than a decade. To combat this shortage, students are being

put into larger classes, fewer elective classes are offered, and students are being offered online classes. These positions are increasingly difficult to fill because of increasing burnout, stressful working conditions, low pay, insufficient support, disrespect, and the emphasis on high stakes testing (The Graide Network, 2019). It is considered typical for a certain percentage of educators to leave the classroom early on, but for this issue to be large-scale and nationwide is certainly troubling and indicates this is the norm rather than the exception.

Southeast U.S. Regional Data

In order to gain a complete understanding of N.C. educator perceptions of working conditions, it is necessary to view N.C. as a piece of the southeastern U.S. The American Federation of Teachers (AFT) and Badass Teachers Association (BAT) surveyed teachers across the U.S. in 2017 and compiled data in four areas: work life, school funding, legislation, and the next election. Of all the southeastern states (Alabama, Arkansas, Georgia, Louisiana, Mississippi, N.C., South Carolina, and Tennessee), N.C. teachers were second highest in the region for feeling work is “often” or “always” stressful, at 80% (AFT & BAT, 2017). Ninety-two percent of Arkansas educators feel work is “often” or “always” stressful; the highest ranking in the southeast for this item. The third highest, after N.C., is Georgia educators, with 76% of them feeling work is “often” or “always” stressful (AFT & BAT, 2017).

Allegretto and Mishel (2016, as cited in Holt et al., 2020) found the significant pay disparity between educators and other college-educated professionals caused “even intrinsically motivated teachers” (p. 4) to have increased levels of stress. Data compiled from AFT and BAT (2017) indicated that as of the 2015-2016 AY, N.C. had the lowest

state ranking of all of the southeastern states for tax effort, the second-lowest ranking for per-pupil spending, and the second-lowest ranking for student-teacher ratio.

Education in N.C.

According to The Graide Network (2019), N.C. ranks ninth in the nation for teacher turnover, lower only than Arizona, New Mexico, Louisiana, Texas, Nevada, Montana, Oklahoma, and Mississippi. In order to gain a clear and comprehensive picture of N.C.'s public education system, we must see the bigger picture and examine how N.C. compares to U.S. average data for each of the items described. N.C. has 115 operating public school districts and ranks 39th in the U.S. for the number of districts in the state.

N.C. schools, when compared to the national average, have experienced a decline in student enrollment overall. Total fall enrollment in N.C. public schools for each year from the 2015-2016 AY to the 2019-2020 AY decreased by 1.64%; however, N.C.'s national enrollment ranking has remained 10th from 2015-2020. While enrollment has decreased, average daily attendance has increased. Interestingly, N.C. school attendance decreased between the 2016-2017 AY and the 2018-2019 AY. However, from the 2018-2019 AY to the 2019-2020 AY, N.C. saw an increase in daily attendance of 1.16%, bringing N.C.'s national ranking from 10th for the 2016-2017 AY to ninth for the 2019-2020 AY (National Education Association, 2021).

The National Education Association (2021) showed that from AY 2018-2019 to AY 2019-2020, N.C. had a 0.05% net decrease in instructional staff overall. With fewer educators and more students attending daily, this surely impacts the quality of instruction and organizational culture. While N.C. has moved in national ranking from a low of 47th in 2016-2017 to 23rd in 2019-2020, the overall number of teachers from 2015-2016 to

2019-2020 declined. As a result, there are more student bodies in classrooms with fewer teachers. From the 2015-2016 AY to the 2019-2020 AY, there was a nominal change in N.C.'s number of students enrolled per teacher. However, when compared to states across the nation, N.C.'s ranking fell from sixth to 36th, suggesting N.C. is doing a poor job in keeping up with national trends.

N.C. fell in national ranking from 25th in 2015 to 22nd in 2020, indicating fewer average students in attendance from the 2015-2016 AY to the 2019-2020 AY. However, because N.C.'s percentage change in national ranking moved from 11% to 14%, and when considered with the number of teachers per student comparative data, N.C. teachers are working with more and more students.

N.C. instructional staff salaries have remained relatively stagnant for the past several years. Instructional staff may include classroom educators, exceptional children's program specialists, gifted education teachers, limited English proficiency teachers, and Title I teachers. N.C.'s national ranking was 46th in the 2015-2016 AY. It rose to 39th in the 2018-2019 AY but fell again to 42nd in the 2019-2020 AY. N.C.'s percent change in national ranking has also remained fairly constant until 2019-2020 when it jumped from seventh to 51st. From 2015 to 2019, N.C. instructional staff salaries were increased by approximately double percentages when compared to average U.S. instructional staff salary increases. However, in 2019-2020, N.C. average salaries only increased 0.39%, while average salaries in the U.S. increased a full 3%. N.C.'s average teacher salary national ranking has gone from second in 2016-2017 to 51st in 2019-2020 (National Education Association, 2021). While the current expenditure amounts per student have increased in N.C. from the 2015-2016 AY to the 2019-2020 AY, the state's national

ranking has remained relatively static. In 2015-2016, N.C.'s national ranking was 41st, and in 2019-2020, N.C.'s national ranking only rose to 39th.

Recently, the national education system has come under intense criticism and scrutiny by politicians and members of the public alike, leading to increasingly difficult working conditions. These working conditions are made more difficult by increasing class sizes, stagnant salaries, and fewer qualified and experienced educators. This added stress may also negate the positive rewards of teaching (Gugliemi & Tatrow, 1998; Shami et al., 2017). Even educators are acknowledging the current teaching climate is leading to high levels of stress and poor physical and mental well-being (Rothi et al., 2010). Mattison (2019) expressed shock upon discovering a teacher he worked closely with for years checked herself into a psychiatric facility after considering suicide. Her workload, low test scores, and increasingly challenging student behaviors all contributed to her extreme unhappiness, leading to anxiety and depression (Mattison, 2019).

N.C. Working Environment in Education

It is widely known and accepted that working conditions impact the health of employees (Salvagioni et al., 2017). This impact can be either positive or negative. Grayson and Alvarez (2008, as cited in Gray et al., 2017) noted school climate can impact educator stress for better or worse, but teachers experiencing stress can also impact school climate. Gray et al. (2017) also noted the importance of colleague support in reducing the level of educator attrition during the first 5 years of teaching.

Comparative Analysis of N.C. Teacher Working Conditions Results

N.C. educators are invited to participate in the N.C. Teacher Working Conditions Survey. The survey is opened biennially and serves to direct state policies and

improvements at the school level (North Carolina Department of Public Instruction [NCDPI], 2020). They are also used when evaluating principals. Percentages discussed are the sum of percent disagree responses and percent strongly disagree responses.

There has been relative stability in N.C. educator perceptions of working conditions from 2012 to 2020. One notable change was an increase in educators who agree with the statement, “Efforts are made to minimize the amount of routine paperwork teachers are required to do.” There has also been a level of stability in teacher perceptions of their facilities and resources from 2012 to 2020. One outlier would be that 8% more N.C. educator respondents agreed with the statement, “The reliability and speed of internet connections in this school are sufficient to support instructional practices.”

Notably, N.C. educators who disagree and strongly disagree with statements about student conduct have been increasing from 2012 to 2020. Educators disagreeing or strongly disagreeing with the statement, “students at this school follow rules of conduct,” increased from 29% in 2012 to 37% in 2020. All the other items in this domain increased from 2012 to 2020 by between 3% and 5%, indicating more educators disagree with the following statements: Students at this school understand expectations for their conduct; policies and procedures about student conduct are clearly understood by the faculty; school administrators consistently enforce rules for student conduct; school administrators support teacher efforts to maintain discipline in the classroom; teachers consistently enforce rules for student conduct; and the faculty work in a school environment that is safe.

All the items from teacher leadership and professional development opportunities maintained relative stability from 2012 to 2020, varying no greater than 2 percentage

points. Results showing educators' immediate professional plans are of interest as they are relatively stable over time. Between 78% and 81% of all responding educators report they intended to continue teaching at their current school from 2012 to 2020. The rest of the data are also relatively stable between 2012 to 2020. Five percent of educators reported they will leave their school but continue teaching in their current district: 5% stayed the same from 2012 to 2020. Three percent of responding educators reported they intended to continue teaching within N.C., but they will leave their district. Between 3% and 5% of educators responded they intended to continue working in education but move from the classroom to an administrative position. There was no particular trend, as 4% of respondents reported this result in 2012 and 2014, and 3% of respondents reported this result in 2016. Finally, 5% of educators reported this response in 2018 and 2020. These results possibly indicate an increase in educators who desired to leave the classroom and enter an administrative position; however, more data will need to be collected to see how the numbers trend in the future. Between 2% and 3% of educators responded they wished to continue working in education but to pursue a different but non-administrative role from 2012 to 2020. The interesting piece of data here is no educators reported they desired to leave education entirely. That number jumped to 4% in 2020. This trend could suggest teaching during the COVID-19 pandemic is pushing educators out of the classroom.

Educator Satisfaction

McAllister et al. (2017, as cited in Chen et al., 2020) defined job satisfaction as "an individual's emotional state due to work experience" (Job Satisfaction section). They noted work satisfaction is a moderator of stress; the relationship between occupational

satisfaction and occupational stress cannot be discounted. Chen et al. (2020) studied the human career experience and stated, according to the social cognitive career theory, the cognitive process of human career undergoes three main processes: belief, process, and motivation. They said, within this study, “professional identity is belief, the process is job satisfaction, and the motivation is job burnout” (Chen et al., 2020, Research Model Analysis section). The purpose of the Chen et al. study was to examine the impact of COVID-19 on professional identity and job burnout within the context of job satisfaction.

Chen et al. (2020) found job satisfaction to be an important factor impacting work and behavior. They also noted job satisfaction to be a mediating factor determining how educators are able to cope with and within their work environment. Arvidsson et al. (2016) further stated job satisfaction has a mediating role in “professional performance, motivation, professional training and, above all, the teachers’ physical and psychological well-being” (p. 16).

Chen et al. (2020) noted an incongruence between expectations new teachers have of the job versus what the reality is; this mismatch, or role ambiguity, can cause occupational dissatisfaction. This occupational incongruence is sometimes referred to as “strain” (Gugliemi & Tatrow, 1998). Gugliemi and Tatrow (1998) noted two factors leading to job strain are job demands (workload and deadlines, for example) and decision latitude (how much autonomy and control an employee has). Job satisfaction can be a moderator of negative stress (Arvidsson et al., 2016). Tang et al. (2001) noted educators had the lowest level of occupational satisfaction when compared to health care workers and police officers. It would be of interest to compare results from a more current research study.

Tang and Lau (1996, as cited in Tang et al., 2001) noted that educators reported even lower levels of personal accomplishment than even nurses and law enforcement officers. Gugliemi and Tatrow (1998) stated the two main factors influencing occupational satisfaction are demands of the job (such as deadlines, workload, etc.) and educator autonomy (ability to make decisions and take control, etc.). Even more importantly, physical and psychological well-being is mediated by job satisfaction (Arvidsson et al., 2016). According to Fisher (2011), stress was found to be a statistically significant predictor of burnout.

Stress

Stress refers to how an individual perceives challenging situations (Chervinski, 2021; Kyriacou, 1989; Lazarus & Folkman, 1984). Individuals cope with stress differently; some view stress as a positive challenge and use problem-solving strategies, while others perceive stress negatively (Tang et al., 2001). According to Rothi et al. (2010), if occupational demands are greater than an individual's ability to productively meet or positively cope with those demands, negative stress is likely to occur. Rothi et al. noted negative stress is more likely to occur if the individual is psychologically attached to the event, situation, or stressor.

Within the general context of stress, there is a large body of research on occupational stress. It is crucial to understand stress within the occupational context and, more specifically, as it relates to stress within the field of education (Gugliemi & Tatrow, 1998). Holt et al. (2020) stated educators may be particularly vulnerable to negative occupational stress due to the level of caring and compassion they have toward students and the level of motivation they have toward the job. Individuals may find work

therapeutic for different reasons; it provides income, but equally as important, it provides social identity (Zalat et al., 2017). Rothi et al. (2010) noted a reasonable amount of stress or pressure may lead to employees reaching their best potential. This type of stress is called eustress and often evokes positive feelings and accomplishments stemming from reasonable stress related to occupational responsibilities (Parihar & Mahmood, 2016, as cited in Chervinski, 2021).

Negative Stress

Negative stress often manifests in the workplace through decreased motivation to do the job, decreased desire to nurture collaborative relationships, and decreased ability to persevere (Chervinski, 2021). One study examined the impact of negative occupational stress on 806 social workers and found the workers' mental health was impacted by their perceptions of occupational stress (Parslow, 2004, as cited in Shami et al., 2017). Holt et al. (2020) reported negative stress correlates to a lower quality of teaching in the classroom and higher rates of attrition from education.

Negative stress has many implications for physical and psychological health. Negative stress can be measured in quantifiable ways within three domains: (a) physiological dysfunction, (b) psychological dysfunction, and (c) behavioral dysfunction (Gugliemi & Tatrow, 1998). Behavioral dysfunction is not being investigated in this study; however, physiological (physical) and psychological (mental) dysfunction are being investigated. Prolonged exposure to extreme negative stress has been found to have adverse health consequences, both physical and psychological, including heart attack, stroke, hypertension, ulcers, diabetes, angina, cancer, panic attacks, panic disorder, anxiety, and depression (Rothi et al., 2010). According to Mérida-Lopez et al. (2017), the

type and frequency of health problems educators report suggest education is a stressful occupation. The stress reaction is colloquially called “fight or flight” because it prepares one to address a threat (Shami et al., 2017). Because stress results in a physiological response, it comes as no surprise that repeated exposure to stress can cause physiological symptoms. Stress can also manifest through psychological symptoms, such as inappropriate or unwanted emotions such as anger, frustration, depression, anxiety, and increased levels of emotional instability (Chervinski, 2021).

Educator Stress

Gray et al. (2017) connected the term teacher stress to negative emotional experiences stemming from occupational demands. Given the nature of the challenges educators face on a daily basis, it is unsurprising that many educators feel occupational stress (Gray et al., 2017). According to Farmer (2020), educator stress is a main contributor to occupational dissatisfaction, job-related illness (both physical and mental), and early retirement or attrition. Similar to global educator data, educator stress has been found to cross geographical borders, school types, and grade levels (Gray et al., 2017). According to Unterbrink et al. (2010), teachers are “exposed to high rates of adverse events” (p. 262) such as aggression, threats, and violence. Gray et al. found stress levels to be statistically insignificantly different between beginner and experienced educators. Kyriacou (2001, as cited in Spilt et al., 2011) noted teaching is an extremely stressful job, ranking among the highest in a database of 26 high-stress occupations. Occupational stress felt by educators commonly leads to negative psychological symptoms, such as depression and anxiety; and physical symptoms, such as increased heart rate, increased blood pressure, and increased perceptions of pain (Malik & Noreen, 2015).

The causes of educator stress are multifaceted and complex. Mérida-Lopez et al. (2017) noted that work-related stressors can significantly increase occupational stress for educators. Demands placed on educators such as long working hours, high workloads, violence in schools, and student behavioral and academic achievement, in addition to low salaries compared to other similarly educated professionals also contribute to educator stress (Gray et al., 2017). Kidger, Evans, et al. (2016) found when educators perceive a lack of support, handling challenges alone, being isolated from colleagues, etc., occupational stress is heightened. Farmer (2020) stated stress has impacts on every aspect of educators' days, including assessing student mental health and making appropriate referrals, lists of duties impossible to accomplish in a single workday, and being responsible for ensuring student safety in life-threatening situations. Farmer cited a study by Loeb et al. (2005) noting workplace characteristics to be the strongest predictor of educator stress. Turner (2016) stated that 46% of educators reported feeling high daily stress, similar to stress levels reported by nurses and physicians. Turner continued by stating the work seems to be getting more difficult and the cumulative effects of stress harder to let go of. According to Schonert-Reichl (2017, as cited in Chervinski, 2021), the "consistency of stressful situations on a daily basis are the leading factor in professionals experiencing the dimensions of burnout" (p. 33).

One difficult aspect of measuring educator stress is the long-term nature of the pathological effects of stress (Gugliemi & Tatrow, 1998). Stress and its effects are often felt acutely, but the effects of prolonged stress can become chronic and more difficult to measure in a study that is not longitudinal in nature. For example, stress has been shown to cause or contribute to chronic diseases such as cardiovascular disease and cancer. One

question many researchers face is whether or not the disease caused by stress has had enough time to manifest in a measurable way, such as in diagnosable symptoms (Gugliemi & Tatrow, 1998). The other question is how strongly stress can be linked as a precursor to a chronic disease or disorder. Gugliemi and Tatrow (1998) continued by stating,

> The etiology of most diseases is multifactorial and is probably determined by (a) a complex interaction of a large number of occupational and nonoccupational factors, (b) a complex interaction of numerous mediators and moderators, and (c) a complex interaction of (a) and (b). (p. 89)

Van Der Linde (2000, as cited in Shami et al., 2017) stated educators experience negative occupational stress differently from other professions–teachers cannot leave the classroom when needed and are under pressure to control their emotions–and this lack of freedom translates, for many, into stress. When people experience stress and their fight or flight response is engaged, the autonomic nervous system is activated. When the nervous system is activated, whether it is the autonomic nervous system or the sympathetic nervous system, a waterfall of events occurs in the body (Rhudy, 2016). Immune cell growth and activation can be inhibited, though some stressors can increase the immune response. This inhibition can cause an individual to be more susceptible to physical illness caused by a pathogen if immune functioning is suppressed. On the other hand, if the immune response becomes hypersensitive or overactive, an individual may have an immune response to a non-harmful substance, such as with allergies (Rhudy, 2016). Intense stress has also been known to impair reproductive function, both through measurable hormonal changes and changes in mental well-being (McCarty, 2016).

Whether the autonomic nervous system or the sympathetic nervous system is activated, abnormal perception of pain may be experienced. In highly stressful situations, individuals' nervous systems may suppress the pain response or become hypersensitive to it (McCarty, 2016). This hypersensitivity describes the sensation of pain either without tissue trauma or injury or experiencing pain from a typically painless event (McCarty, 2016).

Will (2021) noted stress, even more so than salary, was the top reason public school educators left the profession. Will stated that 43% of all educators who chose to leave did so because the stress of teaching was not worth it; this statistic was almost twice the educators who left due to low pay. When considering the many negative impacts of stress, work-related stressors are consistently associated with decreased job performance, decreased job satisfaction, and a decrease in mental well-being (Gray et al., 2017; Mérida-Lopez et al., 2017). All of these contribute to mental illness (such as depression or anxiety) and burnout syndrome (Rothi et al., 2010).

Menghi (2018) stated stress can be episodic or chronic. Episodic stress is sporadic and impermanent; when the stressful situation is resolved, the symptoms of the stress go away (Menghi, 2018). Chronic stress occurs when duration, frequency, and intensity are high and the stressor(s) is (are) constant (Slipack, 1996, as cited in Menghi, 2018). The COVID-19 pandemic effects and stressors, having extended for more than 24 months, certainly qualify as chronic.

Stress and the Learning Environment

Work-related stress is common and some argue even necessary for employees to reach maximum potential (Shami et al., 2017). Bakshi (2010, as cited in Shami et al.,

2017) found stress to have a negative impact on all members of society irrespective of age, gender, and economic status. Gugliemi and Tatrow (1998) noted the importance of studying the impacts of stress on educators to support "their effectiveness in the classrooms, the teaching-learning process, and the overall quality of education in our schools" (p. 92). Gray et al. (2017) noted the negative cycle that may occur when educators feel negative stress: The stress impacts how educators respond to students, and students perceive these interactions negatively. This negative perception can manifest further in negative behaviors and additional negative interactions; in turn, increasing educator stress (Gray et al., 2017; Salvagioni et al., 2017). These negative perceptions manifested in negative behaviors and negative interactions can turn into a negative feedback cycle perpetuating negative stress and impacting the learning environment. Negative stress can manifest through impatience, frustration, and ineffective or inappropriate communication, and these manifestations certainly negatively impact the classroom learning environment (Gray et al., 2017). High levels of negative stress have a deleterious impact on positive teacher-student relationships, leading to behavioral and academic negative growth (Gray et al., 2017). Rothi et al. (2010) noted when educators feel negative stress, their performance at and enthusiasm for work decreases, leading to higher rates of presenteeism and absenteeism. According to Tang et al. (2001), outcomes such as absenteeism, presenteeism, and detachment (leading to burnout) are all affected by educator stress.

Rothi et al. (2010) noted that 48% of administrators reported teacher illness and stress were "the most complex health and safety matters to manage" (p. 8), and they required a large time commitment where time could be spent on other things. Stress is

widely known to negatively impact both physical and mental health (Shami et al., 2017; Tang et al., 2001; Zhang et al., 2019). Greenberg et al. (2016) noted teaching is one of the most stressful occupations in the country, and educators experience increasing levels of stress each year.

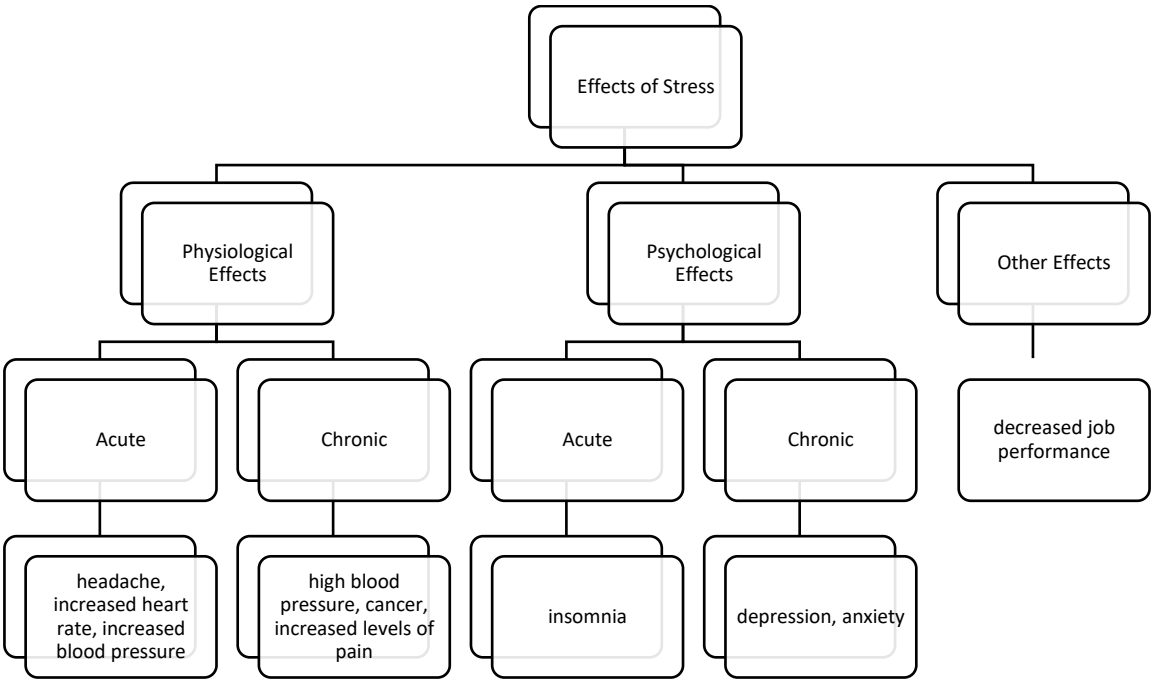
Educator Health

Recent interest has been piqued around the relationship between emotional perceptions and experiences and physical and mental health (Mérida-Lopez et al., 2017; Shami et al., 2017). There is no question a relationship exists between negative stress and health outcomes, including endocrine, immunological, neurological, and psychological dysfunction (Gugliemi & Tatrow, 1998; Salvagioni et al., 2017; Seibt et al., 2012; Unterbrink et al., 2010). In fact, Zalat et al. (2017) noted the causal relationship between the work environment and health problems in educators. Studies have been done globally to explore relationships between occupational stress and physical and mental health in the field of education. In Hong Kong, researchers found "increasing incidents of attempted suicide among teachers" (Tang et al., 2001, p. 889) who were suffering from poor physical and mental health due to job stress. The cumulative effects of negative occupational stress have also been shown to be directly and indirectly linked to cardiovascular disorder due to both unhealthy behaviors as well as neuroendocrine mechanisms (Salvagioni et al., 2017). According to Ahola et al. (2014, as cited in Holt et al., 2020), consistent relationships have been found to exist between "occupational stress and more severe outcomes such as anxiety, burnout, trouble sleeping, depression, and physical health decline" (p. 3). Figure 2 shows different health measures of stress (Gugliemi & Tatrow, 1998; Salvagioni et al., 2017; Seibt et al., 2012; Unterbrink et al.,

2010).

Figure 2

Health Measures of Stress



Note. From Gugliemi & Tatrow, 1998; Salvagioni et al., 2017; Seibt et al., 2012; Unterbrink et al., 2010.

In a study conducted by Lahelma et al. (2012), results indicated that physically demanding working conditions coupled with low job control were significant risk factors for retiring on disability. Lahelma et al. found the number of employees retiring early due to disability was rising, creating serious economic burdens. Lahelma et al. posited the number of employees on disability retirement would decrease if working conditions improved. Gugliemi and Tatrow (1998) noted educators defined general health as "the proper physiological functioning of the body" (p. 66). According to Salvagioni et al. (2017), prolonged negative stress may lead to an increase in unhealthy behaviors by those experiencing the negative stress. These unhealthy behaviors often include disordered

eating (too much, too little, poor choices), lack of exercise, and substance use including coffee, tobacco, and/or alcohol (Gray et al., 2017; Salvagioni et al., 2017). Negative behaviors such as these, often caused by stress, are positively linked with and often lead to negative health outcomes and can be acute or chronic.

Seibt et al. (2012) stated high workload and high levels of sustained, chronic stress elevate one's risk for physical health problems. Salvagioni et al. (2017) noted the relationship between prolonged stress, burnout, and physical health problems. Gonzalez et al. (1990) noted when stress negatively impacts physical health, self-efficacy is also negatively impacted. Cardiovascular disease was present as a primary negative physical consequence of occupational stress (Gugliemi & Tatrow, 1998; Salvagioni et al., 2017). Galton and MacBeth (2008, as cited in Rothi et al., 2010) conducted a study and found a significant correlation between low perceived job control and negative health outcomes such as high blood pressure and high heart rate.

According to Unterbrink et al. (2010), one of the main factors of the physical and mental health of educators is the ability or inability to cope with problems and stressors. Godoy et al. (2018) stated while the stress response is often helpful and even necessary for survival, such as with the autonomic nervous system activation and the fight or flight response, when individuals are exposed to high levels of stress and/or stress over a sustained period of time, the body may not be "able to overcome the environmental, physiological or emotional demand" (p. 13).

Educator Physical Health

The work environment, apart from the roles and responsibilities of the job, is a considerable factor of job satisfaction and, by extension, the physical health of educators

(Farmer, 2020). Physical health includes well-being and adequate functioning in different facets of an individual's physical functionality (Farmer, 2020). Many researchers have noted connections between an individual's physical health and environmental stressors (Farmer, 2020; Godoy et al., 2018; Salvagioni et al., 2017).

Musculoskeletal Health and Pain. Links have been shown to exist between stress and pain; however, the pathophysiological connections are not clear (Salvagioni et al., 2017). According to Salvagioni et al. (2017), inappropriate or changed pain responses stood out as a consequence of negative occupational stress. One line of research suggests psychological stress is a trigger for sympathetic hyperactivity or oversensitivity (Salvagioni et al., 2017). Godoy et al. (2018) noted stressors (perceived or real) can cause physical responses in the body including pain, inflammation, and more, as well as cognitive stress responses. Lahelma et al. (2012) found a correlation between employee lack of control and an increase in disability due to musculoskeletal diseases, diseases of the muscular and/or skeletal systems.

Cardiovascular Health. Gugliemi and Tatrow (1998) found a significant relationship between occupational stress and high blood pressure, but this relationship was significant only for men. Because of the high percentage of teachers identifying as female, the relationship between stress, blood pressure, and gender requires further study to determine if any statistically significant differences exist between the cardiovascular health and stress of men and women. When examining causes of reported absences in a study of occupational burnout, cardiovascular diseases were most frequently reported (Salvagioni et al., 2017). Additionally, burnout was found to be a significant cause of absences due to illness from diseases of the circulatory and respiratory systems

(Salvagioni et al., 2017). Other common negative physical outcomes include cardiovascular risk factors such as diabetes, high body mass index, hypertension, large waist circumference, and high LDL cholesterol (Salvagioni et al., 2017). In a 10-year longitudinal study, Salvagioni et al. (2017) cited a "significant association between burnout and hospitalizations due to cardiovascular disease" (Physical Consequences section). A challenge posed by researching the relationship between stress and physical health outcomes is pathological symptoms often occur over longer periods of time than allotted during research studies, unless the studies are longitudinal (Gugliemi & Tatrow, 1998). Tissue damage, chronic pain, changes in weight, and cardiovascular disorders all take time to manifest and diagnose (Gugliemi & Tatrow, 1998). Lahelma et al. (2012) noted if work demands increase and working conditions worsen, an employee's ability to continue working productively is challenged.

Psychoneuroimmunology. Researchers have also found stress to be linked with the immune response. Psychoneuroimmunology refers to psychological factors such as moods which "produce reliable and measurable changes at the level of the immune system" (Gugliemi & Tatrow, 1998, p. 85). Impaired immune function, secondary to high levels of stress, can cause an increase in instances of respiratory infections and gastrointestinal infections (Salvagioni et al., 2017). This is not the only mechanism of impaired immune function related to stress, and causality is still being investigated. One hypothesis is the autonomic nervous system and the collaboration between the hypothalamus, the pituitary gland, and the adrenal glands slows (Salvagioni et al., 2017). This malfunction can lead to a negative impact on the immune system. Alternately, Godoy et al. (2018) suggested the functions of stress include preparing the body to deal

with stressors (either real or perceived), but stress also serves to activate the immune system in order to prepare the body to effectively fight pathogens secondary to physical injury. Godoy et al. noted preparation of the body to deal with stressors can either activate or inhibit immune function.

Educator Mental Health

Schools have prepared for and implemented myriad programs to provide increased support for student mental health needs (Green & Bettini, 2020). For our students to be supported, our teachers' mental health must be assessed and addressed as integral to student mental health (Green & Bettini, 2020). Reinke et al. (2011) and State et al. (2011, as cited in Green & Bettini, 2020) noted the importance of the ability of educators to identify and respond to student mental health needs; however, with the additional challenges and stressors educators are facing in the classroom due to the COVID-19 pandemic, they largely feel unprepared to do so. WHO defined mental health as "a state of well-being in which individuals successfully cope with the normal stresses of life, enabling them to work productively and contribute to their community" (Gray et al., 2017, p. 203). These coping mechanisms include "self-efficiency, self-dependence, inter-generation reliance, and self-development of potential thinking abilities" (Shami et al., 2017, p. 125). Positive mental well-being helps people function appropriately socially and professionally. Soares et al. (2014) stated educators define mental health as "the balance between mind and body as required for happiness" (Results section). Mental health plays a foundational role in the ability of individuals to function across many domains, including personally and professionally, and the ability to cope with ordinary stressors (Maslach & Leiter, 2008, as cited in Gray et al., 2017). Nordqvist (2015, as

cited in Shami et al., 2017) stated mental health plays an important role in an individual's ability to maintain physical health and achieve psychological resilience.

According to WHO (2020), an estimated 517.5 million people suffer from mental illness worldwide. Mental ill-health results from rapid change, social isolation, and stressful working environments, among others (Zalat et al., 2017). There are many studies investigating the impact of high-stress occupations on workers' mental health. Kidger, Stone, et al. (2016) found educators to be at a higher risk of poor mental health or mental disorders when compared to other occupations. Geving (2007) and Grayson and Alvarez (2008, as cited in Gray et al., 2017) cited the deleterious effect of the high amounts of pressure teachers face; this pressure leads to "high rates of stress and burnout interfering with mental health" (p. 203). Harding et al. (2019) found multiple studies by Johnson et al. (2005), Kidger, Evans, et al. (2016), and Stansfeld et al. (2011) stating educators are at increased risk of poor mental health when compared to professionals in other occupations. Godoy et al. (2018) noted although the stress response is critical for survival, it is commonly correlated with brain disorders such as depression, anxiety, and post-traumatic stress disorder. Rothi et al. (2010) found educators to have higher than average levels of mental health disorders than other occupations. Educators are at an increased risk for poor mental health due to factors such as excessive workload, lack of autonomy, and low salary, among others (Kidger, Stone, et al., 2016; Rothi et al., 2010). The Health and Safety Executive Organization confirmed these findings and stated "teaching is one of the occupations with higher than average levels of common mental health disorders" (Rothi et al., 2010, p. 8). These reasons all impact and help form a school's culture and, thus, an educator's working environment. Additionally, the

repetitive nature of the occupational stressors educators face may, in turn, cause an increased risk for poor mental health.

Educators are often expected to provide mental health and behavioral support to their students but feel ill-prepared to do so appropriately (Kidger, Stone, et al., 2016). According to Kidger, Stone, et al. (2016), this can also increase stress for educators on top of other occupational stressors. To further compound the issue, people experiencing mental ill-health often have decreased ability to display help-seeking behaviors, secondary to decreased resiliency (Gray et al., 2017). When people need help but do not seek it out, they can experience greater feelings of isolation and stress, thus placing themselves at increased risk of mental ill-health and burnout (Gray et al., 2017; Seibt et al., 2013). Kidger, Stone, et al. noted the discrepancy in results of a Wellbeing in Secondary Education pilot study in which 19.4% of educators earned "moderately to severely depressed" scores on the PHQ-9, compared to 8% to 10% of the general population. Educators have also been seeking support from mental health providers at higher rates following years-long increased exposure to traumatic events like school shootings and community violence (Farmer, 2020).

Mental illness negatively impacts educators' abilities to be present for and engaged at work, communicate effectively, and function appropriately (Seibt et al., 2013). Corr et al. (2014) stated educator mental ill-health puts student mental health at risk, as these educators communicate inappropriately with students at higher rates and struggle to form meaningful, positive relationships with students at higher rates. Holt et al. (2020) noted the link between educator mental health and student achievement, stating the "relative mental health of teachers may play an important role in closing educational

gaps" (p. 4).

Educator mental ill-health also reduces their self-efficacy, or belief in their ability to help support students through problems (Seibt et al., 2013). Additionally, educators experiencing poor mental health have increased difficulty managing student behavior appropriately and developing appropriate, positive relationships with students (Kidger, Stone, et al., 2016). Poor mental health also predicated educator beliefs that they were unable to support students in the way students needed. Kidger, Stone, et al. (2016) also noted the impact on student mental health, as positive supportive relationships with educators have been shown to be a protective factor against student depression. Holt et al. (2020) noted the link between teacher mental health and student achievement; if schools and systems truly want to consider and serve the "whole child," educator mental health must also be considered (Rothi et al., 2010; Seibt et al., 2013).

Emotional Intelligence. Mental health cannot be discussed without addressing emotional intelligence, as emotional intelligence is a support of one's mental health (Shami et al., 2017). According to Shami et al. (2017), emotional intelligence, when combined with cognitive intelligence, supports an individual's ability to adapt positively to stressors and life challenges. Mayer and Salovey (1997, as cited in Mérida-Lopez et al., 2017) described an emotional intelligence construct of four intertwined competencies: (a) perceiving emotions, (b) using emotions, (c) understanding emotions, and (d) regulating one's own and others' emotions. One major challenge educators regularly face is the need to manage their own emotions while interacting with students who are "in various states of emotional and physical need for reasons beyond teachers' control" (Holt et al., 2020, p. 3) for long time periods. If educators do not possess strong emotional

intelligence skills, this job demand may cause job strain and stress, leading to negative health consequences.

Depression and Anxiety. According to the American Psychiatric Association (2013), depression is a real mental disorder accompanied by symptoms of persistent sadness and a loss of interest in activities one enjoys, accompanied by an inability to carry out daily activities, for a sustained period of time. Educators early in their career reported myriad physical demands of teaching negatively impact their mental health and increase both physical and emotional fatigue (Gray et al., 2017; Seibt et al., 2013). In a study of 555 secondary educators in England, researchers used the Warwick Edinburgh Mental Wellbeing Scale and found in the general population, 8% to 10% of people reported having moderate to severe depression (Kidger, Evans, et al., 2016). When educators in southwest England were surveyed, the percentage reporting moderate to severe depression rose to 19.4% (Kidger, Stone, et al., 2016). This study indicated secondary school teachers were at a particularly increased risk of poor mental health.

Many factors in the school environments have been shown to have an impact on student academic performance and student mental health. For example, Kidger, Evans, et al. (2016) and Plenty et al. (2014, as cited in Harding et al., 2019) found positive teacher-student relationships were a factor in lower rates of depression reported by students. Educators with poor mental health reported having increased difficulty in engaging in positive relationships with students (Harding et al., 2019; Jennings & Greenberg, 2009, as cited in Seibt et al., 2013; Kidger, Evans, et al., 2016). This relationship must be considered. According to Collishaw (2015, as cited in Harding et al., 2019), the mental health of young people is declining. Kidger, Evans, et al. stated positive and supportive

relationships between educators and students produce higher student engagement and achievement, predicting lower rates of student poor mental health. The impact educators can have on young people and their mental well-being cannot be understated. According to Gray et al. (2017), it is crucial for educators to be mentally healthy and for them to remain in the profession. Briner and Dewberry (2007, as cited in Gray et al., 2017) found teacher well-being accounted for approximately 8% of the change in student academic performance in both elementary and secondary schools. Depression, with or without burnout, can directly negatively impact the mental health of educators, leading to a direct negative impact on student academic performance (Capone & Petrillo, 2018).

According to APA (2021), anxiety is a body's response to stress and may include feelings of worry, tension, and physiological changes such as increased blood pressure. While some minor anxiety is a part of everyday life, traumatic events may cause "recurring intrusive thoughts or concerns" (APA, 2021, para. 2). According to Butler (2017, as cited in Chervinski, 2021), prolonged anxiety in educators is often seen coupled with burnout.

Matiz et al. (2020) conducted a study on the impact of mindfulness and meditation on the mental health of female educators during the COVID-19 pandemic in Italy. Study authors noted that due to women being at higher risk than men of developing symptoms of stress and/or anxiety and/or depression, the negative impacts of the COVID-19 pandemic and related public health measures are having a negative impact on the mental health of people, particularly women (Matiz et al., 2020). Between 40% to 50% of adults have reported experiencing psychological distress following the COVID-19 outbreak, and 30% of adults and children are at high risk for experiencing post-

traumatic stress symptoms (Matiz et al., 2020). Matiz et al. acknowledged not everyone experiences trauma in the same way, and "individual adaptive or non-adaptive responses to adverse events depend on a variety of biological, cultural, social, and psychological components" (para. 7).

Engagement

Physical and mental health have a clear impact on educator sick days and engagement while at work. Capone and Petrillo (2018) noted high levels of stress associated with teaching are negatively associated with educators' positive physical and mental health, thereby indirectly causing decreased educator engagement and increased "sick" days. According to Hastings and Agrawal (2015), only 30% of U.S. public school educators are actively engaged at work. Hastings and Agrawal defined engaged teachers as being involved in and enthusiastic about their work. Engaged teachers are deeply committed as educators. Educators who are not engaged are described as satisfied with their work but not deeply devoted or emotionally connected (Hastings & Agrawal, 2015). Educators who are actively disengaged may demonstrate their dissatisfaction by actively working to sabotage the work of their colleagues (Hastings & Agrawal, 2015). These numbers are startling, considering actively disengaged educators miss more than twice as many days as engaged teachers and an additional 1.5 million days over the baseline of engaged teachers. Hastings and Agrawal acknowledged these data did not establish a relationship or direction of causality between the level of engagement and unhealthy days or missed workdays; however, they did acknowledge the cause-and-effect of missing work due to poor health.

Absenteeism. Educators reporting higher levels of burnout missed an average of

8.2 more workdays when compared to educators reporting lower levels of burnout (Salvagioni et al., 2017). Salvagioni et al. (2017) also found burnout to be a predictor of long-term leaves of 42 or more consecutive days due to illness and short-term sick leave of about 3 days. In a study conducted by Rothi et al. (2010), 69% of participant educators reported feeling work-related stress, and 31% of those educators noted the work-related stress resulted in work absences. Rothi et al. also noted data from a study conducted in 2007 where 40% of all "sick days" were a result of poor mental health. Fifty-seven percent of teachers took sick leave in 2007, for an average of 9.3 sick days per year, according to Rothi et al.

Presenteeism. Kidger, Stone, et al. (2016) described presenteeism as occurring when educators experience reduced productivity while at work. Presenteeism is also described as occurring when educators perform their job less effectively (Kidger, Stone, et al., 2016). Student mental health is negatively impacted by educator presenteeism as teachers are less able to form positive, healthy relationships and develop a nurturing environment (Harding et al., 2019). Harding et al. (2019) also indicated a possible relationship between presenteeism and absenteeism in that absenteeism reduces collegial bonds and supportive relationships among colleagues, potentially encouraging presenteeism. Kidger, Stone et al. (2016) described a connection between poor mental health and presenteeism: Depressive symptoms and self-reported presenteeism were positively correlated in a study of the mental health of secondary teachers.

Salvagioni et al. (2017) noted the relationship between high levels of exhaustion and cynicism dimensions of educator burnout and a "two-fold risk of long-term sickness absence" (Discussion section). Salvagioni et al. also observed when there was a high

report of burnout, there was a predicted increase of 21% in educator absence days. Presenteeism and absenteeism can both be triggered by occupational burnout. Kidger, Stone, et al. (2016) stated ignoring educator stress and distress may lead to educator mental illness, poor performance, increased absenteeism, and higher numbers of educator retirement due to poor physical or mental health.

Educator Burnout

The first researcher to associate burnout specifically with educators was Maslach, a social psychologist (Chervinski, 2021). Shami et al. (2017) noted burnout as the "psychological result of long high-level work-related stress and mental pressure" (p. 126) from the imbalance between occupational demands and the ability to meet those demands. It is widely accepted that burnout negatively impacts both individuals and organizations, and these negative impacts most certainly negate educators' abilities to achieve larger educational goals (Chervinski, 2021). A study conducted by Fisher (2011) found significant differences between burnout in beginning educators when compared to experienced educators, suggesting burnout is a cause for more new educators to leave the field. Butler (2017) noted burnout as a top reason educators give for leaving the profession. Beginning educators experienced burnout at much higher levels, but there was no statistical difference in the experiences of stress between new and experienced teachers (Fisher, 2011). For educators who stay and experience burnout, the organization is taxed with absenteeism, presenteeism, and weaker performance; educators themselves face physical and mental illness (Chervinski, 2021).

According to Zhang et al. (2019), there is a strong relationship between teacher burnout and psychosocial stressors. Norlund et al. (2010) noted the strong connection

between burnout and mental illness. Zhang et al. acknowledged the limited research on "psychosocial capital, occupational stress, and coping styles on teacher burnout" (p. 340). Gray et al. (2017) found beginning teachers were at a much higher risk of occupational burnout than experienced teachers. According to Zhang et al., Demerouti's (2001) theory of occupational burnout states the risk of burnout is increased when both high levels of job requirements and a lack of work resources are present. Burnout is widely accepted to have three facets: (a) emotional exhaustion, (b) depersonalization or cynicism, and (c) reduced personal accomplishment (Gugliemi & Tatrow, 1998; Salvagioni et al., 2017; Shami et al., 2017). Zhang et al. (2019) stated teacher burnout is likely the product of "a toxic work environment and personal resources scarcity" (p. 340).

Some researchers believe since there is a considerable overlay and correlation between burnout and depression, burnout should be a symptom of depression (Harding et al., 2019; Salvagioni et al., 2017). However, Salvagioni et al. (2017) presented multiple research studies arguing burnout and depression should be considered separately from each other as they are distinct and different constructs.

Negative occupational stress has been found to lead to mental and physical health issues, and these issues predict job burnout (Holt et al., 2020; Salvagioni et al., 2017). Salvagioni et al. (2017) studied the financial employment sector and found burnout was a risk factor for poor mental and physical health. In a separate study of 5,000 workers in Israel, Salvagioni et al. found an increase in depressive symptoms was predicted by the presence of burnout syndrome. More seriously, Chen et al. (2020) found increased self-injurious behavior and suicidal behavior in individuals with burnout. Salvagioni et al. acknowledged that even after adjusting for variables and cofounders, severe burnout

significantly predicted new cases of retirement due to disability.

Common burnout symptoms educators experience are “physical and psychological fatigue, emotional exhaustion, cognitive weariness, sleep disturbances, depression, and anxiety” (Norlund et al., 2010, Background section). According to Norlund et al. (2010), sleep disturbances have been identified as preceding and coinciding with burnout. Holt et al. (2020) also found stress often predicts burnout, leading to depression and anxiety. These symptoms can lead to irritability, higher rates of absenteeism, and poor classroom management skills; all related to student interactions and relationships (Gray et al., 2017). Shami et al. (2017) noted researchers agree burnout does not show immediate symptoms; instead, burnout “appears as a gradual response to emotional exhaustion and prolonged exposure to stressors, which in turn lead to an increase in the degree of dehumanization and professional dissatisfaction” (p. 128).

In a study by Gugliemi and Tatrow (1998), participants reported the number of stress-related physical or mental illnesses they had experienced in the previous 2 years. Using that data, researchers split the participants into two groups: high stress and low stress. Each group was further divided into high burnout versus low burnout from results on the MBI-ES, making four categories of participants. Researchers found, after chi-square analysis, that participants in the high-stress, high-burnout group reported significantly more physical illnesses than the other groups (Gugliemi & Tatrow, 1998). Additionally, Gugliemi and Tatrow noted a significant relationship between high levels of stress and increased physical illness.

When educators have positive administrative support and significant psychological resources, the incidences of burnout are greatly reduced (Heng, 2020, as

cited in Chen et al., 2020). By contrast, negative working environments can lead to burnout (Salvagioni et al., 2017). Still other studies confirmed the relationship between job satisfaction and job burnout; however, the causal relationship has yet to be determined, especially when combined with other factors (Chen et al., 2020). While causality remains unclear, Chen et al. (2020) acknowledged the mediating role job satisfaction has on occupational burnout.

Shami et al. (2017) described a study investigating the relationship between educator mental health, emotional intelligence, and burnout. Using three instruments–Goldberg's mental health inventory, Maslach and Jackson's (1986) burnout inventory, and Bar-On's emotional intelligence inventory–results indicated a significant relationship between the three dimensions being investigated. In a longitudinal study by Salvagioni et al. (2017), significant relationships were found between occupational burnout, physical outcomes, and psychological outcomes. Salvagioni et al. found in a study examining psychological consequences of burnout, that burnout significantly predicted diagnoses of depression and/or individuals seeking antidepressant treatment. This predictive relationship was much stronger within the emotional exhaustion and depersonalization elements of burnout (Salvagioni et al., 2017). Salvagioni et al. also noted that where burnout was reported, a correlation between burnout and employee physical health resulted in increased incidents of hypercholesterolemia, Type 2 diabetes, heart disease, and musculoskeletal pain. Further, changes in pain perception, fatigue, and gastrointestinal and respiratory disorders were found (Salvagioni et al., 2017).

Salvagioni et al. (2017) also stated burnout is a risk factor for negative health outcomes such as fatigue, headache, gastrointestinal disorder, respiratory problems,

increased chance of injury, and early mortality. Cross-sectional research studies have also proven significant relationships between burnout and other health problems such as obesity, musculoskeletal pain, and sleep disorders (Salvagioni et al., 2017). Salvagioni et al. also found burnout to be a significant predictor of Type 2 diabetes. In an 18-month follow-up study, individuals with high levels of burnout were shown to be at an increased risk of developing pain in muscles and bones, musculoskeletal pain (Salvagioni et al., 2017).

When investigating the relationship between burnout and mental health, Salvagioni et al. (2017) stated psychological effects of burnout syndrome included sleep disturbances or insomnia, depressive symptoms, the need for and use of psychotropic and antidepressant medications, and hospitalizations due to poor mental health. Gugliemi and Tatrow (1998) indicated if prolonged and chronic stress leads to burnout, burnout is an endpoint rather than a predictor of health outcomes. Gugliemi and Tatrow argued whether burnout was a cause of health problems or whether health problems contributing to burnout are "fundamentally circular in nature" (p. 87).

Even when considering the high level of burnout among educators, teaching is one profession in which beginners and more experienced educators experience comparable levels of stress relative to expected skill and workload (Gray et al., 2017). When educators feel as if they do not have control or authority to make decisions, this perception can lead to burnout (Gray et al., 2017).

Chen et al. (2020) found a direct negative correlation between burnout and job satisfaction, and it cannot be understated. Gugliemi and Tatrow (1998) noted the connection between educator burnout and the impact on the learning environment for

students. The ability of educators to form meaningful, positive relationships with students is negatively impacted when educators are experiencing burnout (Gugliemi & Tatrow, 1998).

Because educators are given the responsibility of caring for society's most precious resource, its young people, it is of utmost importance that teacher stress and burnout are studied and better understood.

Emotional Exhaustion

Emotional exhaustion occurs when an individual's ability to cope is lessened due to chronic, cumulative, and/or extreme stress (Chervinski, 2021). Arvidsson et al. (2016) noted educators reported poor mental well-being and feelings of exhaustion related to burnout at a much higher rate than non-educators. Kokkinos (2007, as cited in Gray et al., 2017) found, contrary to stress data, educators with 10 or more years of experience reported higher levels of exhaustion when compared with educators with fewer years of experience. Salvagioni et al. (2017) found emotional exhaustion to be a consistent predictor of negative job satisfaction. Increasing numbers of educators experiencing high levels of stress have shown negative health impacts including emotional exhaustion (Farmer, 2020). The consequences of burnout-related emotional exhaustion are staggering, resulting in higher rates of absenteeism and presenteeism, reduced job performance, and increased job dissatisfaction (Chervinski, 2021). Further, teachers who repeatedly experience high levels of stress over long periods of time will experience emotional fatigue, inevitably causing attrition from the profession if not addressed (Farmer, 2020).

Depersonalization and Cynicism

While depersonalization may act as a protector from harm, both in and out of the work setting, it also increases the risk for burnout by increasing one's isolation from others (Wood & McCarthy, 2002). According to Bullough and Baughman (1997, as cited in Wood & McCarthy, 2002), depersonalization can lead to cynical views of students where educators are less likely to make positive connections with students and are less likely to view students with compassion. According to Gray et al. (2017), depersonalization occurs as a subdomain of burnout in which an individual experiencing burnout distances from others. Depersonalization may manifest through negative attitudes toward students and the occupational environment (Wood & McCarthy, 2002).

Impact on Health

The focus of researchers of late has been largely on student mental health; however, if the focus does not shift to teacher mental health, we will continue to see an exodus from the profession (Wu, 2020). According to Wang et al. (2015, as cited in Wu, 2020), teacher stress may be more likely to negatively impact the physical and mental health of educators than in other occupations and can consequently reduce their feelings of professional efficacy and increase the risk of burnout.

Educator Attrition

Educator attrition has far-reaching negative impacts on districts, remaining educators, and students. Teachers are asked, either explicitly or implicitly, to support their new colleagues. This added workload decreases the amount of time and emotional energy educators can spend on and with their students (Brandman University, 2020). When there is a constant movement of educators out of schools, professional

development offerings tend to be repeated, and program planning and implementation processes tend to be disrupted and repeated as well (Brandman University, 2020). Educator attrition is rising, and there is evidence suggesting it is linked to stress, poor mental health, and attrition (Mérida-Lopez et al., 2017). According to Ward (2019), teachers are now more likely to leave the field after their first year than any other year since 1997. Ward cited a study conducted by the Department of Education finding that 15.3% of first-year teachers in 2017 quit after their first year. After 5 years, that rate increases. Ward noted that 32.3% of educators who were first-year educators in 2013 were no longer teaching in 2018. Morrison (2019) found one in four educators left within 3 years and two in three left after 5 years.

According to Carver-Thomas and Darling-Hammond (2019), not only does burnout impact the educators who are leaving, but it also has negative impacts on school effectiveness, student learning, and district budgets. Carver-Thomas and Darling-Hammond noted the highest rates of educator attrition are in the south, ranging between 14% to 15% in rural areas and 16% to 17% in cities. They noted fewer than one third of all attrition in the U.S. is due to retirement, suggesting up to 66% of attrition is from educators choosing to leave their school, their district, or the profession outside of retirement (Carver-Thomas & Darling-Hammond, 2019).

Brown (2020) stated that 44% of new teachers leave education within the first 5 years. Ingersoll (as cited in Brown, 2020), an education and sociology professor and researcher, stated this attrition is largely due to working conditions. An anonymous educator interviewed by Brown stated, “You learn all the ideals of teaching…and then you walk in and it’s literally impossible” (para. 14). The 26-year-old educator also spoke

of a time when he gave a student a 0 for cheating on a test. That student's parent was angry and called the school principal. The principal allowed the student to be transferred to another teacher's class (Brown, 2020). Brown also noted schools with higher levels of and more serious discipline issues experienced increased rates of attrition. Another teacher Brown interviewed described experiences of being threatened and yelled at by parents during virtual lessons.

One study of interest reported by Fensterwald (2015) conducted by NCES presented data from 5 years, between AY 2007-2008 and AY 2011-2012. The data presented in this study indicated a much smaller percentage of beginning teachers left the classroom in the first 5 years. NCES reported that percentage to be 17%, rather than a widely accepted number closer to 50%. The 50% statistics originated from a study conducted by Ingersoll in 2003, but Fensterwald argued some of Ingersoll's data could have been inaccurate due to approximations and job mobility impacted by the economic recession of 2008. To further explain NCES's findings, Eubanks (as cited in Fensterwald, 2015), the director tor Teacher Quality at the National Education Association, stated, "Two important findings support what NEA has advocated for a long time. That high-quality mentors and competitive salaries make a difference in keeping teachers" (para. 8). Eubanks (as cited in Fensterwald, 2015) continued by noting teachers who spend their first year teaching in a high-poverty school are more likely to leave the profession after 1 year. As the study did not note which teachers moved from high-poverty schools to low-poverty schools after the first year, more research is needed to further explore the intricacies of this rate of first-year teacher attrition.

According to Jagannathan (2021), 44% of U.S. educators who left teaching

voluntarily during the COVID-19 pandemic cited the pandemic as the main reason for leaving. More specifically, Jagannathan also noted educators younger than 40 who left teaching during and due to the pandemic were extremely likely to feel the stress and risk of staying and were not adequately compensated in salary. While 24% of educators who left teaching during the pandemic noted the pay was insufficient, 43% of educators who left teaching during the pandemic stated, “the stress and disappointments of teaching weren’t worth it" (Jagannathan, 2021, para. 5). Twenty percent of teachers who left directly because of the COVID-19 pandemic noted stress as the main reason for leaving (Jagannathan, 2021). RAND Corporation conducted a survey of U.S. teachers in December 2020, including 527 teachers who left during the 2 years before the COVID-19 pandemic hit and 431 teachers who left after March 2020 when the pandemic forced schools across the country to close (as cited in Jagannathan, 2021).

The rapid spread of COVID-19 and the seriousness and severity of the epidemic forced public schools and businesses to close across the nation. During the month of March 2020, Governor Roy Cooper issued executive orders written to protect the life and health of North Carolinians. Governor Roy Cooper issued Executive Order No. 117 (2020) on March 14, 2020, effectively prohibiting mass gatherings and closing K-12 public schools statewide. A few days later, on March 27, 2020, Governor Cooper issued Executive Order No. 121 (2020), limiting unnecessary person-to-person contact. Governor Cooper’s Executive Orders meant many families quickly became unemployed (G. Prince, personal communication, March 28, 2020). These families are often the most vulnerable, leading to increased rates of poverty and increased food insecurity, increased housing insecurity, and potentially, increased home violence (Evans & Over, 2020).

We cannot know yet "whether COVID-19 will result in an increase in the overall number of teachers leaving the profession, though early signs indicate that it will," according to authors of the RAND survey report (as cited in Jagannathan, 2021, para. 15). This predicted leaving will cause additional burdens on the remaining educators, such as long hours, lack of flexibility, low pay, and poor work climate; unless these "structural problems" are addressed, educator attrition is predicted to continue to rise (Jagannathan, 2021, para. 17). According to Cerullo (2021), at the start of 2020, approximately 25% of teachers surveyed reported intentions to leave the profession by the end of the year. The U.S. Department of Education (as cited in Cerullo, 2021) cited a typical rate of attrition at approximately 8%. However, Morgan (2021) examined attrition data specific to N.C. and found it did not change significantly from pre-pandemic to present.

Many educators want to remain teaching but say "the pandemic changed everything" (Golodryga & Pomrenze, 2021, para. 6). Hui (2020) examined N.C. teacher turnover and acknowledged fewer teachers have left the profession in N.C. in recent years, but Hui noted concerns of the COVID-19 pandemic causing a current and future increase in attrition. Hui acknowledged even though the reported rate of resignations or retirements was 7.5% from 2018 to 2019, the data were only reported through March of 2019, which is when schools began to close due to the COVID-19 pandemic. Since the shutdowns of 2020, many N.C. educators have been speaking out in favor of classes being moved to online and remote instead of in person. Hui reported some teachers have already quit because of the COVID-19 pandemic but stated those numbers will not be reported until a future state report is published. Beller (2020, as cited in Hui, 2020) noted many educators she had spoken with in her role as president of a N.C. division of N.C.

Association of Educators told her they will be resigning rather than risk their health and that of their families by continuing to teach during the COVID-19 pandemic. Beller (as cited in Hui, 2020) also stated the attrition rate appears static because mid-career teachers are not leaving the profession despite having few state pay raises.

In a report on N.C. teachers having taught during the COVID-19 pandemic, Bringle (2020) interviewed educators and found fear of illness to be a major reason for leaving the profession. According to Tamika Walker Kelly, president of N.C. Association of Educators (as cited in Bringle, 2020), "One of the things that we have been seeing are educators who are very concerned about their safety, particularly having to go back into classrooms" (para. 8). Kelly (as cited in Bringle, 2020) continued by stating, "[Educators] are deciding that it is unsustainable, or because their requirements for accommodation have been denied, they're deciding to leave the profession through voluntary resignation or retiring early" (para. 8). In addition to feeling unsafe and at risk of contracting COVID-19 or concerns about passing COVID-19 to someone in their household, N.C. educators are also feeling unduly burdened with the added requirements of teaching virtually or teaching a combination of in-person and virtually (Bringle, 2020). A third reason educators are citing for leaving the profession in N.C. is the recent politicization of education and how in-person education has been split by party lines (Bringle, 2020). Darling-Hammond (2021, as cited in Golodryga & Pomrenze, 2021) stated educator attrition is high nationally due to it being a "neglected profession in the U.S. for a long time" (para. 13), and this attrition will be made worse by the COVID-19 pandemic due to exhaustion and fear so many educators are feeling. Dickler (2021) noted, "the challenges of teaching in-person or online have stretched educators to their limits" (para. 1). Colin

Sharkey, executive director of the Association of American Educators (as cited in Dickler, 2021), stated “teachers have been feeling the brunt of how drastically this pandemic has changed our world” (para. 3). Dickler noted results from the Center for State and Local Government Excellence finding educator satisfaction with their employers dropped from 69% in March 2020 to 44% in October of the same year. Horace Mann (as cited in Dickler, 2021) published a report noting that 77% of educators in the U.S. are working more now than they were a year ago, a full 60% report enjoying their job less, and 59% of educators in the U.S. “do not feel secure in their school’s health and safety precautions” (para. 12).

Childress (2020) noted a continuous decline in educator attrition in recent years, as shown in the N.C. State Board of Education’s Annual Report on the State of the Teaching Profession. Over the past few years, the rate of N.C. educator attrition was 7.5% for the 2018-2019 AY, 8.1% for the 2017-2018 AY, and 8.7% for the 2016-2017 AY (Childress, 2020). The state attrition rate is very close to the federal attrition rate, hovering at 8% (Childress, 2020).

Childress (2020) also noted the attrition rate reported in N.C. only includes educators who have left the state or have left the teaching profession altogether. Educators who leave one school for another or who leave one district for another while staying in N.C. are categorized under mobility rate, not attrition rate. The most recent mobility rate for N.C. is 4.53% (Childress, 2020). Childress shared percentages of N.C. educators and their reported reasons for leaving. Results are in Table 1.

Table 1

Percentages of N.C. Educators Leaving and Reported Reasons

Percentage leaving	Reason for leaving
60%	Personal reasons
23.7%	Beyond control of school district
8%	Initiated by school district
8%	Other reason(s)

Table 1 shows the majority of N.C. educators who left the profession (60%) did so for personal reasons. The annual report shared by the N.C. State Board of Education does not break "personal reasons" down any further. Childress (2020) also reported the levels of experience of the N.C. educators leaving. Levels of experience are shown in Table 2.

Table 2

Levels of Experience of Educators Leaving N.C.

Percentage	Experience
6.8%	Experienced
11.1%	Visiting international faculty who left before their contracts ended
11.3%	Beginning teachers
13.6%	Lateral entry teachers
16.7%	Teach for America educators who left before their contracts ended

Table 2 indicates almost 6.8% of N.C. educators who choose to leave the profession are experienced, having taught for 10 or more years (Childress, 2020). Beginning teachers make up 11.3% of leaving educators, and 13.6% of N.C. educators who leave the profession are lateral entry educators, where teaching is their second career (Childress, 2020). In a report published by Education Policy Analysis Archives (as cited in Brandman University, 2020), nine of 10 teachers hired in the U.S. each year replace educators who chose to leave. As reported, over 66% of educators voluntarily resigned

before retirement in the U.S. (Education Policy Analysis Archives, as cited in Brandman University, 2020).

I examined the most recent N.C. educator attrition rate available; data are located in Appendix A. NCDPI reports to the N.C. General Assembly annually on different areas of educator attrition and this report, published in 2020, shared data from the 2018-2019 AY (NCDPI, 2020). This report classifies attrition by local education agency, which is the public school county or district, as well as by reason for leaving, subject area of assignment, and recoupment rate, among others (NCDPI, 2020). Appendix A shows N.C. educator attrition data by the percentage of teachers leaving and is ranked from the highest percentage of teachers leaving to the lowest percentage of teachers leaving. The top 10 districts with the highest rate of educator attrition are Innovative School District (23.08%), Northampton County Schools (21.85%), Pamlico County Schools (16.50%), Weldon County Schools (15.87%), Washington County Schools (15.24%), Hyde County Schools (13.56%), Warren County Schools (13.25%), Elizabeth City-Pasquotank Public Schools (12.32%), Onslow County Schools (11.89%), and Asheville City Schools (11.58%). The 20 districts with the highest rates of attrition are grouped by N.C. state region in Table 3.

Table 3

Districts With Highest Attrition Rates Grouped by N.C. State Region in Descending Order

District	Region
Innovative School District	Eastern
Northampton County Schools	Eastern
Pamlico County Schools	Eastern
Weldon City Schools	Eastern
Washington County Schools	Eastern
Hyde County Schools	Eastern
Warren County Schools	Piedmont
Elizabeth City – Pasquotank Public Schools	Eastern
Onslow County Schools	Eastern
Asheville City Schools	Mountains
Bertie County Schools	Eastern
Hertford County Schools	Eastern
Caswell County Schools	Piedmont
Anson County Schools	Piedmont
Tyrrell County Schools	Eastern
Lexington City Schools	Piedmont
Craven County Schools	Eastern
Vance County Schools	Piedmont
Hoke County Schools	Eastern
Cumberland County Schools	Eastern

I examined N.C. educator attrition in the 20 counties with the highest percentages of attrition and separated those counties into three geographical regions: eastern region, piedmont region, and mountains region. This geographic divide is commonly used when discussing N.C. regions, as the state naturally falls into these physical regional categories (North Carolina Department of Natural and Cultural Resources, n.d.). Five percent of the 20 counties, or one county, is located in the western mountain region of N.C. Twenty-five percent of the 20 counties, or five counties, are located in the piedmont region. A full 70% of the 20 counties, or 14 counties, are in the eastern region of N.C.

When examining educator attrition due to COVID-19 stress, there is little

quantitative data; however, anecdotal data abound. According to Dickler (2021), “the challenges of teacher in-person or online have stretched educators to their limits” (para. 1). Educators have struggled to connect with students virtually or have put themselves in danger by teaching in-person in the classroom. Dickler continued by noting many educators reported interest in changing careers or in quitting the profession altogether.

History of Pandemics

Long before humans walked the earth, there were pathogens: viruses and bacteria. “Pandemic” has Greek roots, from “pan,” meaning “all,” and “demos,” meaning “people” (Mardon et al., 2020). According to Mardon et al. (2020), pandemics start as a small, isolated outbreak of disease before traveling across the globe. Pandemics often have large economic, societal, and individual consequences before eventually dying out (Mardon et al., 2020).

Throughout time, pandemics have been caused and accelerated by similar catalysts: “warfare, zoonotic spillover, travel, and trade” (Mardon et al., 2020, p. 143). Even before Germ Theory, people were aware diseases moved at the speed of human travel (Mardon et al., 2020). As modes of travel became faster and cheaper, microbes also traveled at a faster rate and over larger distances (Mardon et al., 2020). Technological developments in transportation reduced natural geographic barriers preventing the spread of illness (Mardon et al., 2020). Transportation advancements are not the only factors increasing human vulnerability to bacteria and viruses; population growth and expansion, globalization, habitat destruction and wildlife trade are others (Mardon et al., 2020). As populations have grown, population density increases. This increase means people are in close contact with others and are more likely to spread contagious diseases due to

increased contact with others (Mardon et al., 2020).

Experiencing pandemics throughout history has caused humans to build knowledge about causes and mediators. For example, in the fourth century, Romans commonly believed “the plague was the result of Roman sacrilege and the violation of a divine sanctuary” (Mardon et al., 2020, pp. 25-26). Throughout history, scientists focus on past and current knowledge which frequently changes as more data become available (Leavitt, 2021). As knowledge has grown over time, technologies and public health policies evolved to keep populations healthy in response to greater data (Mardon et al., 2020).

Sars-CoV-2

Sars-CoV-2, also called COVID-19, belongs to a group of viruses able to infect both humans and animals. This particular group of viruses is called a coronavirus. WHO (2020) named the coronavirus disease of 2019 COVID-19. The spread of COVID-19 caused a global pandemic and is thought to have originated in December 2019, in the city of Wuhan, China (Mardon et al., 2020). Scientists believe the virus entered the human population from an animal, possibly a bat.

WHO initially believed COVID-19 to be spread through coughing and sneezing and maintaining a social distance (i.e.. maintaining a distance from others) of 6 feet was sufficient to stop the spread of the virus (Mardon et al., 2020). However, as scientists continued to gather and analyze data from numbers and locations of infections, they determined COVID-19 is also transmissible through speaking. Speaking releases microdroplets of saliva that carry viral particles, which ultimately means COVID-19 can be spread from person to person outside of the 2-meter social distance (Mardon et al.,

2020).

One of the major challenges with tracking and containing the spread of COVID-19 has been individuals who are infected but asymptomatic (Mardon et al., 2020). Infected people who are asymptomatic may shed virus and spread it to others unknowingly. According to Piret and Boivin (2021), up to 40% of COVID-19 cases may present asymptomatically. Infected individuals who do experience symptoms may have a fever, cough, shortness of breath, fatigue, nausea and/or vomiting, diarrhea, headache, weakness, pain, and/or sleep disturbances (Piret & Boivin, 2021). In March 2020, strong protective measures swept the nation "as schools were closed, stay-at-home orders were issued, and news reports broadcasted the climbing death toll, particularly among adults over 60" (Whitehead, 2020, p. 1). The emergence, spread, and containment of pandemics have happened throughout history. Some containment methods used in past pandemics include isolation and quarantine, and those methods have been crucial in containing the spread of COVID-19 (Piret & Boivin, 2021).

Piret and Boivin (2021) also noted statistics on hospitalized patients of COVID-19. Eighty percent of individuals with COVID-19 experience mild symptoms. Between 14% to 19% of infected individuals required hospitalization. Comorbidities such as hypertension; diabetes; cardiovascular disease; cardiopulmonary disease; and chronic diseases of the kidney, liver, and lung have been reported in 60% to 90% of hospitalized patients (Piret & Boivin, 2021). Of the individuals hospitalized, between 3% and 5% require transfer to the intensive care unit. Of the intensive care unit patients, between 21% and 91% need invasive mechanical interventions such as ventilators. In hospitalized patients, there is a 15% to 20% mortality rate. In intensive care unit patients, the mortality

rate increases up to 40% (Piret & Boivin, 2021).

Will (2021) stated stress was a leading cause for educators to leave the field, even more important for attrition or retention than salary. Educator stress was extremely high even before the COVID-19 pandemic (Dilberti et al., 2021; Will, 2021). According to Dilberti et al. (2021), pre-pandemic educators left the field in similar numbers to pandemic educators; however, the majority of educators from both pre-pandemic and pandemic educators left schools in the south of the U.S. However, Dilberti et al. found that 44% of the sample population who left the profession voluntarily and not due to retirement since March 2020 cited COVID-19 as the main reason for their exit from the profession. In this study, the most frequently cited reason for leaving due to COVID-19 was stress and "insufficient pay to merit the risks" (Dilberti et al., 2021, p. 6) of teaching during the pandemic.

Sociopolitical Context

Pathogens have been present and have affected humans for as long as there have been humans on earth. As human populations have increased over time, so has the risk of pandemics (Mardon et al., 2020). Pathogens will likely always be present, and while we will continue to gather data and learn about them, our best protective measures include reducing our exposure and improving our collective and individual responses (Mardon et al., 2020). COVID-19 is now known to be spread through direct contact or through microdroplet transmission (such as through sneezing, coughing, singing, etc.; Mardon et al., 2020). At the time of this study, there is no reliable cure for COVID-19; therefore, infection control and prevention remain the two best methods of protection. Mardon et al. (2020) stated infection control and prevention can "prevent an outbreak from ever

becoming a pandemic" (p. 144).

Green and Bettini (2020) noted the additional unprecedented challenges educators have faced and continue to face during the COVID-19 pandemic. According to Gonzalez et al. (1990), accepting personal responsibility for decisions and actions is a coping mechanism that applies to social situations. During the COVID-19 pandemic, "powerful political forces have deemed mask-wearing an affront to personal liberty" (Leavitt, 2021, p. 997). Leavitt (2021) continued by stating COVID-19 came about during a time of low public trust in science and government. A prevalent distrust made previous knowledge gained, such as the benefits of the face mask during the 1918 influenza outbreak, a political issue rather than a scientific one. The U.S. has already generated a "significant history of political wariness about government programs and a diminution of financial support for public health departments" (Leavitt, 2021, p. 997), leading to underfunded departments and a general distrust of government initiatives. Further, systematic inequalities in the health care field due to race, class, and gender also play a role in the public's response to the pandemic (Leavitt, 2021; Marinković & Major, 2020). The U.S. health care system does not care for all patients equally and has not done so for the entirety of its existence; these inequities have caused many underrepresented patients to feel distrust for health care providers (Leavitt, 2021). Consequently, many populations of Americans feel they cannot trust medical recommendations about treatments and vaccinations (Leavitt, 2021). The Tuskegee experiment is the biggest historical influence on Black Americans to get vaccinated (B. Clarke, personal communication, October 15, 2021). Leavitt continued, noting the irony "that masks today, which are so politicized that many supporters of one political party will not wear them, are extremely effective against

disease transmission" (p. 997). This politicization of masks has manifested in the classroom and is an added COVID-19 pandemic-caused stressor on educators as they work to enforce district and statewide mask mandates.

Butler (2020, as cited in Marinković & Major, 2020) stated, "the virus alone does not discriminate, but we as humans surely do, formed and animated as we are by the interlocking powers of nationalism, racism, xenophobia, and capitalism" (p. 488). The COVID-19 pandemic caused

> profound social, economic, and political changes across the globe, ranging from the imposition of a state of emergency and measures designed to completely or partially restrict movement, travel, and mobility, the flow of goods, changes in the health and legal system, all the way down to the (suspension) of many everyday cultural practices. (Marinković & Major, 2020, p. 495)

Further, Sageena and Balwan (2020) discussed the "spread of confounding chaos of misleading information" (p. 7668) due partly to the increased use of social media during lockdowns and quarantines. As the use of social media increased during the COVID-19 pandemic, so did increasing politicization of pandemic issues; this included the spreading of "manipulated notifications, miracle cures and fabricated solutions" (Sageena & Balwan, 2020, p. 7669). Untrained and uninformed individuals are assuming the job of science specialists and attempting to spread unsubstantiated claims (Sageena & Balwan, 2020). Ferenczi (1933, as cited in Bohleber, 2010) acknowledged that "the effect of lies and deceit as a traumatizing factor" (para. 10) and the effect of misinformation during the COVID-19 pandemic cannot be understated. In fact, WHO (2020; Pulido et al., 2020, as cited in Marinković & Major, 2020) "labeled the situation as an *infodemic*,

due to the amount of information, true and false, circulating around this topic" (p. 498). This intentionally planned misinformation is yet another challenge educators face and continue to face in the classroom.

Trauma

Farmer (2020) noted the impact of traumatic events on educators, noting that 60% of educators left Columbine High School following the infamous shooting in 1999. However, after violent events occur at schools, leaders often focus (if only for a short while) on how to keep students and educators safe from future physical harm (Ansley et al., 2018). Bohleber (2010) stated trauma is essentially experiencing "too much" (para. 3), and the traumatic effects of an event depend on how unexpectedly the event occurs. What is lacking following traumatic events is an authentic and sustained effort to address the physical and mental well-being of educators (Ansley et al., 2018). The COVID-19 pandemic can be considered a large-scale traumatic event. Bohleber noted trauma "is indelibly recorded in the body and has a direct effect on the organic substrate of mental functioning" (para. 3).

Green and Bettini (2020) noted the additional unprecedented challenges educators have faced and continue to face during the COVID-19 pandemic. Educators have been giving more time than ever to social and emotional learning and mental health support for students (Green & Bettini, 2020). The COVID-19 pandemic has caused and worsened various traumas for students, including family members' illness and/or death, loss of employment, and loss of routine and structure, etc. (Green & Bettini, 2020). These traumas may present in the classroom as "emotional reactivity and poor emotional regulation, mechanisms that lead to the same externalizing behaviors" (McLaughlin &

Lambert, 2017, as cited in Green & Bettini, 2020, para. 4). Green and Bettini acknowledged teacher reports of feeling unprepared and untrained to appropriately care for the mental health needs of students following an experience of these traumas related to the COVID-19 pandemic. The feeling of being overwhelmed is one emotion many educators have felt since the beginning of the COVID-19 pandemic, and feeling overwhelmed can, itself, have a traumatizing effect (Bohleber, 2010; Brackett & Cipriano, 2020).

Collective Trauma

Fear. Mertens et al. (2020) stated fear is an "adaptive emotion that serves to mobilize energy to deal with potential threats" (Introduction section). Fear is very useful, particularly in stressful or dangerous situations. However, if the fear level is not matched well with the situation (for example, when an individual perceives stress or danger that is not actually dangerous), it can be harmful to the individual (Mertens et al., 2020). When individuals experience less fear than a situation requires, the individuals participate in reckless behaviors harming themselves or others, such as ignoring lockdown orders or refusing to wear masks (Mertens et al., 2020). Mertens et al. also noted the paradoxical effect of excessive fear, causing safety-enhancing behaviors, such as hand washing, to reduce the likelihood of infection, noting the negative effects of prolonged or extreme fear, such as job loss.

Isolation. Due to the COVID-19 pandemic and the rapidity of its spread, the highly contagious nature of the virus, and the lack of knowledge researchers had, many governments around the world mandated lockdown measures to prevent the spread of the virus (Mertens et al., 2020). Governor Cooper was not the first governor to issue orders to

close large parts of a state and was not the last, and it came at great cost to the citizens of N.C. These executive orders required all businesses to close, except those deemed necessary for life and health. Those who remained open included grocery stores, pharmacies, and gas stations. Human service, health care, and instrumental operations also remained open. Workers were all expected to maintain appropriate social distancing strategies while at work. When experiencing stressors, seeking social support is a common and often highly effective coping mechanism provided by social supports reduced or eliminated through COVID-19 quarantine and social distancing restrictions (Gonzalez et al., 1990; Mardon et al., 2020). Gonzalez et al. (1990) noted social support improves self-efficacy and coping, two conditions of social support which significantly decreased due to the COVID-19 pandemic.

Secondary Trauma. When conflict is present, whether in individuals, in schools, or in society, the role of the educator cannot be understated (Noah-Pinheiro, 2017). Noah-Pinheiro (2017) noted when conflict or trauma occurs, any stress present prior to the conflict is only worsened. The daily stressors of teaching, manifested in low pay, decreasing societal respect, and increasingly challenging working conditions such as larger class sizes and students with extreme behaviors, are amplified and impact educator psychological and physical well-being (Noah-Pinheiro, 2017).

Compassion Fatigue. Farmer (2020) noted compassion fatigue is more common in people who work in professions in which they advocate for or care for others. Compassion fatigue is caused by emotionally charged situations, and Farmer also stated compassion fatigue is inevitable for people who work advocating for children. While this is a strong assertion, it is one that cannot be downplayed or ignored. Further, because of

the sheer volume of children with whom educators work, it is very likely for educators to work with children who have experienced trauma themselves (Farmer, 2020; Kendrick, 2021). Working with traumatized individuals, even while not having experienced direct trauma, can lead to "indirect symptoms such as interpersonal isolation, diminished professional performance, and behavioral changes" (Farmer, 2020, p. 44). Hupe and Stevenson (2019, as cited in Farmer, 2020) noted teachers who have experienced secondary trauma or traumatic stress reported feelings of self-doubt, blame, restlessness, and "haunting imagery of the children" (p. 44).

These factors, which can be directly linked to the traumas experienced during the COVID-19 pandemic, have caused educator morale and mental health to plummet (Will, 2021). Researchers noted half of the educators who left teaching since March 2020 stated COVID-19 was the main reason for leaving (Will, 2021). Stress and childcare concerns also topped the list for COVID-19-related voluntary resignations (Will, 2021).

The connection between occupational stress and poor health outcomes suggests there are multiple, linked causes for educator attrition (Holt et al., 2020). According to Brackett and Cipriano (2020), educators responding to a March 2020 survey soliciting information about teaching during the COVID-19 pandemic stated the most commonly reported emotions were *anxious, fearful, worried, overwhelmed,* and *sad.* A similar survey was conducted in 2017, and the top emotions reported by educators were *frustrated, overwhelmed, stressed, tired,* and *happy* (Brackett & Cipriano, 2020). It is no secret that educator burnout and attrition have been increasing, even before the pandemic (Brackett & Cipriano, 2020). It is natural to assume the COVID-19 pandemic has only increased feelings of poor health and occupational burnout.

Chapter 3: Methodology

Overview

The purpose of this study was to investigate relationships between educator perceptions of COVID stress, physical and mental symptoms, and feelings of occupational burnout. Because of the relative newness of the COVID-19 pandemic, little research on the connection between the pandemic and teacher feelings of occupational burnout exists. I used three instruments to assess N.C. public school educator perceptions of stress and teaching during the COVID-19 pandemic: CSS, PHQ, and MBI-ES. I combined these three survey instruments into one online survey instrument administered using Qualtrics, an online survey platform. Qualtrics is the Gardner-Webb University-approved survey administration tool. I also offered participants the opportunity to schedule a follow-up interview, conducted virtually via Google Meet. I increased the validity of my study by data triangulation; that is, using the four different data sources of the CSS, PHQ, MBI-ES, and participant interviews (Creswell & Creswell, 2018).

I looked for any repeated themes converging from the different sources during the coding process. Additionally, I utilized member checking by asking the interview participants to review the transcripts of our interview. This strategy improved the accuracy of my interview-based data. By checking to see if the participant believed my transcription was accurate, this process added to the validity of my study. In order to prove my approach was as reliable as possible, I documented in detail the procedures and protocol (Janesick, 2016). These procedures included checking transcripts for accuracy and coding as accurately as possible.

Research Questions

Through this study, I explored how K-12 public school educators perceive their levels of physical and mental health, stress, and professional burnout. I investigated educator perceptions of whether teaching during the COVID-19 pandemic has impacted those levels. I explored these topics through the following inferential research questions:

1. What are the relationships between COVID-19 stress and the physical and mental health of N.C. K-12 public school educators?
2. What are the relationships between COVID-19 stress and N.C. K-12 public school educator burnout?
3. What are N.C. K-12 public school educator perceptions of the impact of teaching during the COVID-19 pandemic?

Alignment of Methodology

My study methods were aligned as shown in Appendix B. This table shows alignment between my research questions and instruments for data collection. I gathered quantitative data to address Research Question 1 by including the CSS. I gathered quantitative data to address Research Question 2 by including the PHQ. I gathered quantitative data to address Research Question 3 by including the MBI-ES. With data from all three instruments, I performed correlation analysis to determine if COVID-19 stress does or does not have an impact on physical health, mental health, and feelings of burnout for N.C. educators. Further, I also used correlation analysis to attempt to determine the values of the strength of the relationships between COVID stress and physical health, COVID stress and mental health, and COVID stress and occupational burnout. I gathered qualitative data to address Research Question 3 by conducting

interviews with willing survey participants.

Study Type

The study conducted was a mixed methods study. The mixed methods approach allowed me to utilize close-ended questions for participants to self-report perceptions and experiences. The items all utilized Likert-type, continuous, interval scaled continua (Urdan, 2017). These data were collected through the online survey program Qualtrics and allowed for statistical interpretation (Creswell & Creswell, 2018). I used quantitative instruments through the use of the CSS, the MBI-ES, and the PHQ.

Through correlation analysis, I investigated associations between participants' reported levels of COVID stress and physical and mental symptoms and the strength of the associations. I also investigated any associations between participants' reported levels of COVID stress and feelings of occupational burnout. For this analysis, I used Pearson's correlation coefficient. Through correlation analysis, I attempted to assess the strength of the relationship between COVID stress and physical health, COVID stress and mental health, and COVID stress and occupational burnout. Further, I aimed to predict future burnout in N.C. educators based on the level of reported COVID stress. Due to the mixed methods nature of this study, utilizing both quantitative and qualitative data, I hoped to apply both descriptive and inferential statistics (Urdan, 2017). Descriptive statistics applied to my sample participants, while I hoped to draw some conclusions through inferential statistics that would be potentially applicable to N.C. public school educators even if they did not participate (Urdan, 2017).

Additionally, I gathered qualitative data by offering N.C. K-12 educators the opportunity to participate in an interview. These interviews allowed for the inclusion of

open-ended questions and responses to be analyzed for themes and patterns (Creswell & Creswell, 2018). Survey participants were asked as a final survey question if they would like to participate in an interview session to further explore their experiences teaching during COVID-19. Interviews were recorded, open-ended questions were asked, and responses were transcribed and coded for commonalities and themes. I anticipated themes including the three domains of burnout; experiences of stress, depression, and anxiety; and thoughts of leaving the profession.

Study Sample and Population

As of the 2020-2021 AY, there were 93,461 public school educators in N.C. If I had at least 100 participants, my margin of error would be ± 10%. While this margin of error is large, 100 participants was the minimum for which I was aiming.

The sample for this study consisted of N.C. K-12 public school educators recruited via Facebook, a commonly used social media platform. These educators were recruited from eight specific professional educator groups on Facebook through convenience sampling (Creswell & Creswell, 2018). The eight groups are located in Appendix C. While I may know some educators personally, I was not specifically soliciting educators with whom I have a personal relationship. According to Creswell and Creswell (2018), this type of sampling is non-probability sampling. This type of sampling is commonly used in exploratory and qualitative research. Every individual has a chance of being included, and criteria are non-random (Creswell & Creswell, 2018). I set wide criteria filters intentionally to include all N.C. K-12 public school educators who wanted to participate.

Participating educators teach any grade level from kindergarten through 12th

grade at any public school in N.C. Recruitment could have also resulted in the inclusion of educators in the exceptional children's program and teachers of electives or special classes, such as art, physical education, and band, as long as they worked with students between the specified grade levels at a public school in N.C. Appendix C shows the Facebook groups I used to recruit study participants; whether there are existing group rules prohibiting solicitation for research; and whether group administrator permission, if needed, was granted or denied for solicitation. I selected the eight groups to approach first because they support educators who work in N.C. If the initial round of survey collection failed to yield at least 100 participant responses, I reposted my solicitation request to each group. I ruled out the bottom section of groups due to permission being denied.

Participants were recruited with a specific script posted in professional educator groups on Facebook with group administrator approval. The script is in Appendix D. The script included a greeting and reached out to N.C. educators who teach at a public school between kindergarten and 12th grade. I explained the responses to the survey questions would help add to the growing research on the perceptions of educators who have been teaching during the COVID-19 pandemic. I explained participation was voluntary and responses would be kept confidential and de-identified (if an email address is provided). For participants who chose to schedule a follow-up interview, they were asked to provide their contact information. However, this information was provided voluntarily and outside of the survey in a separate Google form. The email addresses collected were not associated with participant survey responses in any way. Any information possibly allowing for the identification of participants was removed to allow for the added

protection of participants.

The population for this study was K-12 educators in N.C. teaching at public schools. Since fewer than 100 educators participated, I reposted my solicitation post in each group three times prior to closing the survey. The survey was open for 5 weeks. If more than three participants were to elect to participate in a follow-up interview, I planned to select one educator from each region of N.C. (North Carolina Department of Natural and Cultural Resources, n.d.). However, I only had two educators elect to participate, so the selection process was not necessary.

Quantitative Inquiry

I used the CSS to quantitatively assess educator feelings related to COVID stress, the PHQ to measure physical and mental symptoms, and the MBI-ES to assess educator feelings of occupational burnout.

Measures

The data collected from the three instruments were analyzed using Pearson's correlation coefficient. Correlation values were determined for each individual CSS domain and each individual PHQ domain and then for the overall CSS and overall PHQ scores. Correlation values were determined for each individual CSS domain and each individual MBI-ES domain and then for the overall CSS and MBI-ES scores.

To measure participant perceived levels of stress related to COVID-19, I used the CSS. To measure participant perceived levels of mental and physical health concerns during the time of the pandemic, I used PHQ. To measure participant perceived levels of occupational burnout, I used MBI-ES.

Instruments

CSS

According to Taylor et al. (2020), initial reports from China indicated more than 25% of the population of China experienced moderate to severe levels of stress and anxiety symptoms related to the COVID-19 pandemic. Because anxiety or the lack of anxiety is a significant predictor and driver of behavior, government decision makers and leaders should understand the potential negative consequences of adverse psychological responses to the pandemic (Taylor et al., 2020). The CSS were created by Taylor et al. in response to the COVID-19 pandemic and were designed to measure

> fear and anxiety-related distress responses that include the following: fear of becoming infected, fear of coming into contact with possibly contaminated objects or surfaces, fear of foreigners who might be carrying infection (i.e. disease-related xenophobia), fear of the social-economic consequences of the pandemic (e.g. job loss), compulsive checking and reassurance-seeking regarding possible pandemic related threats, and traumatic stress symptoms about the pandemic (e.g., nightmares, intrusive thoughts). (Introduction section)

Taylor et al. (2020) acknowledged the mental health response to traumatic or extremely stressful events can include anxiety which can then lead to disruptive behaviors. Taylor et al. saw a need for these potential behaviors and responses to be explored within the context of the COVID-19 pandemic. The CSS were developed in 2019 and examined for internal consistency, reliability, and convergent and discriminant validity in 2020. The initial scale was administered in the U.S. and Canada during the beginning of the pandemic, during which time many individuals were experiencing

emotional distress (Taylor et al., 2020). A participant sample from Canada and a participant sample from the U.S. were used to collect data on the 36-item measure. Participants self-reported online through Qualtrics. The CSS include items in five domains: (a) COVID danger and contamination fears, (b) COVID fears about economic consequences, (c) COVID xenophobia, (d) COVID compulsive checking and reassurance seeking, and (e) COVID traumatic stress symptoms. While I am not seeking to gather data on economic consequences or xenophobia, Taylor and Asmundson via Rachor (personal communication, September 1, 2021) recommended against omitting the items from economic consequences and xenophobia domains. These personal communications are located in Appendix E. Maintaining their inclusion allowed me to compile a total score indicating or contraindicating participant experiences of COVID Stress Syndrome.

The CSS allow participants to rate their experiences in each of the five domains on a 5-point Likert-type scale from 0 (never) to 4 (almost always). The initial survey was created via Qualtrics and incomplete responses were filtered out by Taylor et al. (2020). The final sample included 6,854 adults from Canada and the U.S. The 53 items included items assessing the five described domains and participant demographic information, education history, and ethnicity. Taylor et al. validated the CSS through results collected from 6,854 adults in the U.S. and Canada. The authors asked participants to consider their feelings over the last 7 days; this week-long window was selected because “fears about COVID-19 may change over time as the pandemic unfolds” (Taylor et al., 2020, p. 2). I decided to open this window for participants to consider their overall feelings over the duration of the pandemic. In previous anxiety-related studies, the authors found that six-item scales “provided a good balance between brevity and reliability” (Taylor et al.,

2020, p. 2). Further, Taylor et al. used multiple quantitative analysis procedures to identify exploratory factor analysis and goodness-of-fit data.

Creators assessed reliability using Cronbach's coefficient alpha, and the measure for statistical significance was set at 0.01 due to the number of statistical analyses in the initial study. The initial study found all Cronbach alpha coefficients being > .80, suggesting "good-to-excellent reliability as internal consistency" (Taylor et al., 2020, p. 4). Taylor et al. (2020) also correlated the new CSS to pre-COVID measures of health anxiety; all correlations were statistically significant ($p < .001$), and all but two were medium-to-large in magnitude, supporting convergent validity of the CSS. Taylor et al. reported the CSS "performed well on various indices of reliability and validity" (p. 6). Taylor et al. intercorrelated the CSS, providing further evidence of a COVID-19 Stress Syndrome. The CSS items are in Appendix F.

PHQ

The PHQ is a 58-item survey in public domain. Drs. Spitzer, Williams, Kroenke, and colleagues, with funding from Pfizer Inc., created the original instrument. Several versions have been used, derived from the full PHQ, such as the PHQ-15 and the PHQ-9 (designed to be shorter than the full 58-item PHQ) as well as specific PHQ scales to screen for depression and anxiety in both adults and adolescents (Gierk et al., 2014).

According to Gierk et al. (2014) and the Pfizer (2021) Patient-Centered Outcomes Assessment, the PHQ is a well-validated instrument using a 3- and 4-point Likert scale and dichotomous (yes/no) responses. The PHQ was created and validated in the 1990s. The PRIME-MD was the initial instrument but was seen as a barrier to clinical practice as it took physicians too long to administer (Pfizer, 2021). Due to difficulties physicians

experienced in administering the PRIME-MD, researchers conducted a study involving 6,000 patients who self-administered the PRIME-MD. The patients were followed up with by physicians who then determined PRIME-MD could be effectively and reliably self-administered. The instrument was then called PHQ. The full PHQ is a combination of shorter PHQ scales meant to assess specific psychological or physical complaints. The PHQ-9 is a scale to measure depression, while the PHQ-15 is a somatic symptom scale, and the GAD-7 is a generalized anxiety scale (Pfizer, 2021).

There is an additional PHQ scale specifically for adolescents as well. Each individual PHQ scale can be used alone, with a combination of other PHQ scales, or as part of the full PHQ as in this study (Pfizer, 2021). The full PHQ "can be used to establish provisional diagnoses for selected DSM-IV [Diagnostic and Statistical Manual] disorders" (Pfizer, 2021, para. 4). The data that came from the PHQ helped me determine the prevalence and severity of physical and mental well-being concerns in N.C. public school educators. I analyzed statistical trends relating to COVID-19 stress, physical and mental health, and occupational burnout and did not make any diagnoses.

The diagnostic algorithm for scoring the PHQ involves a participant scoring a certain number of "yes" responses or having a specific frequency of symptoms for clusters of items. The diagnostic algorithm describes how the PHQ is coded and how possible disorders are identified. For example, if a participant responds "yes," to one or more items from 10a-e, the participant is likely to be experiencing alcohol abuse. I was unable to determine whether there was or was not an "adequate biological explanation," so I relied simply on the quantitative data gathered through Qualtrics. I was also not able to assess additional clinical considerations, nor was I qualified to do so since I am not a

medical clinician. Through this study, I correlated perceptions of COVID stress, physical and/or mental symptoms, and occupational burnout.

The full PHQ and each of the subscales individually have been assessed for internal consistency, all showing Cronbach alphas between 0.86 and 0.89, indicating strong internal consistency. Since I made no diagnoses from participant responses, I did not consider the diagnostic validity, although the diagnostic validity and reliability both show "sound psychometric properties" (APA, 2011, para. 2).

The PHQ includes severity scores in addition to frequency scores. For example, participants were asked if they experienced an anxiety attack during the course of the pandemic. The item response choices are binary: (0) no, or (1) yes. Participants were also asked the severity of symptoms, such as stomach pain: (0) not bothered, (1) bothered a little, or (2) bothered a lot. Participants were asked to consider the frequency of symptoms, such as feeling depressed: (0) not at all, (1) several days, (2) more than half the days, or (3) nearly every day. While the PHQ asks patients to consider their symptoms and perceptions during various periods of time (during the last 4 weeks, during the last 2 weeks, during the last 3 months, or during the last 6 months), I explored the health statuses of participants over the course of the pandemic, so this is the time period I asked participants to consider. Because the pandemic is a large-scale event fresh in the collective memory, I anticipated participants being able to delineate current, pandemic times to pre-pandemic times (prior to March 2020). The PHQ is in Appendix G.

MBI-ES

MBI-ES was written in 1986 by Christina Maslach, Susan E. Jackson, and Richard L. Schwab. The purpose of the MBI-ES is to "discover how educators view their

job and the people with whom they work closely" (Maslach & Jackson, 1986, para. 1). Participants respond on a 7-point Likert scale to statements such as, "I feel emotionally drained from my work" and "I don't really care what happens to some students." Likert-type responses range from "never," 0, to "every day," 6. There are three subscales within the survey, corresponding to the three dimensions of burnout: emotional exhaustion, depersonalization, and personal accomplishment. Chalghaf et al. (2019) through a comparison of studies by Iwanicki and Schwab (1981) and Gold (1984) found Cronbach's alpha estimates to describe MBI-ES reliability of between 0.88 to 0.90 for emotional exhaustion, 0.74 to 0.76 for depersonalization, and 0.72 to 0.76 for personal accomplishment. These scores indicate a strong measure of reliability. The sample questions of the MBI-ES allowed for open publication are located in Appendix B.

Quantitative Analysis

In order to determine the relationship between COVID-19 stress and physical and mental health during the time of the pandemic, a Pearson correlation was performed. The strength of the relationships, direction of relationships, and significance are reported and presented graphically in the form of a correlation matrix. To measure the individual domains in the surveys, new variables were computed. For the CSS, these domains were danger and contamination fears, fears about socioeconomic consequences related to the pandemic, xenophobia, compulsive checking and reassurance seeking, and traumatic stress symptoms. For PHQ, these domains were physical symptoms, symptoms of depression, anxiety attacks, symptoms of anxiety, physical symptoms and mental symptoms, eating habits, eating behaviors, alcohol use, and frequency of problems. For MBI-ES, the domains were emotional exhaustion, depersonalization, and personal

accomplishment.

Qualitative Inquiry

I used semi-structured virtual interviews to gather data from participants about their perceptions of teaching during the pandemic.

Interviews

Interviews were conducted face-to-face utilizing the virtual meeting application Google Meet, allowing the interviews to last longer than 40 minutes, because the Zoom version to which I have access would cut the meeting off at 40 minutes. I reached out to interested participants within 24 hours of submission of the survey in Qualtrics with additional details about participating in the virtual meeting format. The interviews were semi-structured with three planned questions. During the interviews, participants were asked the following:

1. Tell me about your current position and what a typical day at school looks like for you.
2. Describe your experience of teaching during the COVID-19 pandemic.
3. Is there anything else you'd like to share that we haven't covered?

I wanted participants to be able to steer the direction of their responses in a way that was meaningful for them, so a semi-structured interview was the format of choice.

Researcher-as-Instrument

According to Pezalla et al. (2012), I, as the researcher, am considered an instrument due to the fact I have unique qualities and characteristics that may influence participant responses and/or the collection and analysis of empirical data. It is likely my interview question choices, my verbal and non-verbal communication choices, and my

interpretation of participant responses influenced the qualitative data.

Script and Questions

Prior to beginning the interview, I provided participants with information about and an introduction to the interview. The script for this portion of the interview is in Appendix D. At the beginning of the interview, I thanked the participants and reminded them of the purpose of the study and that participation was voluntary and could cease at any time without consequences. I began by asking a general question about the participant's current position. Then I asked the participant to describe their experience teaching during the COVID-19 pandemic. I reminded them this can refer to any time during the N.C. shutdown of schools, in March 2020, to the present. I asked participants if there was anything they would like to share that they had not been asked about their experience of teaching during the COVID-19 pandemic. Throughout the interview, I utilized probing questions as appropriate. These may not have been the same from interview to interview or used in the same place within the interview, because participant responses were varied.

I recorded, transcribed, and coded the interviews for any emerging themes. My transcribing process was aided by Otter.AI, an online software transcription assistant. Otter.AI is a software assistant designed to create transcripts of meetings, interviews, or other voice-based interactions. This program assisted me in creating interview transcripts in a timely manner. I carefully checked the transcripts created for accuracy and made adjustments and edits as needed. I also sent a copy of the transcribed interview script to each interview participant to participate in member checking for accuracy. Neither participant provided feedback on the transcripts. Prior to analysis, I anticipated several

common themes to emerge from the interviews, including stress, exhaustion, anxiety, depression, and occupational burnout.

Protection of Participants

Participation was voluntary for both the Qualtrics survey and the follow-up interview. Participants had the choice to self-identify the N.C. county in which they work and their grade level or area of teaching. Participants also had the right not to disclose that information, as some rural counties are much smaller than others and educators may have felt able to answer more honestly if they had the option of complete anonymity or confidentiality. Data collected were anonymous if participants chose not to participate in a follow-up interview; therefore, they did not give their email addresses. I had no way of knowing who submitted what response. The only way responses were able to be identified is by N.C. county. However, at the end of the survey, participants were asked if they would like to participate in a follow-up interview. If they chose to participate in the follow-up interview, they needed to provide contact information. Their survey responses are completely confidential, and participants who chose to do an interview elected to do so in a separate window from the Qualtrics survey. Survey responses of participants wishing to participate in a follow-up interview were de-identified. Personal identifying information was kept until the follow-up interview was conducted. After the interview was completed, it was securely deleted. If participants did not wish to participate in a follow-up interview, no contact information was collected. All survey responses will be kept on my password-protected laptop for a period of 3 years and then destroyed.

Chapter 4: Results

Introduction

The unit of analysis of a research study is "the concept, idea, or action that illuminates the significant features of…data so that the [research question] can be answered" (Foss & Waters, 2016, p. 243). My unit of study is the impact of teaching during the COVID-19 pandemic on educator burnout. In this chapter, I present data related to correlations between the CSS domains and PHQ domains, the CSS overall total and PHQ overall total, the CSS overall total and MBI-ES overall total, and finally the CSS total and educators' intent to return to teaching for the upcoming AY. I also present qualitative data from participant interviews.

Collection and Analysis of Quantitative Data

In this section, I review applicable categories of statistics and results pertaining to the quantitative data (CSS data, PHQ data, and MBI-ES data). The data from each instrument were first obtained using Pearson's correlation coefficient between each domain of the CSS and PHQ and between each domain of the CSS and MBI-ES, before correlating the overall scores between the CSS and PHQ and the CSS and MBI-ES. The strength of the relationships, direction of relationships, and significance will be reported and presented graphically in the form of a correlation matrix. To measure the individual domains in the surveys, new variables were computed. For the CSS, these domains were danger and contamination fears, fears about socioeconomic consequences related to the pandemic, xenophobia, compulsive checking and reassurance seeking, and traumatic stress symptoms. For PHQ, these domains were physical symptoms, symptoms of depression, anxiety attacks, symptoms of anxiety, physical symptoms and mental symptoms (as a separate domain), eating habits, eating behaviors, alcohol use, and

frequency of problems. For MBI-ES, the domains were emotional exhaustion, depersonalization, and personal accomplishment.

Descriptive Statistics

The sample population for this study was N.C. public school educators (from kindergarten through 12th grades). Educators may have taught any subject or combination of grade levels/subjects, as long as they were employed at a public school district in N.C. at the time of taking the survey. Through these decisions, I rejected using representative sampling and opted for random convenience sampling instead, with the goal of collecting data from at least 100 participants spanning N.C.

Quantitative Results

Through Research Question 1, I asked, "What are the relationships between COVID-19 stress and the physical and mental health of N.C. K-12 public school educators?" Hypothesis 1 addressed this research question and stated, "Teaching during the COVID-19 pandemic will be shown to significantly impact N.C. educator physical and mental health."

Through Research Question 2, I asked, "What are the relationships between COVID-19 stress and N.C. K-12 public school educator burnout?" Hypothesis 2 addressed Research Question 2 and stated, "Teaching during the COVID-19 pandemic will be shown to significantly impact N.C. educator burnout."

Item 1

Item 1 asked, "Are you a public school educator in N.C. who works with students, in any capacity, from kindergarten through 12th grade? (If 'No,' please exit the survey. Thank you for your time.)." The results of this item are dichotomous, with participants

either selecting “yes” or “no.” All participants selected “yes,” they are a public school educator in N.C. who works with students, in any capacity, from kindergarten through 12th grade. Of 87 participants, 100% selected “yes.”

Item 2

Item 2 asked, “In what N.C. county do you work?” I performed spatial analysis to come up with the number and percentage of participants from each of the three regions of N.C. Table 4 shows the distribution of participants across the three geographical regions of N.C.

Table 4

Percentages of Survey Participants From Each N.C. Region

Region	Number of participants	Percentage of participants	Total survey participants
Eastern	10	11%	91
Piedmont	7	7.7%	91
Western	48	52.8%	91

Table 4 shows the majority of survey participants are employed in the western region of N.C. (52.8%, or 48 of 91 participants). The second-highest number of participants work in the eastern region of the state (10 of 91, or 11%), and the smallest number of participants work in the piedmont region (seven of 91, or 7.7%).

CSS

The CSS contain a total of 30 items in groups of six by topic, or domain, to assess participant level of stress in each of the following five domains: danger and contamination fears, fears about socioeconomic consequences related to the pandemic, xenophobia, compulsive checking and reassurance seeking, and traumatic stress symptoms. Table 5 shows the CSS domains and corresponding items. Table 5

corresponds to Survey Items 3-7.

Table 5

CSS Domains and Items

Domain	Survey item	Items
1: DAN	3	I am worried about catching the virus.
		I am worried that I can't keep my family safe from the virus.
		I am worried that our healthcare system won't be able to protect my loved ones.
		I am worried that our healthcare system is unable to keep me safe from the virus.
		I am worried that basic hygiene (e.g., handwashing) is not enough to keep me safe from the virus.
		I am worried that social distancing is not enough to keep me safe from the virus.
2: SEC	4	I am worried about grocery stores running out of food.
		I am worried that grocery stores will close down.
		I am worried about grocery stores running out of cleaning or disinfectant supplies.
		I am worried about grocery stores running out of cold or flu remedies.
		I am worried about grocery stores running out of water.
		I am worried about pharmacies running out of prescription medicines.
		I am worried that foreigners are spreading the virus in my country.
3: XEN	7	If I went to a restaurant that specialized in foreign foods, I'd be worried about catching the virus.
		I am worried about coming into contact with foreigners because they might have the virus.
		If I met a person from a foreign country, I'd be worried they might have the virus.
		If I was in an elevator with a group of foreigners, I'd be worried that they're infected with the virus.
		I am worried that foreigners are spreading the virus because they're not as clean as we are.
4: CHE	5	I am worried that if I touched something in a public space (e.g. handrail, door handle), I would catch the virus.
		I am worried that if someone coughed or sneezed near me, I would catch the virus.
		I am worried that people around me will infect me with the virus.
		I am worried about taking change in cash interactions.
		I am worried that I might catch the virus from handling money or a debit machine.
		I worry that my mail has been contaminated by mail handlers.
5: TSS	6	I have trouble concentrating because I keep thinking about the virus.
		Disturbing mental images about the virus popped into my mind against my will.
		I have trouble sleeping because I worry about the virus.
		I thought about the virus when I didn't mean to.
		Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart.
		I have bad dreams about the virus.

Note. DAN=danger and contamination fears, SEC=fears about socioeconomic consequences related to the pandemic, XEN=xenophobia, CHE=compulsive checking and reassurance seeking, and TSS= traumatic stress symptoms.

Table 5 shows the five domains of the CSS and each survey item's CSS domain and corresponding survey item. Domain 1 includes statements regarding one's fears of danger and contamination with COVID-19. Domain 2 includes items asking about fears about socioeconomic consequences related to the COVID-19 pandemic. Domain 3 asks participants about fears related to foreigners in order to assess xenophobic tendencies within the context of COVID-19. Because I was not interested in xenophobic tendencies within the context of the pandemic, I moved this domain to the end of the CSS section of the survey (Item 7). Domain 4 assesses one's compulsive checking and reassurance-seeking behaviors. Domain 5 includes items to evaluate participant levels of traumatic stress symptoms secondary to the COVID-19 pandemic.

PHQ

PHQ contains a total of 60 items in groups by topic, or domain, to assess participant level of stress in each of the following domains: general physical symptoms, symptoms of depression, symptoms of anxiety, anxiety attacks, physical symptoms and mental symptoms, appetite, eating behaviors, alcohol use, and frequency of problems. Table 5 shows PHQ domains and corresponding items. Table 6 corresponds to Survey Items 8-16.

Table 6

PHQ Domains and Items

Domain	Survey item	Item
1: Physical symptoms	8	Stomach pain Back pain Pain in your arms, legs, or joints (knees, hips, etc.) Menstrual cramps or other problems with periods (if applicable to you. If not applicable, please leave blank.) Headaches Chest pain Dizziness Fainting spells Feeling your heart pound or race Shortness of breath Pain or problems during sexual intercourse Constipation, loose bowels, or diarrhea Nausea, gas, or indigestion Feeling tired or having low energy Trouble sleeping
2: Symptoms of depression	9	Little interest or pleasure in doing things Feeling down, depressed, or hopeless Trouble falling or staying asleep, or sleeping too much Feeling tired or having little energy Poor appetite or overeating Trouble concentrating on things, such as reading the newspaper or watching television Moving or speaking so slowly that other people have noticed? Or the opposite- being so fidgety or restless that you have been moving around a lot more than usual. Thoughts that you would be better off dead or of hurting yourself in some way.
3: Anxiety attacks	10	Have you had an anxiety attack- suddenly feeling fear or panic? Has this happened prior to the pandemic? Do some of these attacks come suddenly out of the blue- that is, in situations where you don't expect to be nervous or uncomfortable? Do these attacks bother you a lot or are you worried about having another attack?
4: Symptoms of anxiety	11	Were you short of breath? Did your heart race, pound or skip? Did you have chest pain or pressure? Did you sweat? Did you feel as if you were choking? Did you have hot flashes or chills? Did you have nausea or an upset stomach, or the feeling that you were going to have diarrhea? Did you feel dizzy, unsteady, or faint? Did you have tingling or numbness in parts of your body? Were you afraid you were dying?

(continued)

Domain	Survey item	Item
5: Physical symptoms and mental symptoms	12	Feeling nervous, anxious, on edge, or worrying a lot about different things Feeling restless so that it is hard to sit still Getting tired very easily Muscle tension, aches, or soreness Trouble falling or staying asleep Trouble concentrating on things, such as reading a book or watching TV Becoming easily annoyed or irritable
6: Eating habits	13	Do you often feel that you can't control what or how much you eat? Do you often eat, within any 2-hour period, what most people would regard as an unusually large amount of food? Has this been as often, on average, as twice a week for the course of the pandemic?
7: Eating behaviors	14	Made yourself vomit? Took more than twice the recommended dose of laxatives? Fasted- not eaten anything at all for at least 24 hours? Exercised for more than an hour specifically to avoid gaining weight after binge eating? Were any of these behaviors as often, on average, as twice a week?
8: Alcohol use	15	Do you ever drink alcohol (including beer or wine)? Have you drank alcohol even though a doctor suggested that you stop drinking because of a problem with your health? Have you drank alcohol, been high from alcohol, or been hung over while you were working, going to school, or taking care of children or other responsibilities? Have you missed or been late for work, school, or other activities because you were drinking or hung over? Have you had a problem getting along with other people while you were drinking? Have you often driven a car after having several drinks or after drinking too much?
9: Frequency of problems	16	How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people during the course of the pandemic?

Domain 1 includes 15 different physical symptoms that could, individually or collectively, indicate a physical or mental illness, or both. I called Domain 1 "Physical Symptoms." Domain 2 includes eight different indicators of depression. I called Domain 2 "Symptoms of Depression." Domain 3 asks about participant experiences with anxiety attacks, so Domain 3 is called "Anxiety Attacks." Domain 4 includes 10 different items asking about symptoms of anxiety. These items are both physical and mental symptoms;

Domain 4 is called “Symptoms of Anxiety.” Domain 5 includes physical and mental symptoms and is called “Physical Symptoms and Mental Symptoms.” Domain 6 includes three items asking about participant eating habits during the course of the pandemic. Domain 6 is called “Eating Habits.” Domain 7 includes five items asking participants about engaging in dysfunctional eating behaviors, such as inducing vomiting. Domain 7 is called “Eating Behaviors.” Domain 8 includes six items asking about participant alcohol use. Domain 8 is called “Alcohol Use.” Domain 9 consists of one item asking participants to rate the frequency of any problems they have experienced from Domains 1-8. Domain 9 is called “Frequency of Problems.”

MBI-ES

MBI-ES contains a total of 22 items in groups by topic, or domain, to assess participant level of occupational-related burnout in the following domains: emotional exhaustion, depersonalization, and low personal accomplishment. Licensing requirements mandate that the entire instrument not be published; therefore, I can only include the three sample items allowed by my license. “I feel emotionally drained from my work” represents an item in the emotional exhaustion domain. “I have accomplished many worthwhile things in this job” is included in the personal accomplishment domain. Finally, “I don’t really care what happens to some students” is an item in the depersonalization domain. Participants are asked to rank the frequency of their alignment to each of the 22 statements in the MBI-ES from never (0), a few times a year or less (1), once a month or less (2), a few times a month (3), once a week (4), a few times a week (5), or every day (6).

Survey Item 3

Item 3 from the CSS asked participants to rank the level of worry they have had related to COVID-19. Participants were asked to indicate their average level of worry since the start of the pandemic, approximately March 2020. Participants ranked their perception of worry regarding each statement from not at all (0), a little (1), some (2), significant (3), or extreme (4). Table 7 shows the percentage of responses for Item 3.

Table 7

Item 3 Response Percentages

Statement	Not at all (0)	A little (1)	Some (2)	Significant (3)	Extreme (4)
I am worried about catching the virus.	3.66	19.51	32.93	31.71	12.20
I am worried that I can't keep my family safe from the virus.	7.32	19.51	24.39	39.02	9.76
I am worried that our healthcare system won't be able to protect my loved ones.	12.20	15.85	36.59	31.71	3.66
I am worried that our healthcare system is unable to keep me safe from the virus.	12.20	28.05	32.93	24.39	2.44
I am worried that basic hygiene (e.g., handwashing) is not enough to keep me safe from the virus.	9.76	20.73	32.93	26.83	9.76
I am worried that social distancing is not enough to keep me safe from the virus.	10.98	19.51	32.93	29.27	7.32

Forty-four percent of participants expressed significant or extreme worry about catching the virus (COVID-19). A total of 49% of participants expressed significant or extreme worry they would not be able to keep their family safe from the virus. Just over

35% of participants reported significant or extreme worry that our healthcare system cannot keep them safe from the virus. Thirty-seven percent of participants reported worrying that basic hygiene is not enough to keep them safe from the virus. Finally, 37% of participants expressed significant or extreme worry that social distancing is not enough to keep them safe from the virus.

Table 9 shows participant response data for Item 3. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 3 is 1, and the maximum value is 5.

Table 8

Item 3 Response Data

Statement	Mean	Std. deviation	Variance	Total
I am worried about catching the virus.	3.29	1.03	1.06	82
I am worried that I can't keep my family safe from the virus.	3.24	1.10	1.21	82
I am worried that our healthcare system won't be able to protect my loved ones.	2.99	1.05	1.11	82
I am worried that our healthcare system is unable to keep me safe from the virus.	2.77	1.03	1.06	82
I am worried that basic hygiene (e.g., handwashing) is not enough to keep me safe from the virus.	3.06	1.12	1.25	82
I am worried that social distancing is not enough to keep me safe from the virus.	3.02	1.10	1.22	82

For Item 3 responses, the mean ranged from 2.77 to 3.29. The standard deviation ranged from 1.03 to 1.12, and the variance ranged from 1.06 to 1.25. There were 82 participants for this item.

Item 4

Item 4 asked participants about various kinds of worries they may have experienced related to COVID-19. Participants were asked to indicate the average level of worry since the start of the pandemic (approximately March 2020). Participants ranked their perception of worry regarding each statement from not at all (0), a little (1), some (2), significant (3), or extreme (4). Table 9 shows the distribution of responses for Item 4.

Table 9

Item 4 Response Percentages

Statement	Not at all (0)	A little (1)	Some (2)	Significant (3)	Extreme (4)
I am worried about grocery stores running out of food.	32.47	28.57	24.68	11.69	2.60
I am worried that grocery stores will close down.	61.04	20.78	11.69	6.49	0
I am worried about grocery stores running out of cleaning or disinfectant supplies.	22.08	37.66	25.97	10.39	3.90
I am worried about grocery stores running out of cold or flu remedies.	35.06	28.57	22.08	11.69	2.60
I am worried about grocery stores running out of water.	57.14	16.88	15.58	10.39	0
I am worried about pharmacies running out of prescription medicines.	40.79	27.63	21.05	9.21	1.32

Item 4 asked participants to rate their level of worry regarding the socioeconomic consequences of the pandemic. Just over 14% of participants reported worries of grocery stores running out of food to be significant or extreme; this same percentage reported

significant or extreme worry about grocery stores running out of cleaning or disinfectant supplies and/or cold or flu remedies. Only 6.5% of participants reported significant worry about grocery stores closing down, with no participants reporting extreme worry about that event occurring. No participants reported experiencing extreme worry about grocery stores running out of water; 10% reported significant worry about this event occurring.

Table 10 shows participant response data for Item 4. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 4 is 1, and the maximum value is 5.

Table 10

Item 4 Response Data

Statement	Mean	Std. deviation	Variance	Total
I am worried about grocery stores running out of food.	2.23	1.10	1.22	77
I am worried that grocery stores will close down.	1.64	0.92	0.85	77
I am worried about grocery stores running out of cleaning or disinfectant supplies.	2.36	1.06	1.11	77
I am worried about grocery stores running out of cold or flu remedies.	2.18	1.11	1.24	77
I am worried about grocery stores running out of water.	1.79	1.05	1.10	77
I am worried about pharmacies running out of prescription medicines.	2.03	1.05	1.10	76

For Item 4 responses, the mean ranged from 1.64 to 2.36. The standard deviation ranged from 0.92 to 1.11, and the variance ranged from 0.85 to 1.24. There were between 76 and 77 participants for this item.

Item 5

Item 5 asked participants about various kinds of worries they may have experienced related to COVID-19. Participants were asked to indicate the average level of worry since the start of the pandemic (approximately March 2020). Participants ranked their perception of worry regarding each statement from not at all (0), a little (1), some (2), significant (3), or extreme (4). Table 11 shows the percentage of responses for Item 5.

Table 11

Item 5 Response Percentages

Statement	Not at all (0)	A little (1)	Some (2)	Significant (3)	Extreme (4)
I am worried that if I touched something in a public space (e.g., handrail, door handle), I would catch the virus.	25	35.53	25	13.16	1.32
I am worried that if someone coughed or sneezed near me, I would catch the virus.	9.21	21.05	26.32	36.84	6.58
I am worried that people around me will infect me with the virus.	6.58	22.37	26.32	32.89	11.84
I am worried about taking change in cash interactions.	52.63	26.32	11.84	7.89	1.32
I am worried that I might catch the virus from handling money or using a debit machine.	52.63	25	13.16	7.89	1.32
I worry that my mail has been contaminated by mail handlers.	73.86	17.11	6.58	2.63	0

Fourteen percent of participants reported significant or extreme worry of catching the virus if they touched something in a public space. Over 43% of participants reported

significant or extreme worry about catching the virus if someone coughed or sneezed near them. Almost 45% of participants reported significant or extreme worry that people around them will infect them with the virus. Few participants noted significant or extreme worry about taking change in cash interactions, and participants were equally significantly or extremely worried about handling money or using a debit machine, at 9.21% for both. Participants reported even less worry about mail contamination: 3% of participants were significantly worried and no participants reported extreme worry.

Table 12 shows participant response data for Item 5. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 5 is 1, and the maximum value is 5.

Table 12

Item 5 Response Data

Statement	Mean	Std. deviation	Variance	Total
I am worried that if I touched something in a public space (e.g., handrail, door handle), I would catch the virus.	2.30	1.03	1.05	76
I am worried that if someone coughed or sneezed near me, I would catch the virus.	3.11	1.10	1.20	76
I am worried that people around me will infect me with the virus.	3.21	1.12	1.25	76
I am worried about taking change in cash interactions.	1.79	1.02	1.03	76
I am worried that I might catch the virus from handling money or using a debit machine.	1.80	1.03	1.05	76
I worry that my mail has been contaminated by mail handlers.	1.38	0.72	0.53	76

For Item 5 responses, the mean ranged from 1.38 to 3.21. The standard deviation ranged from 0.72 to 1.10, and the variance ranged from 0.53 to 1.25. There were 76 participants responding to this item.

Item 6

Item 6 asked participants about various kinds of disturbances (such as in concentration and sleep) they may have experienced related to COVID-19. Participants were asked to indicate the average level of disturbance since the start of the pandemic (approximately March 2020). Participants ranked their perception of level of disturbance regarding each statement from not at all (0), a little (1), some (2), significant (3), or extreme (4). Table 13 shows the distribution of responses for Item 6.

Table 13

Item 6 Response Percentages

Statement	Not at all (0)	A little (1)	Some (2)	Significant (3)	Extreme (4)
I have trouble concentrating because I keep thinking about the virus.	45.21	26.03	21.92	6.85	0
Disturbing mental images about the virus popped into my mind against my will.	63.89	20.83	6.94	6.94	1.39
I have trouble sleeping because I worry about the virus.	54.79	26.03	13.70	1.37	4.11
I thought about the virus when I didn’t mean to.	31.51	31.51	28.77	5.48	2.74
Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart.	67.12	12.33	16.44	1.37	2.74
I have bad dreams about the virus.	69.86	15.07	9.59	2.74	2.74

Few participants reported trouble concentrating because they keep thinking about the virus: 7% reported significant trouble, and 0% reported extreme trouble. Over 8% of participants reported significant or extreme disturbances due to negative mental images of the virus popping into their minds against their will. Almost 5.5% of participants reported significant or extreme trouble sleeping due to worry about the virus. Over 8% of participants reported significant or extreme disturbances from thinking about the virus when they did not mean to. Over 4% of participants reported significant or extreme physical reactions to reminders of the virus. Five percent of participants reported experiencing bad dreams about the virus.

Table 14 shows participant response data for Item 6. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 6 is 1, and the maximum value is 5.

Table 14

Item 6 Response Data

Statement	Mean	Std. deviation	Variance	Total
I have trouble concentrating because I keep thinking about the virus.	1.90	0.97	0.94	73
Disturbing mental images about the virus popped into my mind against my will.	1.61	0.98	0.96	72
I have trouble sleeping because I worry about the virus.	1.74	1.02	1.04	73
I thought about the virus when I didn’t mean to.	2.16	1.02	1.04	73
Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart.	1.60	0.99	0.98	73
I have bad dreams about the virus.	1.53	0.97	0.93	73

For Item 6 responses, the mean ranged from 1.53 to 2.16. The standard deviation

ranged from 0.97 to 1.02, and the variance ranged from 0.92 to 1.04. There were between 72 and 73 participants for this item.

Item 7

Item 7 asked participants about various kinds of worries about foreigners they may have experienced related to COVID-19. Participants were asked to indicate the average level of worry since the start of the pandemic (approximately March 2020). Participants ranked their level of worry regarding each statement from not at all (0), a little (1), some (2), significant (3), or extreme (4). Table 15 shows the distribution of responses for Item 7.

Table 15

Item 7 Response Percentages

Statement	Not at all (0)	A little (1)	Some (2)	Significant (3)	Extreme (4)
I am worried that foreigners are spreading the virus in my country.	68.06	18.06	9.72	4.17	0
If I went to a restaurant that specialized in foreign foods, I'd be worried about catching the virus.	90.28	5.56	1.39	1.39	1.39
I am worried about coming into contact with foreigners because they might have the virus.	76.39	16.67	6.94	0	0
If I met a person from a foreign country, I'd be worried they might have the virus.	79.19	12.50	6.94	0	1.39
If I was in an elevator with a group of foreigners, I'd be worried that they're infected with the virus.	69.44	15.28	8.33	6.94	0
I am worried that foreigners are spreading the virus because they're not as clean as we are.	91.67	5.56	1.39	1.39	0

Significant and extreme response percentages are low for Item 7. Regarding

worry that foreigners are spreading the virus in their country, 4% of participants reported significant worry, and no participants reported extreme worry. Less than 2% of participants reported being significantly worried about catching the virus from a foreign food restaurant; less than 2% reported extreme worry for the same item. No participants reported significant or extreme worry about coming into contact with foreigners because foreigners might have the virus. No one was significantly worried, and less than 2% of participants were extremely worried about meeting a person from a foreign country because they might have the virus. Seven percent of participants were significantly worried about being in an elevator with a group of foreigners because they might be infected with the virus. No one reported extreme worry. Less than 2% of participants reported significant worry about foreigners spreading the virus because they are not as clean as participants are. No one reported extreme worry for this item.

Table 16 shows participant response data for Item 7. Measures of spread are shown, including mean, standard deviation, and variance.

Table 16

Item 7 Response Data

Statement	Min	Max	Mean	Std. deviation	Variance	Total
I am worried that foreigners are spreading the virus in my country.	1	4	1.50	0.83	0.69	72
If I went to a restaurant that specialized in foreign foods, I'd be worried about catching the virus.	1	5	1.18	0.65	0.43	72
I am worried about coming into contact with foreigners because they might have the virus.	1	3	1.31	0.59	0.35	72
If I met a person from a foreign country, I'd be worried they might have the virus.	1	5	1.32	0.72	0.52	72
If I was in an elevator with a group of foreigners, I'd be worried that they're infected with the virus.	1	4	1.53	0.91	0.83	72
I am worried that foreigners are spreading the virus because they're not as clean as we are.	1	4	1.13	0.47	0.22	72

For Item 7 responses, the mean ranged from 1.13 to 1.53. The standard deviation ranged from 0.47 to 0.91, and the variance ranged from 0.22 to 0.83. There were 72 participants for this item.

Item 8

Item 8 asked participants about the frequency of symptoms they may have experienced related to COVID-19. Participants were asked to indicate the average level of bother since the start of the pandemic (approximately March 2020).

Participants ranked their level of bother caused by each symptom from not

bothered at all (0), bothered a little (1), or bothered a lot (2). Table 17 shows the distribution of responses for Item 8.

Table 17

Item 8 Response Percentages

Statement	Not bothered at all (0)	Bothered a little (1)	Bothered a lot (2)
Stomach pain	54.93	32.39	12.68
Back pain	32.39	50.70	16.90
Pain in your arms, legs, or joints (knees, hips, etc.)	42.25	42.25	15.49
Menstrual cramps or other problems with periods (if applicable to you. If not applicable, please leave blank.)	51.52	31.82	16.67
Headaches	18.31	46.48	35.21
Chest pain	66.20	28.17	5.63
Dizziness	63.38	28.17	8.45
Fainting spells	97.18	1.41	1.41
Feeling your heart pound or race	52.11	38.03	9.86
Shortness of breath	52.11	40.85	7.04
Pain or problems during sexual intercourse	85.92	12.68	1.41
Constipation, loose bowels, or diarrhea	56.34	30.99	12.68
Nausea, gas, or indigestion	43.66	45.07	11.27
Feeling tired or having low energy	18.31	30.99	50.70
Trouble sleeping	30.99	36.62	32.39

Forty-five percent of participants reported being bothered a little or bothered a lot by stomach pain during the course of the pandemic. Sixty-eight percent of participants reported being bothered a little or a lot by back pain. Almost 58% of participants reported being bothered a little or a lot by arm, leg, or joint pain, and almost 49% reported having menstrual cramps or other period problems during the course of the pandemic. Eighty-two percent of participants reported being bothered a little or a lot by headaches, while fewer than 34% reported being bothered by chest pain. Thirty-seven percent of participants reported being bothered by dizziness. Less than 3% reported experiencing

fainting spells. Almost 48% reported being bothered a little or a lot by having a pounding or racing heart and having shortness of breath. Fourteen percent reported pain or problems during sexual intercourse. Regarding constipation, loose bowels, or diarrhea, 44% of participants were bothered a little or a lot. Regarding nausea, gas, or indigestion, 56% of participants reported being bothered a little or a lot during the course of the pandemic. Eighty-two percent of participants reported being bothered a little or a lot by feeling tired or having low energy, and 69% of participants reported having trouble sleeping during the course of the pandemic.

Table 18 shows participant response data for Item 8. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 8 is 1, and the maximum value is 3.

Table 18

Item 8 Response Data

Statement	Mean	Std. deviation	Variance	Total
Stomach pain	1.58	0.71	0.50	71
Back pain	1.85	0.68	0.47	71
Pain in your arms, legs, or joints (knees, hips, etc.)	1.73	0.71	0.51	71
Menstrual cramps or other problems with periods (if applicable to you. If not applicable, please leave blank.)	1.65	0.75	0.56	66
Headaches	2.17	0.71	0.51	71
Chest pain	1.39	0.59	0.35	71
Dizziness	1.45	0.65	0.42	71
Fainting spells	1.04	0.26	0.07	71
Feeling your heart pound or race	1.58	0.66	0.44	71
Shortness of breath	1.55	0.62	0.39	71
Pain or problems during sexual intercourse	1.15	0.40	0.16	71
Constipation, loose bowels, or diarrhea	1.56	0.71	0.50	71
Nausea, gas, or indigestion	1.68	0.67	0.44	71
Feeling tired or having low energy	2.32	0.76	0.59	71
Trouble sleeping	2.01	0.80	0.63	71

For Item 8 responses, the mean ranged from 1.04 to 2.32. The standard deviation ranged from 0.26 to 0.80, and the variance ranged from 0.07 to 0.63. There were between 66 and 71 participants for this item.

Item 9

Item 9 asked participants about the frequency of symptoms they may have experienced related to COVID-19. Participants were asked to indicate the average frequency of symptoms since the start of the pandemic (approximately March 2020). Participants ranked their level of bother caused by each symptom from not at all (0), several days (1), more than half the days (2), or nearly every day (3). Table 19 shows the distribution of responses for Item 9.

Table 19

Item 9 Response Percentages

Statement	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
Little interest or pleasure in doing things	22.54	50.70	19.72	7.04
Feeling down, depressed, or hopeless	23.94	50.70	16.90	8.45
Trouble falling or staying asleep, or sleeping too much	26.76	45.07	15.49	12.68
Feeling tired or having little energy	14.08	40.85	25.35	19.72
Poor appetite or overeating	26.76	33.80	19.72	19.72
Trouble concentrating on things, such as reading the newspaper or watching television	38.03	32.39	12.68	16.90
Moving or speaking so slowly that other people have noticed? Or the opposite-being so fidgety or restless that you have been moving around a lot more than usual.	71.83	19.72	4.23	4.23
Thoughts that you would be better off dead or of hurting yourself in some way	85.92	9.86	2.82	1.41

Twenty-seven percent of participants reported experiencing little interest or

pleasure in doing things for more than half the days of the pandemic or nearly every day of the pandemic. Twenty-five percent of participants reported feeling down, depressed, or hopeless more than half the days or nearly every day of the pandemic. Over 28% of participants reported experiencing trouble falling asleep, staying asleep, or sleeping too much more than half the days or nearly every day of the pandemic. Over 45% of participants reported feeling tired or having little energy more than half the days or nearly every day of the pandemic. Forty percent of participants reported having a poor appetite or overeating more than half the days or nearly every day of the pandemic. Thirty percent of participants reported having trouble concentrating on things for more than half the days or nearly every day during the pandemic. Eight percent reported moving so slowly that others noticed or feeling very restless more than half the days or nearly every day of the pandemic. Four percent of participants reported having thoughts they would be better off dead or of engaging in self-harm more than half the days or nearly every day of the pandemic.

Table 20 shows participant response data for Item 9. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 9 is 1, and the maximum value is 4.

Table 20

Item 9 Response Data

Statement	Mean	Std. deviation	Variance	Total
Little interest or pleasure in doing things	2.11	0.83	0.69	71
Feeling down, depressed, or hopeless	2.10	0.86	0.74	71
Trouble falling asleep or staying asleep, or sleeping too much	2.14	0.95	0.91	71
Feeling tired or having little energy	2.51	0.96	0.93	71
Poor appetite or overeating	2.32	1.07	1.15	71
Trouble concentrating on things, such as reading the newspaper or watching television	2.08	1.08	1.18	71
Moving or speaking so slowly that other people have noticed? Or the opposite- being so fidgety or restless that you have been moving around a lot more than usual	1.41	0.76	0.58	71
Thoughts that you would be better off dead or of hurting yourself in some way	1.20	0.55	0.30	71

For Item 9 responses, the mean ranged from 1.20 to 2.51. The standard deviation ranged from 0.55 to 1.08, and the variance ranged from 0.30 to 1.18. There were 71 participants for this item.

Item 10

Item 10 asked participants whether or not they experienced the listed symptoms during the course of the pandemic (approximately March 2020 to the present). Participants responded either no (0) or yes (1) to each question. Table 21 shows the distribution of responses for Item 10.

Table 21

Item 10 Response Percentages

Statement	No (0)	Yes (1)
Have you had an anxiety attack- suddenly feeling fear or panic?	64.29	35.71
Has this happened prior to the pandemic?	66.13	33.87
Do some of these attacks come suddenly out of the blue- that is, in situations where you don't expect to be nervous or uncomfortable	61.67	38.33
Do these attacks bother you a lot or are you worried about having another attack?	67.80	32.20

Thirty-six percent of participants reported experiencing an anxiety attack, and 34% reported having this happen prior to the pandemic. Over 38% of participants reported these attacks come suddenly out of the blue, and more than 32% reported being bothered a lot or worried about having another attack.

Table 22 shows participant response data for Item 10. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 10 is 1, and the maximum value is 2.

Table 22

Item 10 Response Data

Statement	Mean	Std. deviation	Variance	Total
Have you ever had an anxiety attack- suddenly feeling fear or panic?	1.36	0.48	0.23	70
Has this happened prior to the pandemic?	1.34	0.47	0.22	62
Do some of these attacks come suddenly out of the blue- that is, in situations where you don't expect to be nervous or uncomfortable?	1.38	0.49	0.24	60
Do these attacks bother you a lot or are you worried about having another attack?	1.32	0.47	0.22	59

For Item 10 responses, the mean ranged from 1.32 to 1.38. The standard deviation ranged from 0.47 to 0.49, and the variance ranged from 0.22 to 0.24. There were between 59 and 70 participants for this item.

Item 11

Item 11 asked participants about symptoms during their last bad anxiety attack during the pandemic. If participants reported no anxiety attacks, they were moved to Item 12. Participants responded either no (0) or yes (1) to each question. Table 23 shows the distribution of responses for Item 10.

Table 23

Item 11 Response Percentages

Statement	No (0)	Yes (1)
Were you short of breath?	71.21	28.79
Did your heart race, pound, or skip?	50	50
Did you have chest pain or pressure?	65.31	34.69
Did you sweat?	73.47	26.53
Did you feel as if you were choking?	81.25	18.75
Did you have hot flashes or chills?	67.35	32.65
Did you have nausea or an upset stomach, or the feeling that you were going to have diarrhea?	68.75	31.25
Did you feel dizzy, unsteady, or faint?	66.67	33.33
Did you have tingling or numbness in parts of your body?	62.50	37.50
Did you tremble or shake?	74.47	25.53
Were you afraid you were dying?	82.98	17.02

Half of the participants reported experiencing heart palpitations. Thirty-five percent of participants reported experiencing chest pain or pressure; 33% reported feeling dizzy, unsteady, or faint; and 38% reported feeling tingling or numbness. Twenty-nine percent of participants reported shortness of breath, 27% reported sweating, and 26% reported trembling or shaking. Finally, 19% of participants reported feeling as if they

were choking, and 17% reported experiencing a feeling as if they were dying.

Table 24 shows participant response data for Item 11. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 11 is 1, and the maximum value is 2.

Table 24

Item 11 Response Data

Statement	Mean	Std. deviation	Variance	Total
Were you short of breath?	1.29	0.45	0.21	66
Did your heart race, pound, or skip?	1.50	0.50	0.25	50
Did you have chest pain or pressure?	1.35	0.48	0.23	49
Did you sweat?	1.27	0.44	0.19	49
Did you feel as if you were choking?	1.19	0.39	0.15	48
Did you have hot flashes or chills?	1.33	0.47	0.22	49
Did you have nausea or an upset stomach, or the feeling that you were going to have diarrhea?	1.31	0.46	0.21	48
Did you feel dizzy, unsteady, or faint?	1.33	0.47	0.22	48
Did you have tingling or numbness in parts of your body?	1.38	0.48	0.23	48
Did you tremble or shake?	1.26	0.44	0.19	47
Were you afraid you were dying?	1.17	0.38	0.14	47

For Item 11 responses, the mean ranged from 1.17 to 1.50. The standard deviation ranged from 0.38 to 0.50, and the variance ranged from 0.14 to 0.25. There were between 47 and 66 participants for this item.

Item 12

Item 12 asked participants about the frequency of physical symptoms during the pandemic. Participants responded either not at all (0), several days (1), or more than half the days (2). Table 25 shows the distribution of responses for Item 12.

Table 25

Item 12 Response Percentages

Statement	Not at all (0)	Several days (1)	More than half the days (2)
Feeling nervous, anxious, on edge, or worrying a lot about different things	15.38	46.15	38.46
Feeling restless so that it is hard to sit still	44.44	41.27	14.29
Getting tired very easily	20.31	32.81	46.88
Muscle tension, aches, or soreness	33.33	42.86	23.81
Trouble falling asleep or staying asleep	25.40	47.62	26.98
Trouble concentrating on things, such as reading a book or watching TV	36.51	44.44	19.05
Becoming easily annoyed or irritable	14.29	55.56	30.16

Eighty-five percent of participants reported feeling nervous, on edge, or worrying a lot for several days or more than half the days of the pandemic. Fifty-six percent of participants reported feeling so restless that it was hard to sit still for several days or more than half the days of the pandemic, and 80% reported getting tired very easily for several days or more than half the days of the pandemic. Two thirds of participants reported experiencing muscle tension, aches, or soreness; 75% of participants reported having trouble falling or staying asleep for several days or more than half the days of the pandemic. Sixty-three percent of participants experienced trouble concentrating, and over 86% reported becoming easily annoyed or irritable for several days or more than half the days of the pandemic.

Table 26 shows participant response data for Item 12. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 12 is 1, and the maximum value is 3.

Table 26

Item 12 Response Data

Statement	Mean	Std. deviation	Variance	Total
Feeling nervous, anxious, on edge, or worrying a lot about different things	2.23	0.70	0.49	65
Feeling restless so that it is hard to sit still	1.70	0.70	0.50	63
Getting tired very easily	2.27	0.78	0.60	64
Muscle tension, aches, or soreness	1.90	0.75	0.56	63
Trouble falling asleep or staying asleep	2.02	0.72	0.52	63
Trouble concentrating on things, such as reading a book or watching TV	1.83	0.72	0.53	63
Becoming easily annoyed or irritable	2.16	0.65	0.42	63

For Item 12 responses, the mean ranged from 1.70 to 2.27. The standard deviation ranged from 0.65 to 0.78, and the variance ranged from 0.42 to 0.60. There were between 63 and 65 participants for this item.

Item 13

Item 13 asked participants if they experienced any food-related disturbances during the course of the pandemic. Participants responded either no (0) or yes (1). Table 27 shows the distribution of responses for Item 13.

Table 27

Item 13 Response Percentages

Statement	No (0)	Yes (1)
Do you often feel that you can't control what or how much you eat?	58.06	41.94
Do you often eat, within any 2-hour period, what most people would regard as an unusually large amount of food?	74.58	25.42
Has this been as often, on average, as twice a week for the course of the pandemic?	67.80	32.20

Forty-two percent of participants reported feeling unable to control what or how much they ate during the course of the pandemic. Twenty-five percent of participants reported eating an unusually large amount of food in a 2-hour period, and 32% of those participants reported this occurring as often as (an average of) twice a week during the course of the pandemic.

Table 28 shows participant response data for Item 13. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 13 is 1, and the maximum value is 2.

Table 28

Item 13 Response Data

Statement	Mean	Std. deviation	Variance	Total
Do you often feel that you can't control what or how much you eat?	1.42	0.49	0.24	62
Do you often eat, within any 2-hour period, what most people would regard as an unusually large amount of food?	1.25	0.44	0.19	59
Has this been as often, on average, as twice a week for the course of the pandemic?	1.32	0.47	0.22	59

For Item 13 responses, the mean ranged from 1.25 to 1.42. The standard deviation ranged from 0.44 to 0.49, and the variance ranged from 0.19 to 0.24. There were between 59 and 62 participants for this item.

Item 14

Item 14 asked participants about any food-related disturbances they experienced during the course of the pandemic. Participants responded either no (0) or yes (1). Table 29 shows the distribution of responses for Item 14.

Table 29

Item 14 Response Percentages

Statement	No (0)	Yes (1)
Made yourself vomit?	96.83	3.17
Took more than twice the recommended dose of laxatives?	96.77	3.23
Fasted- not eaten anything at all for at least 24 hours?	85.25	14.75
Exercised for more than an hour specifically to avoid gaining weight after binge eating?	93.55	6.45
Were any of these behaviors as often, on average, as twice a week?	88.52	11.48

Over 3% of participants reported making themselves vomit over the course of the pandemic. Fifteen percent reported fasting for at least 24 hours during the course of the pandemic. Six percent of participants reported exercising after binge eating to avoid gaining weight. Of the participants who reported “yes” to any of these statements, almost 11.5% reported these behaviors at least as frequently as twice a week (on average) during the course of the pandemic.

Table 30 shows participant response data for Item 14. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 14 is 1, and the maximum value is 2.

Table 30

Item 14 Response Data

Statement	Mean	Std. deviation	Variance	Total
Made yourself vomit?	1.03	0.18	0.03	63
Took more than twice the recommended dose of laxatives?	1.03	0.18	0.03	62
Fasted- not eaten anything at all for at least 24 hours?	1.15	0.35	0.13	61
Exercised for more than an hour specifically to avoid gaining weight after binge eating?	1.06	0.25	0.06	62
Were any of these behaviors as often, on average, as twice a week?	1.11	0.32	0.10	61

For Item 14 responses, the mean ranged from 1.03 to 1.15. The standard deviation ranged from 0.18 to 1.35, and the variance ranged from 0.03 to 0.13. There were between 61 and 63 participants for this item.

Item 15

Item 15 asked participants about alcohol-related disturbances during the course of the pandemic. Participants responded either no (0) or yes (1). Table 31 shows the distribution of responses for Item 15.

Table 31

Item 15 Response Percentages

Statement	No (0)	Yes (1)
Do you ever drink alcohol (including beer or wine)?	30.16	69.84
Have you drank alcohol even though a doctor suggested that you stop drinking because of a problem with your health?	100	0
Have you drank alcohol, been high from alcohol, or been hung over while you were working, going to school, or taking care of children or other responsibilities?	95.08	4.92
Have you missed or been late for work, school, or other activities because you were drinking or hung over?	98.39	1.61
Have you had a problem getting along with other people while you were drinking?	100	0
Have you driven a car after having several drinks or after drinking too much?	93.55	6.45

Seventy percent of participants reported drinking alcohol during the pandemic. No one reported continuing to drink even though a doctor suggested not to. Almost 5% of participants reported drinking alcohol or being high or hungover from alcohol while working, going to school, or taking care of children or other responsibilities. Just over 1.5% of participants reported missing or being late to work, school, or other activities because they were drinking or hungover. No one reported difficulties in getting along with others due to drinking. Almost 6.5% (6.45%) of participants reported driving a car after drinking too much.

Table 32 shows participant response data for Item 15. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 15 is 1, and the maximum possible value is 2.

Table 32

Item 15 Response Data

Statement	Mean	Std. deviation	Variance	Total
Do you ever drink alcohol (including beer or wine)?	1.70	0.46	0.21	63
Have you drank alcohol even though a doctor suggested that you stop drinking because of a problem with your health?	1	1	0	62
Have you drank alcohol, been high from alcohol, or been hung over while you were working, going to school, or taking care of other responsibilities?	1.05	0.22	0.05	61
Have you missed or been late for work, school, or other activities because you were drinking or hung over?	1.02	0.13	0.02	62
Have you had a problem getting along with other people while you were drinking?	1	0	0	62
Have you driven a car after having several drinks or after drinking too much?	1.06	0.25	0.06	62

For Item 15 responses, the mean ranged from 1 to 1.70. The standard deviation ranged from 0 to 1, and the variance ranged from 0 to 0.21. There were between 61 and 63 participants for this item.

Item 16

Item 16 asked participants to evaluate the level of difficulty they have had with any of the problems reported on the survey. Participants responded not difficult at all (0), somewhat difficult (1), very difficult (2), or extremely difficult (3). Table 33 shows the distribution of responses for Item 16.

Table 33

Item 16 Response Percentages

Statement	Not difficult at all (0)	Somewhat difficult (1)	Very difficult (2)	Extremely difficult (3)
How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people during the course of the pandemic?	40.32	46.77	8.06	4.84

Thirteen percent of participants reported the problems from Items 8-15 have made it very difficult or extremely difficult to do their work or get along with others during the pandemic. When adding in the percentage of participants who reported these problems being somewhat difficult, the percentage grows to 60%.

Table 34 shows participant response data for Item 16. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 16 is 1, and the maximum value is 4.

Table 34

Item 16 Response Data

Statement	Mean	Std Deviation	Variance	Total
How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people during the course of the pandemic?	1.77	0.79	0.63	62

For Item 16 responses, the mean was 1.77. The standard deviation was 0.79, and the variance was 0.63. There were 62 participants for this item.

Item 17

Item 17 asked participants about perceptions of their job and colleagues. Participants responded with the perceived frequency of feelings during the course of the pandemic. Table 35 shows the distribution of responses for Item 17. Because the specific items from MBI-ES cannot be shared, I have denoted the domain to which each item belongs instead.

Table 35

Item 17 Response Percentages

Statement	Never (0)	A few times a year or less (1)	Once a month or less (2)	A few times a month (3)	Once a week (4)	A few times a week (5)	Every day (6)
EE	0	9.52	1.59	11.11	14.29	22.22	41.27
EE	1.59	6.35	1.59	11.11	4.76	34.92	39.68
EE	3.17	7.94	3.17	12.70	14.29	23.81	34.92
PA	1.59	1.59	0	7.94	19.05	31.75	38.10
DP	58.73	14.29	6.35	6.35	7.94	6.35	0
EE	19.05	19.05	4.76	14.29	9.52	17.46	15.87
PA	1.59	3.17	4.76	9.52	17.46	38.10	25.40
EE	3.17	11.11	4.76	11.11	11.11	19.05	39.68
PA	1.59	4.76	3.17	9.52	20.63	31.75	28.57
DP	35.48	11.29	9.68	12.90	9.68	16.13	4.84
DP	38.10	7.94	7.94	7.94	14.29	14.29	9.52
PA	17.46	22.22	12.70	19.05	9.52	17.46	1.59
EE	4.76	7.94	7.94	15.87	12.70	22.22	28.57
EE	6.35	7.94	3.17	11.11	9.52	17.46	44.44
DP	66.67	15.87	1.59	1.59	7.94	4.76	1.59
EE	22.58	19.35	9.68	14.52	4.84	19.35	9.68
PA	3.33	1.67	8.33	10	8.33	45	23.33
PA	11.29	6.45	3.23	14.52	22.58	29.03	12.90
PA	1.67	3.33	3.33	21.67	16.67	30	23.33
EE	9.68	17.74	16.13	8.06	9.68	17.74	20.97
PA	0	4.92	9.84	11.48	14.75	39.34	19.67
DP	36.07	16.39	4.92	11.48	11.48	16.39	3.28

When looking at the emotional exhaustion domain, between 29% and 75% of

participants reported experiencing the emotional exhaustion symptoms in the MBI-ES either a few times a week or every day throughout the course of the pandemic. The mean for the participants reporting emotional exhaustion is 52.15. When examining the personal accomplishment domain, between 19% and 70% of participants reported experiencing the personal accomplishment symptoms either a few times a week or every day throughout the course of the pandemic. The mean for participants reporting personal accomplishment is 54.79. When looking at the depersonalization domain, between 6% and 24% of participants reported feelings of depersonalization. The mean for participants reporting feelings of depersonalization is 15.43.

Table 36 shows participant response data for Item 17. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 17 is 1, and the maximum value is 7. Because the specific items from MBI-ES cannot be shared, I have denoted the domain to which each item belongs instead.

Table 36

Item 17 Response Data

Statement	Mean	Std. deviation	Variance	Total
EE	5.62	1.59	2.52	63
EE	5.75	1.54	2.38	63
EE	5.38	1.72	2.97	63
PA	5.89	1.24	1.52	63
DP	2.10	1.62	2.63	63
EE	3.92	2.18	4.74	63
PA	5.54	1.39	1.93	63
EE	5.32	1.87	3.49	63
PA	5.52	1.45	2.09	63
DP	3.18	2.06	4.24	63
DP	3.33	2.23	4.95	63
PA	3.40	1.78	3.16	63
EE	5.05	1.82	3.32	63
EE	5.40	1.94	3.76	63
DP	1.89	1.61	2.61	63
EE	3.56	2.10	4.41	62
PA	5.47	1.51	2.28	60
PA	4.69	1.84	3.37	62
PA	5.32	1.43	2.05	60
EE	4.27	2.09	4.36	62
PA	5.33	1.42	2.02	61
DP	3.08	2.04	4.17	61

For Item 17 responses, the mean ranged from 1.89 to 5.89. The standard deviation ranged from 1.24 to 2.23, and the variance ranged from 1.52 to 4.95. There were between 60 and 63 participants for this item.

Item 18

Item 18 asked participants about their intent to return to teaching next year. Table 37 shows the distribution of responses for Item 18.

Table 37

Item 18 Response Percentages

Statement	Percentage
Yes, in my current role	70.69
Yes, in a different role in my school or district	15.52
Yes, in another state	1.72
Not at all	12.07

Seventy-one percent of participants reported intent to return to teaching in their current (2021-2022 AY) role. Sixteen percent of participants reported intent to change roles but stay within their current school or district. Less than 2% reported intent to relocate to a state other than N.C., and 12% of participants reported intent to leave the field of education.

Table 38 shows participant response data for Item 18. Measures of spread are shown, including mean, standard deviation, and variance. The minimum value for each question in Item 18 is 1, and the maximum value is 4.

Table 38

Item 18 Response Data

Statement	Mean	Std. deviation	Variance	Total
Do you intend to return to teaching next year (2022-2023)?	1.55	1	1.01	58

For Item 18 responses, the mean was 1.55. The standard deviation was 1, and the variance was 1.01. There were 58 participants for this item.

Variables in Quantitative Analysis

Aligning with my research question, COVID stress is my independent variable. Physical and mental health is one dependent variable, and occupational burnout is a

second independent variable.

Correlation Between Variables

Correlation describes a predictable relationship between two variables. A positive correlation suggests when one variable increases, the other variable increases as well. Alternately, if variables are positively correlated, if one variable decreases the other will also decrease. Positive correlations can indicate statistically significant relationships between variables. If variables show a negative correlation, one variable increases while the other decreases, and correlation values are not found to be statistically significant.

Quantitative Results and Analyses

Table 39 shows Pearson correlation values between each CSS item domain and each PHQ item cluster. Domains and clusters are located in Tables 5 and 6 respectively.

Table 39

Correlation Values Between CSS and PHQ

	PHQ Item 8	PHQ Item 9	PHQ Item 10	PHQ Item 11	PHQ Item 12	PHQ Item 13	PHQ Item 14	PHQ Item 15	PHQ Item 16
CSS Item 3 DAN	.504	.421	.307	.369	.481	.251	-.084	-.041	.427
CSS Item 4 SEC	.271	.261	.341	.384	.276	.153	.160	-.013	.142
CSS Item 5 CHE	.301	.317	.195	.242	.326	.263	.271	-.106	.257
CSS Item 6 TSS	.219	.193	-.010	.156	.216	.169	.169	.067	-.083
CSS Item 7 XEN	.219	.193	-.010	.156	.216	.169	.169	.067	-.083

Note. DAN=danger and contamination fears, SEC=fears about socioeconomic consequences related to the pandemic, CHE=compulsive checking and reassurance seeking, TSS=traumatic stress symptoms, and XEN=xenophobia.

CSS Item 3 (fears of danger and contamination) was found to be a statistically significant predictor of PHQ Item 8 (physical symptoms) having a correlation of .504, PHQ Item 9 (symptoms of depression) having a correlation of .421, PHQ Item 10 (anxiety attacks) having a correlation of .307, PHQ Item 11 (symptoms of anxiety) having a correlation of .369, PHQ Item 12 (physical and mental symptoms) having a correlation of .481, and PHQ Item 16 (frequency of problems) having a correlation of .427.

CSS Item 4 (fears of socioeconomic consequences due to the pandemic) was found to be a statistically significant predictor of PHQ Item 8 (physical symptoms) having a correlation of .271, PHQ Item 9 (symptoms of depression) having a correlation of .261, PHQ Item 10 (anxiety attacks) having a correlation of .341, PHQ Item 11 (symptoms of anxiety) having a correlation of .384, and PHQ Item 12 (physical and mental symptoms) having a correlation of .276.

CSS Item 5 (checking and reassurance-seeking behaviors) was found to be a statistically significant predictor of PHQ Item 8 (physical symptoms) having a correlation of .301, PHQ Item 9 (symptoms of depression) having a correlation of .317, PHQ Item 12 (physical and mental symptoms) having a correlation of .326, PHQ Item 13 (eating habits) having a correlation of .263, PHQ Item 14 (eating behaviors) having a correlation of .271, and PHQ Item 16 (frequency of problems) having a correlation of .257.

There was no statistical significance between CSS Item 6 or Item 7 and any of the PHQ item domains. The correlation value between the overall CSS score and the overall PHQ score was.537, indicating a statistically significant relationship.

Table 40 shows correlation values between individual CSS domains and MBI-ES

domains.

Table 40

Correlation Values Between CSS and MBI-ES

	MBI-ES EE	MBI-ES PA	MBI-ES DP
CSS Item 3 DAN	.511	-.079	.214
CSS Item 4 SEC	.267	-.151	.340
CSS Item 5 CHE	.349	-.101	.142
CSS Item 6 TSS	.196	-.162	.173
CSS Item 7 XEN	.196	-.162	.173

Note. DAN=danger and contamination fears, SEC=fears about socioeconomic consequences related to the pandemic, CHE=compulsive checking and reassurance seeking, TSS= traumatic stress symptoms, and XEN=xenophobia.

The personal accomplishment domain of MBI-ES showed negative correlation values for CSS Items 5, 6, and 7. Both the emotional exhaustion and depersonalization domains of MBI-ES showed positive correlations, with statistically significant correlations between MBI-ES EE and CSS Items 3 (.511), 4 (.267), and 5 (.349). The other statistical significance was between MBI-ES DP and CSS Item 4 (.340).

The correlation value between the overall CSS score and the overall MBI-ES score was .384, indicating a statistically significant relationship.

There were not enough participants (91 total) to allow a meaningful or statistically significant correlation between the CSS data and participant intent to return to teaching (either in their current role, another role within their school or district, or another state) or their intent to leave teaching altogether.

Collection and Analysis of Qualitative Data

Through Research Question 3, I asked, “What are N.C. K-12 public school

educator perceptions of the impact of teaching during the COVID-19 pandemic?" Two participants elected to participate in a follow-up interview by providing their email addresses in a separate window at the end of their digital survey in Qualtrics. In order to schedule the follow-up interview, I contacted each of the two participants within 24 hours of their request to participate. Interviews were scheduled, conducted via Google Meet, and recorded. Recordings were transcribed with the program Otter.AI. I reviewed the transcripts for accuracy prior to sending each one to the correct participant for member checking. Neither participant chose to participate in member checking for accuracy, so I elected to proceed with the transcripts as I reviewed them. Participant 1's transcript is in Appendix H, and Participant 2's transcript is in Appendix I.

Participant 1

Participant 1 is a high school teacher in the western region of N.C. She previously taught theatre before retiring. She opted to return to the classroom to finish 6 more years of teaching in order to be eligible for full retirement benefits. Upon returning, she teaches high school English.

Participant 1 shared that this year she teaches 12th grade English and one class of ACT (American College Test)/PSAT (Preliminary Scholastic Aptitude Test) prep. Her two English classes are honors level. Because her school is on a block schedule, meaning she teaches three 90-minute blocks and has one 90-minute planning period, her classes change at the semester point.

Participant 2

Participant 2 is a middle grades teacher in the eastern region of N.C. in a "predominantly poor and rural county" (personal communication, May 13, 2022). She

spent the majority of her career teaching eighth-grade science but recently took a seventh-grade science position. She, like Participant 1, has only a few years of teaching left before she is eligible for full retirement benefits.

Participant 2 went into greater detail about what a typical day looks like for her. The day begins at 7:25 a.m. when the first bell rings, and students enter her classroom for breakfast and "to be, for lack of a better word, warehoused until when the tardy bell rings at 7:50" (personal communication, May 13, 2022) at which time there are announcements and other "housekeeping" types of activities. Then she and the students move into an end-of-grade test remediation period from 8:00 to 8:45; this is called a flex period. Even though she is a science teacher, she remediates English language arts skills during this flex period. After flex, first period begins and lasts from 8:50 to 10:05. Second period is Participant 2's planning period, so she is without students until 11:20. At 12:05, she takes her class to lunch; after a 25-minute lunch, she escorts the class back to the classroom after stopping at the restroom. She has these students until 1:20, at which time she receives her last class of the day. Students are released to go to the buses at 2:47.

Participant 2 structures her classes by beginning with a bell-ringer question related to their current topic. They will next move into a discussion about their current topic along with appropriate activities. She includes two literacy assignments a week to increase subject-context reading comprehension.

Interview Analysis and Establishing Themes

To begin the analysis process, I read and re-read both transcripts prior to attempting any coding. This allowed me to get a big picture of the shared experiences of both participants. As I read, a few initial categories began to emerge: technology,

workload, personal interactions, and feelings. Table 41 shows statements I initially identified as "technology."

Table 41

Technology-Related Interview Statements

Statement
We had two mini-lessons on how to do the Microsoft platform.
We had to solve our own technology issues.
The way I did it was I put my materials behind me on the board. I projected what I was talking about, had the camera pointing at what I was talking about, so I could point at it and talk about it.
The kids had access to the same material I had; I would tell them what page we're on. This is what we're doing today. And they were welcome- I showed everybody how to do a split-screen so they could put me on half the screen, put the materials on the other half of the screen and follow along…
Some students came to class and others were ghosts; I didn't know what they looked like. They refused to keep their cameras on or be seen on camera.
The second semester, we had kids come into the building, but not everybody came to the building. So, then I was again on camera for every class period with kids in the room. So, I had to monitor the kids on the screen and the kids in the room.
That was sweet, not having to grade every single thing that the kids touched and wrote.
If I ever had to do remote learning again, it would be okay. I don't know if I'd do it exactly the same way. But having done it, it's repeatable. I wouldn't be quite so freaked out at having to pivot and do something entirely different.
It was almost a relief to go virtual.
One thing about teaching without students in the building, it was a lot more laid back. You know, I didn't have to be in my doorway when the bell rang. If I needed to walk off camera for a minute, I walked off camera for a minute. I wasn't "on" every single minute. You know, because in my classroom, even not speaking, I have to be attending. I have to be knowing what the kids are doing.
There was no way I could correct somebody at home. I could mute their microphone. I could dim their camera. But yeah, sit up, wake up. Stop doing stuff. No, no, you can't pop bubbles. No, you can't go to the bathroom. No, you can't get a drink of water. I mean, just the minutia of teaching was not present. Cut down on my stress level a lot in one way, and then bumped it up a lot in another.

Table 41 shows both positive and negative statements regarding teaching and technology during the pandemic. Table 42 shows statements I initially identified as workload.

Table 42

Workload-Related Interview Statements

Statement
Me and the other eighth-grade science teacher had to figure out how to deliver content. Immediately.
It was eye opening because we had to solve our own technology issues.
We had to figure out how to pace ourselves. We had to figure out everything with minimal support from the county because everybody was trying to figure it out themselves.
And I was very, very busy writing those assignments as I had nothing made. So I would read the material and try not to make them too difficult because of course I know the information, I understand the information. But the students I believe guessed a lot of times.
The second semester, we had kids come into the building, but not everybody came to the building. So then I was again on camera for every class period with kids in the room.
It was more difficult, you know, I had to work harder because there were kids in the building and I was still broadcasting to kids at home.
This is my planning period, which I have every day that I'm not covering for another teacher. At the moment, it's much better than it was at the beginning of the year- it was an almost daily occurrence. But it's much less now, it's maybe once a week.
Because to expect a student to just sit still in front of the computer for 90 minutes and not move around was awful; to expect your teacher to set up for about 90 minutes was just as bad.
So we had some students in the room, and others on Zoom at home. And they said, when there was this hybrid system, at the end, you had students who were not engaged, who didn't ask questions, who just refuse to do any work, you didn't turn in any work… So that hybrid didn't work very well.
I thought, I don't know, like I was thinking like a rudderless kind of vessel just being tossed around this way and that way, but all the regulations and all the things that were expected of us.
Maybe the one thing is that with that whole virtual teaching, the remote teaching time was sort of like having a clinging, a baby clinging to your skirts, yelling for your attention all the time, because it if wasn't students, it was admin and/or the district or, you know, there was always something that had to be done. It sapped every ounce of energy.

Table 42 shows workload-related statements from the two participant interviews. The third category I identified was regarding personal interactions. Table 43 shows statements related to personal interactions.

Table 43

Personal Interaction-Related Interview Statements

Statement
Their interpersonal skills are non-existent. The use of language is horrendous, because they've had nobody disciplining them in terms of what they can say, and what's acceptable to say, and what's appropriate to say, for all the time they've been at home.
I know that for our population, a lot of our students were caregivers for younger siblings at home.
They have no idea what the expectations are at school.
We were married to wearing masks when we first came back, so although you can see students' eyes, you can't see the whole expression. And that's a part of communication- being able to see the face of the person you're talking to.
This experience left a whole lot of personal interaction lacking. When I had students in the building second semester last year, it was nice to interact with them. They were more subdued because there were fewer of them. There wasn't as much drama and I had a way better time with some kids in the building.

Table 43 shows statements from both interview participants related to personal interaction with others. Table 44 shows statements I coded as stress-related from both interview participants.

Table 44

Stress-Related Interview Statements

Statement
Horrific. It's been really, really difficult.
The first couple of weeks were terrible. I had a little anxiety breakdown.
I had no idea how to do anything. So I had a little breakdown then.
We first thought that the two weeks to flatten the curve was really going to be two weeks to flatten the curve.
The directive came from the state that nothing that they did when they were virtual could impact the grade that they had.
We said that and broadcast that to everyone, students included. And wow, who would have guessed it, they decided, oh okay, so then we don't' have to do any work, and nothing will happen. That was awful.
We were expected to monitor the cameras being on, the students being engaged, and get through the same amount of work. And that became a whole issue in and of itself, because then our legal department said you cannot insist that a student has their camera on because you're invading their privacy. There may be things they don't need to see at home, all of that stuff, but somehow administration still thought that it was up to us for the kids to have their cameras on. But then you get this kind of thing- Wait, okay, I had my camera on. Because you still couldn't see my face, you couldn't judge my level of engagement. You could also see very clearly when a student had a headset on and was not responding when you had a question. They were obviously playing a video game or whatever on the screen, but you can't see what's on the student screen. So very, very bad.
So that was a really hard situation.
Communication. It was- it was awful.
Their interpersonal skills are nonexistent. The use of language is horrendous…they have no idea what the expectations are at school. So it's been really, really difficult.
I thought, like I was thinking like a rudderless kind of vessel just been tossed around this way and that way by all the regulations and all of the things that were expected of us.
I feel as if I've been teaching at this school for 15 years, and it's only been 4 years.
We all live in a reality that's created by the admin, so [staff relationships] can't offset all of it.
One of the biggest issues that's come out of COVID is the lack of accountability. One of our big problems this year has been absence, the absenteeism in class.
But when I see somebody who has 40 absences, over the semester, still being able to graduate, there is that lack of accountability that we are not really doing a good job in preparing these kids for any kind of future.

Table 44 shows stress-related statements from both participants. Participants shared more statements of negative stress than of eustress related to teaching during the

pandemic.

Summary of Results

Regarding data retrieved from the digital survey via Qualtrics and analyzed using Statistical Package for the Social Sciences, there were several areas of statistical significance between participant reports of COVID stress and physical and/or mental health, as measured by the CSS and PHQ. There were also areas of statistical significance between participant reports of COVID stress and occupational burnout, as measured by the CSS and MBI-ES. There was no correlation or significance related to the intent of educator participants to return to teaching for the next AY. Regarding data collected from participant interviews, experiences were mixed. One participant described the experience of teaching during the pandemic as “horrific” and used expressive and colorful language, while the other participant used more neutral language to describe their experience. Data interpretation and implications are discussed in Chapter 5.

Chapter 5: Discussion

Overview

The problem statement driving this research study was educators in N.C. have been under stress, including increased responsibilities and stagnant and decreasing salaries, and the COVID-19 pandemic has only increased that stress (Gugliemi & Tatrow, 1998; Kyriacou, 1989; Seibt et al., 2012). These stressors are increasing the physical and mental health problems in educators, as well as increasing their feelings of occupational burnout. As a result, more and more educators are leaving the classroom, their district or state, or leaving education entirely. This study focused on the physical and mental health of N.C. educators, their reported levels of COVID stress, and their feelings of occupational burnout. I found statistically significant positive correlations between several of the CSS domains and domains on the PHQ and MBI-ES. This chapter contains a discussion regarding specific domain correlations, implications for educators and legislators, and future research to help answer the following research questions:

1. What are the relationships between COVID-19 stress and the physical and mental health of N.C. K-12 public school educators?
2. What are the relationships between COVID-19 stress and N.C. K-12 public school educator burnout?
3. What are N.C. K-12 public school educator perceptions of the impact of teaching during the COVID-19 pandemic?

I included the following hypotheses:

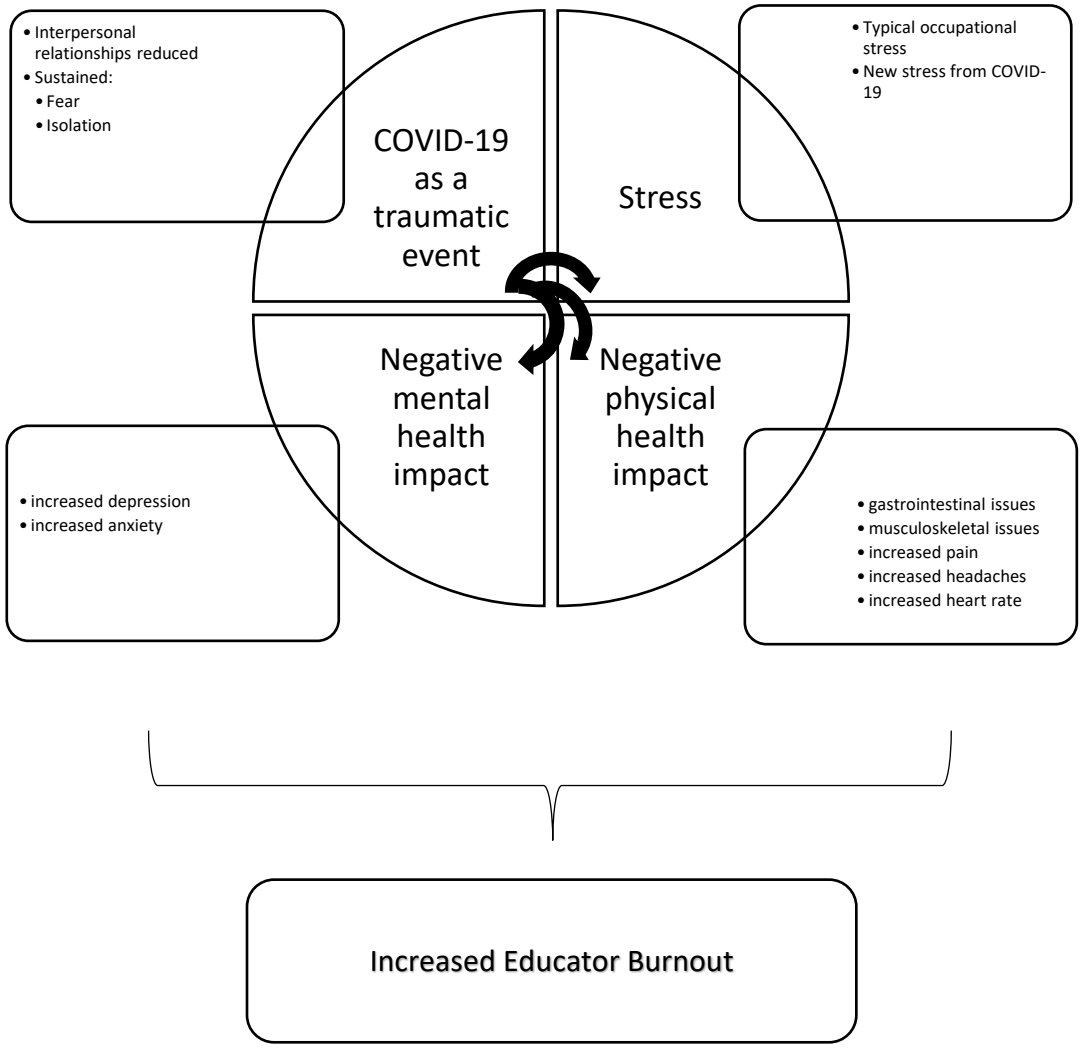
1. Teaching during the COVID-19 pandemic will be shown to significantly impact N.C. educator physical and mental health.

2. Teaching during the COVID-19 pandemic will be shown to significantly impact N.C. educator burnout.

The stress framework guiding this study describes the relationship between stress and the context of that stress (Lazarus & Folkman, 1984). I created the conceptual framework through analyses of Lazarus and Folkman's (1984) theories of stress and health and theories of occupational burnout. The study's conceptual framework is shown in Figure 1 and predicted COVID-19 as a preceding traumatic event causing stress, negative physical health experiences, negative mental health experiences, and ultimately resulting in increased educator burnout.

Figure 1

Study Framework



Increased occupational burnout can cause negative professional and personal outcomes, such as absenteeism, disengagement, attrition, and poor health (Chervinski, 2021). Another way to describe this framework is depicting the relationships between stress, health, and burnout. I anticipated educators would have experienced and will continue to experience COVID stress, and this stress was measured by the CSS. Additionally, I anticipated educators will report high rates of physical and mental

symptoms, and these symptoms were measured by the PHQ. Finally, I predicted these factors combined–COVID stress and increased poor physical and mental health–would lead to increased feelings of educator burnout, measured by the MBI-ES. Through this study, I sought to add to the body of research surrounding the precursors and intent of N.C. educators to leave the profession.

The purpose of this study was to investigate relationships between educator perceptions of COVID stress, physical and mental symptoms, and feelings of occupational burnout. I used three instruments to assess N.C. public school educator perceptions of stress and teaching during the COVID-19 pandemic: CSS, PHQ, and MBI-ES. I combined these three survey instruments into one online survey instrument to be administered using Qualtrics, as shown in Appendix J (with MBI-ES removed due to licensing restrictions). I also offered participants the opportunity to schedule a follow-up interview, conducted virtually via Google Meet. I increased my study's validity by data triangulation; that is, using the four different data sources of the CSS, PHQ, MBI-ES, and participant interviews to look for patterns and similarities (Creswell & Creswell, 2018).

I looked for any repeated themes converging from the different sources during the coding process. Additionally, I attempted to utilize member checking by asking the interview participants to review interview transcripts. This strategy would have improved the accuracy of my interview-based data had interview participants offered input regarding the transcripts; however, I received no feedback from either participant regarding the transcripts. I coded as accurately and thoroughly as possible.

My study methods were aligned as shown in Appendix B. I gathered quantitative data to address Research Question 1 by including the CSS. I gathered quantitative data to

address Research Question 2 by including the PHQ. I gathered quantitative data to address Research Question 3 by including the MBI-ES. With data from all three instruments, I performed a correlation analysis to determine if COVID-19 stress does or does not have an impact on physical health, mental health, and feelings of burnout for N.C. educators. I gathered qualitative data to address Research Question 3 by conducting interviews with willing survey participants.

Through correlation analysis, I investigated any associations between participants' reported levels of COVID stress and physical and mental symptoms and the strength of the associations. I also investigated any associations between participants' reported levels of COVID stress and feelings of occupational burnout. For this analysis, I used Pearson's correlation coefficient. Through correlation analysis, I attempted to assess the strength of the relationship between COVID stress and physical health, COVID stress and mental health, and COVID stress and occupational burnout. Further, I aimed to predict future burnout in N.C. educators based on the level of reported COVID stress. Due to the mixed methods nature of this study, utilizing both quantitative and qualitative data, I hoped to apply both descriptive and inferential statistics. Descriptive statistics applied to my sample participants, while I hoped to draw some conclusions through inferential statistics that potentially would be applicable to N.C. public school educators even if they did not participate (Urdan, 2017).

Quantitative and Qualitative Results

Through Research Question 1, I asked, "What are the relationships between COVID-19 stress and the physical and mental health of N.C. K-12 public school educators?" Hypothesis 1 addressed this research question and stated, "Teaching during

the COVID-19 pandemic will be shown to significantly impact N.C. educator physical and mental health." Hypothesis 1 was supported by the collected data.

Through Research Question 2, I asked, "What are the relationships between COVID-19 stress and N.C. K-12 public school educator burnout?" Hypothesis 2 addressed Research Question 2 and stated, "Teaching during the COVID-19 pandemic will be shown to significantly impact N.C. educator burnout." Hypothesis 2 was supported by the collected data.

Correlation Between Variables

Several areas of study had significant positive relationships. CSS Item 3 (danger and contamination fears) showed the strongest positive correlation values of all the CSS domains to both PHQ and MBI-ES. CSS Item 3 was most strongly correlated with PHQ 8 (physical symptoms) and PHQ Item 12 (physical and mental symptoms). The area of educator mental health research has not been widely studied (Soares et al., 2014); however, these values suggest a relationship between COVID contamination fears and bothersome physical and mental symptoms that participants reported interfered with their ability to do their jobs (Participant 1, personal communication, April 7, 2022). This correlation suggests educators' negative physical and mental health symptoms increased due to the presence of danger and contamination fears related to COVID-19.

CSS Item 3 was correlated with PHQ Items 9 (symptoms of depression) and 16 (frequency of problems reported on the PHQ). The correlation between these items supports the correlation between CSS Item 3 and PHQ Items 8 and 12, as depression is one form of mental illness. Further, sustained levels of fear have been shown to increase nervous system activity and depress immune system function; these physical problems

can also lead to poor mental health (Rhudy, 2016).

The correlation value between the CSS and PHQ, correlating both measures' overall scores, was .537, suggesting a moderately strong relationship between feelings of COVID stress and physical and mental symptoms with reports of frequency of symptoms. Researchers have long been studying the relationships between stress and health. Holt et al. (2020) noted the well-researched connections between increased negative educator stress and decreased mental health, including anxiety, depression, burnout, and physical health problems. Gray et al. (2017) and Mérida-Lopez et al. (2017) also noted connections between increased stress and a decrease in mental well-being. These results support the well-known negative correlation between stress and physiological and psychological well-being (Chervinski, 2021; Holt et al., 2020).

Seibt et al. (2012) discussed sustained, chronic stress as an antecedent to negative health outcomes, and the pandemic has certainly lasted long enough to be considered a sustained event. Educators have had little meaningful control within their classrooms during the course of the pandemic, a factor that could equate to low perceived job control, also leading to negative health outcomes (Chervinski, 2021; Unterbrink et al., 2010). Mental health is inextricably linked to physical health (Gray et al., 2017; Harding et al., 2019; Shami et al., 2017; Zalat et al., 2017), and Godoy et al. (2018) noted the connection between stress and depression, anxiety, and post-traumatic stress disorder. It is clear through the quantitative results that N.C. educators are experiencing negative physical and mental health effects caused, at least in part, by teaching during the COVID-19 pandemic.

When correlating the CSS items to MBI-ES items, the strongest relationship

found was between CSS Item 3 (dangers and contamination fears) and the emotional exhaustion domain of MBI-ES. A sustained amount of fear leads to emotional exhaustion, and when this fear is related to workplace contamination, occupational emotional exhaustion follows. Teaching is already an exhausting profession and has been reported as more stressful than both policing and nursing (Tang & Lau, 1996, as cited in Tang et al., 2001). Other statistically significant relationships were found between CSS Item 4 (socioeconomic concerns) and the MBI-ES depersonalization domain and CSS Item 5 (compulsive checking and reassurance seeking) and the MBI-ES emotional exhaustion domain. These correlations suggest higher levels of socioeconomic stress can negatively impact educators' relationships with students, and when compulsive checking behaviors are present (or increase), educators can experience higher levels of occupational emotional exhaustion.

A negative correlation was shown between all CSS domains and the MBI-ES personal accomplishment domain, suggesting a lower amount of COVID stress can result in higher feelings of professional personal accomplishment, though the correlation values were not statistically significant. The correlation value between the overall scores of the CSS and MBI-ES was .384, not as strong as the relationship between the CSS and PHQ but still statistically significant. Will (2021) noted stress as the top reason U.S. public school educators left the profession; results from this study suggest COVID stress is a factor possibly leading to increased burnout among educators.

Overall, results suggest a more strongly correlated relationship between COVID stress and negative bothersome and frequent physical and mental symptoms experienced by N.C. educators. The data also support prevalent research noting negative stressors can

nullify the positive rewards educators experience (Salvagioni et al, 2017; Shami et al., 2017).

Themes From Qualitative Data

To determine common themes from the interviews, I coded both transcripts following several readings. I created categories (stress, experiences/perceptions, engagement) and placed applicable participant statements in each category to develop themes. Both participants shared similar feelings of stress regarding the rapid shift, almost overnight, from in-person learning to remote learning. The participants both felt they received inadequate training and support from their districts related to moving to remote learning. While Participant 2 expressed the challenge of moving from in-person learning to remote learning, she also noted she would feel more comfortable having to make such a monumental shift again in the future, knowing she successfully navigated the shift to remote learning during the pandemic.

Another source of stress for both participants involved student lack of engagement. Participants noted this lack of engagement was shown through either absenteeism when conducting in-person learning and/or cameras off and no student participation when conducting remote learning. Participant 2 discussed difficulty with teaching a hybrid model with students both in-person and remote at the same time.

Participant 1 began the interview by sharing her experience of having panic attacks at the beginning of the pandemic. She noted her inexperience with technology, perceived lack of support in transitioning to remote learning, and feeling “like a rudderless vessel” throughout the pandemic. She made repeated statements about her experience being “awful,” “horrible,” and “really, really terrible.” She noted she has been

at her current school for only 4 years (having worked only 1 AY prior to the pandemic), but it felt like 15 years had passed.

Participant 2, while still expressing challenges she experienced, was overall more positive about her experiences and the prospect of ever having to complete a major shift again. She described the challenges related to teaching in-person and feeling unsupported by her administration regarding student poor behavior when physically in the classroom. She felt a sense of relief at virtual teaching as she did not have to deal with "the minutiae" of teaching, such as addressing restroom needs, interruptions to sharpen pencils, and "what page are we on?" questions.

Generalizability

It is impossible to make sweeping generalizations based on the results from this study, partly because of the variability in individuals: how they perceive stress and their ability (or not) to cope with stressors (Tang et al., 2001). Along those lines, Tang et al. (2001) noted individual educator perceptions, backgrounds, and levels of tolerance for and vulnerability to stressors are stress-strain modifiers to consider. Further, it is extremely difficult to determine causal relationships because of the sheer volume of potential variables; researchers agree there is a connection between stress and health (Gonzalez et al., 1990). Lastly, because of the low number of participants in the online survey (91 N.C. educators) and the virtual interviews (two N.C. educators), sweeping generalizations related to N.C. educators cannot be made at this time.

Implications for Educators

There is no question that teaching during the pandemic has been challenging. Should students and educators be forced to move to the virtual teaching and learning

option in the future, more training will be crucial for educators to successfully support students and themselves. Educators need clear direction with regard to attendance policies and student engagement. Educators need unwavering presence and support from administration.

At the national level, data do not present an optimistic picture regarding the future of teachers staying in education. Dickler (2021) noted results from the Center for State and Local Government Excellence finding educator satisfaction with their employers dropped from 69% in March 2020 to 44% in October 2020. Horace Mann (as cited in Dickler, 2021) published a report noting that 77% of educators in the U.S. are working more now than they were a year ago, a full 60% report enjoying their job less, and 59% of educators in the U.S. "do not feel secure in their school's health and safety precautions" (para. 12). Rothi et al. (2010) examined the connection between extreme negative stress and adverse health conditions, and participants in the interview expressed experiences of negative stress throughout the course of the pandemic. Furthermore, researchers examined the connection between stress as a preceding event to the activation of the autonomic nervous system and the depression of the immune system (Rhudy, 2016), noting stress can lead to negative physical responses in measurable ways.

There are myriad implications for educators. Educators must weigh the pros and cons of their career investments (financial, time) versus starting over professionally (not reaching full retirement, for example). Educators must decide whether or not to leave the profession in some capacity (change roles, districts, or states). Further, educators must assess their health status now and potential health complications in the future.

There are also implications for school and district leaders: principals, assistant

principals, and district leaders. These leaders *must* engage in training to provide additional research-based support for educators. School and district leaders must be more vocal in pressuring for legislation to remove some of the heavy burdens from teachers. If district leaders remain unable to provide the necessary supports, such as learning about and utilizing best practices with discipline and student engagement, leaders will face more significant problems than dissatisfied educators; they may face classrooms with no educators.

Implications for Legislators

Public education nationwide is mandated by federal, state, and local legislation written, ideally, to support educators and students (Chervinski, 2021). Because of the enormous impact politics have on educators, legislators must consider the current and possible future educator exodus. While not entirely clear through this study, N.C. educators have been posting on social media platforms in large numbers their dissatisfaction and despair following teaching throughout the pandemic. Perna (2022) noted results from an unnamed survey where from December 2021 to January 2022, 48% of teachers in America reported considering leaving the classroom; of that percentage, 34% considered leaving education entirely. While those percentages were not reflected in the data collected and reported in this study, the trends being reported by numerous media sources cannot be ignored (Perna, 2022). Twitter user Paige (2022) tweeted, “Our entire math department is leaving at the end of this year. I feel so bad for the kids, but again, it’s not them.”. This educator did not begin the school year with a full staff; Paige noted in a reply,

We never even had a full department to begin with. We went through 3 teachers

> for one position this year. We had 3 full time teachers for 600 kids. I was burnt out with all I had to do. But the biggest part was not being able to hire people… We also have a lot of turnover. About half of our staff will have left between the beginning of this year and the beginning of next year…[they] left teaching altogether or moved on to admin jobs.

Paige illustrated the situation facing many educators as they work to compensate for colleague vacancies.

Another Twitter user, Kurt Shepard (2022), tweeted in reply to an educator posting about leaving the profession, "Sorry to hear it. You can't take care of kids if you aren't taken care of yourself. I feel like that day is getting closer and closer for me."

Perna (2022) interviewed superintendents from different regions across the U.S. and questioned, "What percent of teachers quitting would create a cataclysmic drop in your organization's ability to educate young people?" (para. 2). Perna stated all superintendents responded with shockingly low numbers, but one superintendent said even one teacher quitting "would hurt us in a big way" (para. 2). In December 2021, an author for Caffeinated Rage examined the vacancies posted for classroom teachers in N.C.; that number was 8,794 as posted on the TeachNC SchoolSpring page. Searching the same jobs board in June 2022, there were 11,512 classroom positions open in N.C., a 31% increase in classroom teacher vacancies in less than 6 months. With this concerning increase in classroom educator vacancies, we must be alarmed into action.

Legislators at the local, state, and federal levels must consider increasing communication and collaboration between themselves as policymakers and educators. Legislators must also consider the financial implications of recruiting, training, and

attempting to retain, if the wave of educator exits does materialize.

To compound the seriousness of the stress-related issues caused by and/or exacerbated by the pandemic, there remains the issue of gun violence in schools. School shootings have been happening with regularity since the Columbine shooting in 1999, and they have only become more frequent, adding significantly to the daily stress educators face. Following the mass shooting in Uvalde, Texas, Reddit user Mindless_Command7079 (2022) posted,

> I'm a 7th grade teacher in Texas. I just quit my job today. We had a meeting today about what to do if an active shooter comes into our classroom. No, not with the school board, I was instructed by the vice principal of our school to hold a meeting with the students. 12 year old students…I spent period after period instructing no more than 3 children at a time what to do if someone comes to end their lives, how some children only survive if they hide under another dead child, or wipe the blood of deceased children on their bodies. The children were silent, scared, and one of them passed out. It's a week before Summer Vacation starts, but no one is excited, no one is happy. I decided by my last period that fuck it, these kids don't need to be taught anymore about death right now. I let them fuck around on their phones and eat the last of the candy from my special drawer…I have seen a lot of shit in my 5 years of teaching, including a kid who took a poop in his own locker. But this broke me. I can't do it anymore. After my last period class I told the principal I wasn't coming back. It isn't worth 17/hr. It isn't worth health insurance that only pays after I pay 10,000 dollars, it isn't worth getting attached to these children to see them die. And yeah sure, it probably won't

> happen to me or my class, but I'm sure the teachers in Uvalde thought the same thing. I can't do this anymore. I'm sorry.

The increasing demands educators face, including low pay, endless working hours, political and religious intrusions, and now keeping students safe from mass shooters, are causing them to at least consider leaving education (Matsuba & Williams, 2020). Elected politicians and legislators must consider these very serious issues facing educators at this time: the ongoing COVID-19 pandemic; chronic underfunding and overworking; and continued, sustained, gun violence and murder of educators and children in classrooms. If education as a system is to improve and if educators are to see more manageable working conditions, legislators must become proactive in their support of public education.

Implications for Future Research

Moving forward, researchers need to investigate the impact of COVID stress on educators in N.C. on a scale grander than 91 participants. Further research is needed: more studies with greater scope, even within N.C. One option for further research would be for NCDPI to incorporate COVID stress into the biannual surveys on Teacher Working Conditions, since districts in the state strive for 100% completion. This inclusion would be appropriate as long as the pandemic continues. This type of data would also provide a look at district-by-district data, which is not within the scope of this study.

Rothi et al. (2010) noted educators have higher than average levels of mental health disorders, including depression and anxiety, as compared to other occupations. Future research should continue to examine rates and levels of mental health disorders in educators and compare those data to rates of attrition. Another option for further research

would include a more specific population to include teachers who have resigned, retired (early or on time), or quit in any capacity since the start of the pandemic. This type of research could provide insight into why those educators left and offer specifics into predictors for educators leaving in the future. Beyond insight into the "why" of leaving, these types of data may also allow politicians and administrators to legislate and mandate the necessary changes required to foster a healthy educational system and teachers.

One Twitter user, Maggie (2021), posted, "Why I prefer using the term exploitation over burnout: Burnout makes it about worker feelings. Exploitation draws our attention to employer practices and policies which require structural solutions." Research must continue into educator burnout and exploitation in order to change the system for the better and provide additional needed support to educators.

Limitations

This study did not have enough participants to generalize to the larger N.C. educator population. The small number of participants is one direction for future research. Further research needs to be done on teaching during the pandemic and the impact on health and burnout of educators.

Since participants participated in online surveys, I trust the data reflect honesty in their self-reporting. Cognitive appraisal and recall bias were also potential limitations in participants' reporting of their experiences, both through the survey items and the online interviews. Because I asked participants to consider their experiences beginning with the N.C. public school shutdown in approximately March 2020 to the present, it is important to acknowledge the wide length of time from which participants may be remembering and reporting health events and experiences. This time frame is another limitation and

may allow for increased error in participant reporting due to recall bias; that is, a participant's difficulty in producing accurate memories (Garcia & Gustavson, 1997). Because of the essence of human nature, exact outcomes and exact causes and effects cannot be determined through this study. Future research must be conducted to address the gaps in my research.

Conclusions

Through this research, I cannot prove the educator exodus is going to increase in N.C. My study results do not show the same results as educator views posted on social media platforms, although there are statistically significant correlations between COVID stress, decreased physical and mental health, and occupational burnout. Through social media posts, where educators may feel more protected in an environment less formal than a research study, the dissatisfaction is clear and pervasive.

Before the educator crisis worsens in N.C., legislators must do more to support teachers. Educators in N.C. require more: They need smaller class sizes, lower workloads with fewer responsibilities outside of simply teaching, and increased salaries. Whether COVID-19 stays around for the next several years or not, one thing is clear: Educators need help. If the needs of educators are not recognized, acknowledged, and fully met without restrictions, the future of education in N.C. looks bleak. Educators are highly trained professionals; they need increased pay and more time to design and implement changes in curricula delivery. Educators need smaller class sizes to more effectively build positive, nurturing relationships and successfully deliver curricula. Educators need district leaders, legislators, and families to support their work, in both tangible and non-tangible ways such as protected planning periods, increased salaries, and communicating

messages of respect. Educators need this. Educators deserve this.

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Appendix A

North Carolina Educator Attrition Data by Percentage of Teachers Leaving, From Highest Rate to Lowest

LEA Code	Local Education Agency	Total Teachers	Teachers Leaving	Leaving as a % of Total Teachers
295	Innovative School District	13	3	23.08
660	Northampton County Schools	119	26	21.85
690	Pamlico County Schools	103	17	16.50
422	Weldon City Schools	63	10	15.87
940	Washington County Schools	105	16	15.24
480	Hyde County Schools	59	8	13.56
930	Warren County Schools	151	20	13.25
700	Elizabeth City-Pasquotank Public Schools	357	44	12.32
670	Onslow County Schools	1640	195	11.89
111	Asheville City Schools	354	41	11.58
080	Bertie County Schools	139	16	11.51
460	Hertford County Schools	192	22	11.46
170	Caswell County Schools	175	20	11.43
040	Anson County Schools	218	24	11.00
890	Tyrrell County Schools	55	6	10.91
291	Lexington City Schools	220	24	10.90
250	Craven County Schools	871	93	10.68
910	Vance County Schools	388	41	10.57
470	Hoke County Schools	583	61	10.46
260	Cumberland County Schools	3418	349	10.21
220	Clay County Schools	98	10	10.20
520	Jones County Schools	90	9	10.00
430	Harnett County Schools	1305	130	9.96
750	Polk County Schools	183	18	9.84
530	Lee County Schools	673	64	9.51
070	Beaufort County Schools	455	43	9.45
400	Greene County Schools	205	19	9.27
330	Edgecombe County Public Schools	399	36	9.02
630	Moore County Schools	809	73	9.02
190	Chatham County Schools	645	58	8.99
390	Granville County Schools	468	42	8.97
420	Halifax County Schools	190	17	8.95
241	Whiteville City Schools	160	14	8.75
681	Chapel Hill-Carrboro City Schools	903	79	8.75
680	Orange County Schools	534	46	8.61
270	Currituck County Schools	271	23	8.49
540	Lenoir County Public Schools	558	47	8.42
240	Columbus County Schools	382	32	8.38
600	Charlotte-Mecklenburg Schools	9070	743	8.19
770	Richmond County Schools	464	38	8.19
980	Wilson County Schools	696	57	8.19
410	Guilford County Schools	4735	385	8.13
090	Bladen County Schools	277	22	7.94
100	Brunswick County Schools	822	65	7.90
340	Winston Salem/ Forsyth County Schools	3767	295	7.83
060	Avery County Schools	154	12	7.79
730	Person County Schools	284	22	7.75
280	Dare County Schools	402	31	7.71
780	Public Schools of Robeson County	1444	110	7.62
720	Perquimans County Schools	119	9	7.56
320	Durham Public Schools	2422	182	7.51
790	Rockingham County Schools	732	55	7.51
360	Gaston County Schools	1994	149	7.47

920	Wake County Schools	10449	764	7.31
870	Swain County Schools	137	10	7.30
010	Alamance-Burlington Schools	1511	110	7.28
491	Mooresville Graded School District	387	28	7.24
580	Martin County Schools	224	16	7.14
840	Stanly County Schools	554	39	7.04
150	Camden County Schools	129	9	6.98
110	Buncombe County Schools	1645	114	6.93
370	Gates County Schools	130	9	6.92
181	Hickory City Schools	275	19	6.91
740	Pitt County Schools	1578	109	6.91
620	Montgomery County Schools	262	18	6.87
830	Scotland County Schools	423	29	6.86
292	Thomasville City Schools	161	11	6.83
560	Macon County Schools	322	22	6.83
310	Duplin County Schools	602	41	6.81
960	Wayne County Public Schools	1240	84	6.77
810	Rutherford County Schools	537	36	6.70
800	Rowan-Salisbury Schools	1255	84	6.69
900	Union County Public Schools	2555	171	6.69
640	Nash-Rocky Mount Schools	899	60	6.67
350	Franklin County Schools	526	35	6.65
590	McDowell County Schools	426	28	6.57
140	Caldwell County Schools	810	53	6.54
760	Randolph County School System	1039	68	6.54
160	Carteret County Public Schools	614	40	6.51
490	Iredell-Statesville Schools	1220	79	6.48
130	Cabarrus County Schools	1994	128	6.42
880	Transylvania County Schools	268	17	6.34
500	Jackson County Public Schools	257	16	6.23
650	New Hanover County Schools	1671	104	6.23
862	Mount Airy City Schools	113	7	6.19
120	Burke County Schools	764	47	6.15
710	Pender County Schools	588	35	5.95
850	Stokes County Schools	421	25	5.94
821	Clinton City Schools	205	12	5.85
440	Haywood County Schools	497	29	5.84
950	Watauga County Schools	377	22	5.84
132	Kannapolis City Schools	361	21	5.82
180	Catawba County Schools	982	57	5.80
020	Alexander County Schools	316	18	5.70
970	Wilkes County Schools	600	33	5.50
510	Johnston County Public Schools	2408	130	5.40
450	Henderson County Schools	899	48	5.34
030	Alleghany County Schools	113	6	5.31
990	Yadkin County Schools	364	19	5.22
995	Yancey County Schools	154	8	5.19
300	David County Schools	420	21	5.00
290	Davidson County Schools	1187	59	4.97
050	Ashe County Schools	227	11	4.85
200	Cherokee County Schools	272	13	4.78
861	Elkin City Schools	84	4	4.76
820	Sampson County Schools	527	25	4.74
182	Newton Conover City Schools	194	9	4.64
210	Edenton-Chowan Schools	135	6	4.62
550	Lincoln County Schools	744	34	4.57

380	Graham County Schools	91	4	4.40
421	Roanoke Rapids City Schools	182	8	4.40
230	Cleveland County Schools	980	38	3.88
761	Asheboro City Schools	325	12	3.69
570	Madison County Schools	172	6	3.49
860	Surry County Schools	522	18	3.45
610	Mitchell County Schools	137	4	2.91

Note. North Carolina State Board of Education Department of Public Instruction (2021).

Appendix B

Study Alignment

Problem Statement: Educators in N.C. have been under stress and the COVID-19 pandemic has only increased that stress.

Purpose Statement: The purpose of this study is to add to the available literature and research exploring the possible relationships between educators physical, mental, and emotional health, COVID stress, and occupational burnout.

Research Questions:	**Data Collection Instrument or Method**	**Instrument Item**
RQ 1	CSS Rate all CSS items from (0) Not at all (1) Slightly (2) Moderately (3) Very (4) Extremely	I am worried about catching the virus.
RQ 1	CSS	I am worried that I can't keep my family safe from the virus.
RQ 1	CSS	I am worried that our healthcare system won't be able to protect my loved ones.
RQ 1	CSS	I am worried that our healthcare system is unable to keep me safe from the virus.
RQ 1	CSS	I am worried that basic hygiene (e.g. handwashing) is not enough to keep me safe from the virus.
RQ 1	CSS	I am worried that social distancing is not enough to keep me safe from the virus.
RQ 1	CSS	I am worried about grocery stores running out of food.
RQ 1	CSS	I am worried that grocery stores will close down.
RQ 1	CSS	I am worried about grocery stores running out of cleaning or disinfectant supplies.
RQ 1	CSS	I am worried about grocery stores running out of flu or cold remedies.
RQ 1	CSS	I am worried about grocery stores running out of water.
RQ 1	CSS	I am worried about pharmacies running out of prescription medicines.
RQ 1	CSS	I am worried that foreigners are spreading the virus in my country.
RQ 1	CSS	If I went to a restaurant that specialized in foreign foods, I'd be worried about catching the virus.
RQ 1	CSS	I am worried about coming into contact with foreigners because they might have the virus.
RQ 1	CSS	If I met a person from a foreign country, I'd be worried they might have the virus.

RQ 1	CSS	If I was in an elevator with a group of foreigners, I'd be worried that they're infected with the virus.
RQ 1	CSS	I am worried that foreigners are spreading the virus because they're not as clean as we are.
RQ 1	CSS	I am worried that if I touched something in a public space (e.g., handrail, door handle), I would catch the virus.
RQ 1	CSS	I am worried that if someone coughed or sneezed near me, I would catch the virus.
RQ 1	CSS	I am worried that people around me will infect me with the virus.
RQ 1	CSS	I am worried about taking change in cash transactions.
RQ 1	CSS	I am worried that I might catch the virus from handling money or using a debit machine.
RQ 1	CSS	I worry that my mail has been contaminated by mail handlers.
RQ 1	CSS	I have trouble concentrating because I keep thinking about the virus.
RQ 1	CSS	Disturbing mental images about the virus pop into my mind against my will.
RQ 1	CSS	I have trouble sleeping because I worry about the virus.
RQ 1	CSS	I thought about the virus when I didn't mean to.
RQ 1	CSS	Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart.
RQ 1	CSS	I have bad dreams about the virus.
RQ 2	PHQ Rate all PHQ items from (0) Not bothered at all (1) Bothered a little (2) Bothered a lot	Stomach pain
RQ 2	PHQ	Back pain
RQ 2	PHQ	Pain in your arms, legs, or joints (knees, hips, etc.)
RQ 2	PHQ	Menstrual cramps or other problems with periods (if applicable)
RQ 2	PHQ	Headaches
RQ 2	PHQ	Chest pain

RQ 2	PHQ	Dizziness
RQ 2	PHQ	Fainting spells
RQ 2	PHQ	Feeling your heart pound or race
RQ 2	PHQ	Shortness of breath
RQ 2	PHQ	Pain or problems during sexual intercourse
RQ 2	PHQ	Constipation, loose bowels, or diarrhea
RQ 2	PHQ	Nausea, gas, or indigestion
RQ 2	PHQ	Feeling tired or having low energy
RQ 2	PHQ	Trouble sleeping
RQ 2	PHQ During the course of the pandemic, how often have you been bothered by any of the following symptoms? (0) (1) day	Little interest or pleasure in doing things
RQ 2	PHQ	Feeling down, depressed, or hopeless
RQ 2	PHQ	Trouble falling or staying asleep, or sleeping too much
RQ 2	PHQ	Feeling tired or having little energy
RQ 2	PHQ	Poor appetite or overeating
RQ 2	PHQ	Trouble concentrating on things, such as reading the newspaper or watching television
RQ 2	PHQ	Moving or speaking so slowly that other people have noticed? Or the opposite- being so fidgety or restless that you have been moving around a lot more than usual
RQ 2	PHQ	Thoughts that you would be better off dead or of hurting yourself in some way
RQ 2	PHQ During the course of the pandemic (0) No (1) Yes	Have you had an anxiety attack- suddenly feeling fear or panic?
RQ 2	PHQ	Has this ever happened prior to the pandemic?

RQ 2	PHQ	Do some of these attacks come suddenly out of the blue- that is, in situations where you don't expect to be nervous or uncomfortable?
RQ 2	PHQ	Do these attacks bother you a lot or are you worried about having another attack?
RQ 2	PHQ Think about your last bad anxiety attack during the pandemic. (0) No (1) Yes	Were you short of breath?
RQ 2	PHQ	Did your heart race, pound, or skip?
RQ 2	PHQ	Did you have chest pain or pressure?
RQ 2	PHQ	Did you sweat?
RQ 2	PHQ	Did you feel as if you were choking?
RQ 2	PHQ	Did you have hot flashes or chills?
RQ 2	PHQ	Did you have nausea or an upset stomach, or the feeling that you were going to have diarrhea?
RQ 2	PHQ	Did you feel dizzy, unsteady, or faint?
RQ 2	PHQ	Did you have tingling or numbness in parts of your body?
RQ 2	PHQ	Did you tremble or shake?
RQ 2	PHQ	Were you afraid you were dying?
RQ 2	PHQ During the course of the pandemic, how often have you been bothered by any of the following problems? (0) Not at all (1) Several days (2) More than half the days	Feeling nervous, anxious, on edge, or worrying a lot about different things.
RQ 2	PHQ	Feeling restless so that it is hard to sit still.
RQ 2	PHQ	Getting tired very easily.
RQ 2	PHQ	Muscle tension, aches, or soreness.
RQ 2	PHQ	Trouble falling asleep or staying asleep.
RQ 2	PHQ	Trouble concentrating on things, such as reading a book or watching TV.

RQ 2	PHQ	Becoming easily annoyed or irritable.
RQ 2	PHQ During the course of the pandemic, (0) No (1) Yes	Do you often feel that you can't control what or how much you eat?
RQ 2	PHQ	Do you often eat, within any 2-hour period, what most people would regard as an unusually large amount of food?
RQ 2	PHQ	Has this been as often, on average, as twice a week for the course of the pandemic?
RQ 2	PHQ During the course of the pandemic, have you often done any of the following in order to avoid gaining weight? (0) No (1) Yes	Made yourself vomit?
RQ 2	PHQ	Took more than twice the recommended dose of laxatives?
RQ 2	PHQ	Fasted- not eaten anything at all for at least 24 hours?
RQ 2	PHQ	Exercised for more than an hour specifically to avoid gaining weight after binge eating?
RQ 2	PHQ If you checked "yes" to any of these ways to avoid gaining weight, (0) No (1) Yes	Were any as often, on average, as twice a week?
RQ 2	PHQ	Do you ever drink alcohol (including beer or wine)?
RQ 2	PHQ Have any of the following happened to you more than once during the course of the pandemic?	You drank alcohol even though a doctor suggested that you stop drinking because of a problem with your health.
RQ 2	PHQ	You drank alcohol, were high from alcohol, or hung over while you were working, going to school, or taking care of children or other responsibilities.
RQ 2	PHQ	You missed or were late for work, school, or other activities because you were drinking or hung over.
RQ 2	PHQ	You had a problem getting along with other people while you were drinking.

RQ 2	PHQ	You drove a car after having several drinks or after drinking too much.
RQ 2	PHQ If you checked off any problems on this questionnaire, (0) Not difficult at all (1) Somewhat difficult (2) Very difficult (3) Extremely difficult	how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people during the course of the pandemic?
RQ 3	MBI-ES How often have you felt this way about your job during the course of the pandemic (March 2020-present)? (0) Never (1) A few times a year or less (2) Once a month or less (3) A few times a month (4) Once a week (5) A few times a week (6) Every day	I feel emotionally drained from my work. (sample question)
RQ 3	MBI-ES	I have accomplished many worthwhile things while at this job. (sample question)
RQ 3	MBI-ES	I don't really care what happens to some students. (sample question)
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected

RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	MBI-ES	Protected
RQ 3	Yes, current role Yes, different role Yes, different state Not at all	Do you intend to return to teaching next year?

Appendix C

Social Media Groups for Educators

Group Name	Being used?	Group size	Rules about soliciting for research?
A Teacher in Need- NC	Yes	328	No
Black Educators Association	Yes	3,700	No- admin permission granted
Durham Association of Educators	Yes	2,500	No
NC Education Roundtable	Yes	1,400	No
North Carolina Issues in Education	Yes	584	No- admin permission granted
North Carolina Teachers for Change	Yes	3,400	No- admin permission granted
North Carolina Teachers United	Yes	42,000	No- admin permission granted
North Carolina Teachers United- Educators Only!	Yes	2,700	No- admin permission granted
North Carolina Association of Educators	No	1,600	No- admin requested that I email communications director: Hi Leah, I would email the Communications manager Kevin Rogers at Kevin.rogers@ncae.org for that permission
Educators engaging with Educators	No	12,000	No; admin said that it won't be approved due to one particular admin. She recommended posting in Reflections of an Educator.
North Carolina Teacher Support	No	159	Unsure- awaiting admin permission
Teachers Ask Teachers	No	96,000	Unsure- awaiting admin permission
Teachers Using Canvas	No	71,400	Unsure- awaiting admin permission
WeAreTeachers- First Years!	No	15,200	ADMIN PERMISSION DENIED
Badass Teachers Association	If needed	68,000	No
Digital INBs and Binders	If needed	24,200	No; permission granted from admin
Middle & High School: Workshop Instruction and Units of Study with TCRWP	If needed	13,000	No
Middle School Math Teachers	If needed	34,000	No
Middle School Science Teachers	If needed	17,700	No- permission from admin
National Board Certified Teacher	If needed	13,000	No
Science Teacher Distance Learning Resources	If needed	8,100	No- admin permission granted

Teacher Education and the Black Community: A Special Issue of JNE	If needed	9,400	No

Appendix D

Script to Post on Facebook Groups for Participation Solicitation

Good day,

Are you a public school educator in N.C.? Do you teach in kindergarten through 12th grade? I need you! I am posting to request your help in gathering information about educators' experiences while teaching during the time of COVID-19. Your responses to these questions will add to the growing body of research on the challenges of teaching during stressful events and whether educator burnout is impacted.

Your participation in this survey is completely voluntary, you may quit at any time without penalty, and all of your responses will be de-identified. You will be asked to provide the N.C. county in which you work to confirm you are a N.C. teacher. No personally identifiable information will be collected or associated with your responses to this survey. At the end, you will be asked if you would like to schedule an interview with me to discuss your experiences in more detail. In order to schedule this, you must provide your contact information. However, the interview is optional and will not be associated with your survey participation and results.

It is estimated that it will take approximately 60 minutes to complete this survey. You can take the survey at INSERT QUALTRICS LINK HERE.

The Institutional Review Board at Gardner-Webb University has approved this study. If you have further questions, please contact me at XXXXX. Thank you so much for your consideration and participation!

Sincerely,

Leah Massey Huttlinger

Appendix E

Personal Communications With COVID Stress Scales Creators

Gmail

Leah Landrum <leahmlandrum@gmail.com>

Re: COVID Stress Scales Use

5 messages

Gordon Asmundson <gordon.asmundson@uregina.ca> Thu, Jan 14, 2021 at 10:28 AM
To: Leah Landrum <lhuttlinger@gardner-webb.edu>
Cc: "steven.taylor@ubc.ca" <steven.taylor@ubc.ca>

CAUTION: This email originated from outside of the Gardner-Webb.edu domain. Do not click links or open attachments unless you verify that the links and/or attachments are safe.

---------- Forwarded message ----------
From: Gordon Asmundson <gordon.asmundson@uregina.ca>
To: Leah Landrum <lhuttlinger@gardner-webb.edu>
Cc: "steven.taylor@ubc.ca" <steven.taylor@ubc.ca>
Bcc:
Date: Thu, 14 Jan 2021 09:28:38 -0600
Subject: Re: COVID Stress Scales Use
Dear Leah:

The COVIS Stress Scales are freely available to download and use in research and clinical practice under the Resources/For Professionals tab at corona phobia.org. Additional details regarding the scales are provided there.

I hope this is helpful.

Sincerely,

Dr. Asmundson

****

Gordon J. G. Asmundson, SOM, PhD, RD Psych, FRSC
Saskatchewan Order of Merit
Fellow of Royal Society of Canada
CACBT Certified in Cognitive Behaviour Therapy
Professor of Psychology
Co-Director, PsyPAN Network (coronaphobia.org)

Editor-in-Chief, Journal of Anxiety Disorders
http://www.journals.elsevier.com/journal-of-anxiety-disorders

Development Editor, Clinical Psychology Review
https://www.journals.elsevier.com/clinical-psychology-review/

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Regina, Saskatchewan
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access articles at

https://scholar.google.ca/scholar?hl=en&as_sdt=0%2C5&q=gordon+asmundson&oq=

web: aibl.ca
phone: (306) 337-2415

e-mail: gordon.asmundson@uregina.ca

On Jan 14, 2021, at 9:09 AM, Leah Landrum <lhuttlinger@gardner-webb.edu> wrote:

Good morning, Drs. Asmundson and Taylor!

My name is Leah Landrum and I am a doctoral candidate in the EDCI (Education Curriculum & Instruction) program at Gardner-Webb University in North Carolina, US.

I aim to conduct research on public school teachers in North Carolina and how their work stress, mental health, and job satisfaction have been impacted during the time of COVID. I came across the COVID stress scales in my research and am interested in using this as one measure in my study.

Would that be possible? I find it much more detailed and thorough than the Pandemic Stress Index. If so, I have some questions as I'm not sure how to go about using such a new Index.

I am looking to triangulate data through interviews and additional quantitative measures including the Copenhagen Psychosocial Questionnaire and Mental Health Index.

Thank you, in advance, for your time. I very much appreciate it!

Leah Landrum

smime.p7s
2K

Leah Landrum <leahmlandrum@gmail.com> Sat, Aug 14, 2021 at 2:37 PM
To: Gordon Asmundson <gordon.asmundson@uregina.ca>
Cc: Leah Landrum <lhuttlinger@gardner-webb.edu>, "steven.taylor@ubc.ca" <steven.taylor@ubc.ca>

Thank you so much! I see that the CSS may not be modified in any way without permission. I would like to respectfully ask permission to use 24 items and omit 12.

I would like to omit the 6 items relating to economic consequences and the 6 items relating to xenophobia. I am aiming to survey public school educators in North Carolina (U.S.), and my research is focusing on educators' perceptions of teaching during COVID. I am also hoping to use Maslach Burnout Inventory as well as the Patient Health Questionnaire - 15.

I wish to not overwhelm participants, so I am seeking permission to shorten the CSS.

Thank you in advance for your consideration!

Leah

On Thu, Jan 14, 2021 at 10:28 AM Gordon Asmundson <gordon.asmundson@uregina.ca> wrote:

---------- Forwarded message ----------
From: Gordon Asmundson <gordon.asmundson@uregina.ca>
To: Leah Landrum <lhuttlinger@gardner-webb.edu>
Cc: "steven.taylor@ubc.ca" <steven.taylor@ubc.ca>
Bcc:
Date: Thu, 14 Jan 2021 09:28:38 -0600
Subject: Re: COVID Stress Scales Use
Dear Leah:

The COVIS Stress Scales are freely available to download and use in research and clinical practice under the Resources/For Professionals tab at corona phobia.org. Additional details regarding the scales are provided there.

I hope this is helpful.

Sincerely,

Dr. Asmundson

****
Gordon J. G. Asmundson, SOM, PhD, RD Psych, FRSC
Saskatchewan Order of Merit
Fellow of Royal Society of Canada
CACBT Certified in Cognitive Behaviour Therapy
Professor of Psychology
Co-Director, PsyPAN Network (coronaphobia.org)

Editor-in-Chief, Journal of Anxiety Disorders
http://www.journals.elsevier.com/journal-of-anxiety-disorders

Development Editor, Clinical Psychology Review
https://www.journals.elsevier.com/clinical-psychology-review/

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access articles at

https://scholar.google.ca/scholar?hl=en&as_sdt=0%2C5&q=gordon+asmundson&oq=

web: aibl.ca
phone: (306) 337-2415
fax: (306) 337-3275
e-mail: gordon.asmundson@uregina.ca
****

On Jan 14, 2021, at 9:09 AM, Leah Landrum <lhuttlinger@gardner-webb.edu> wrote:

Good morning, Drs. Asmundson and Taylor!

My name is Leah Landrum and I am a doctoral candidate in the EDCI (Education Curriculum & Instruction) program at Gardner-Webb University in North Carolina, US.

I aim to conduct research on public school teachers in North Carolina and how their work stress, mental health, and job satisfaction have been impacted during the time of COVID. I came across the COVID stress scales in my research and am interested in using this as one measure in my study.

Would that be possible? I find it much more detailed and thorough than the Pandemic Stress Index. If so, I have some questions as I'm not sure how to go about using such a new Index.

I am looking to triangulate data through interviews and additional quantitative measures including the Copenhagen Psychosocial Questionnaire and Mental Health Index.

Thank you, in advance, for your time. I very much appreciate it!

Leah Landrum

Geoffrey Rachor <Geoffrey.Rachor@uregina.ca> Wed, Sep 1, 2021 at 2:57 PM
To: lhuttlinger@gardner-webb.edu, leahmlandrum@gmail.com
Cc: steven.taylor@ubc.ca, Gordon Asmundson <Gordon.Asmundson@uregina.ca>

Dear Leah,

Thank you for your interest in using the COVID Stress Scales (CSS) for your research, and for seeking permission to modify the scale for your purposes.

In this case, we are going to approve your request to omit the 12 items pertaining to xenophobia and socioeconomic consequences. However, we would advise against omitting these items. While the scales can be scored individually, you will be unable to obtain a total CSS score, which range from 0 to 144 using the 36 items within the scales, and correspond to a 'COVID Stress Syndrome'.

If you have any questions, or would like more information regarding the use of the scales, please let me know! Best of luck with your research.

Sincerely,

Geoffrey Rachor

Geoffrey Rachor, MSc
Research Coordinator
Anxiety and Illness Behaviours Lab (AIBL)
University of Regina, CK-211

MA Student, Clinical Psychology
Department of Psychology, University of Regina

Email: geoffrey.rachor@uregina.ca
Phone: 780-983-3804

>>> Gordon Asmundson 09/01/2021, 12:42 PM >>> Please do. Thanks.

****

Gordon J. G. Asmundson, SOM, PhD, RD Psych, FRSC
Saskatchewan Order of Merit
Fellow of Royal Society of Canada
CACBT Certified in Cognitive Behaviour Therapy
Professor of Psychology
Co-Director, PsyPAN Network (coronaphobia.org)

Editor-in-Chief, Journal of Anxiety Disorders
http://www.journals.elsevier.com/journal-of-anxiety-disorders

Editor-in-Chief, Clinical Psychology Review
https://www.journals.elsevier.com/clinical-psychology-review/

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Regina, Saskatchewan
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access articles at

https://scholar.google.ca/scholar?hl=en&as_sdt=0%2C5&q=gordon+asmundson&oq=

web: aibl.ca
phone: (306) 337-2415
fax: (306) 337-3275
e-mail: gordon.asmundson@uregina.ca
****

On Sep 1, 2021, at 12:22 PM, Geoffrey Rachor <Geoffrey.Rachor@uregina.ca> wrote:
Thanks Gord, would you like me to email this researcher back and approve this request?

Geoffrey Rachor, MSc
Research Coordinator
Anxiety and Illness Behaviours Lab (AIBL)
University of Regina, CK-211

MA Student, Clinical Psychology
Department of Psychology, University of Regina

Email: geoffrey.rachor@uregina.ca
Phone: 780-983-3804

>>> Gordon Asmundson 09/01/2021, 12:13 PM >>> I would advise against this but approve in this instance.

****
Gordon J. G. Asmundson, SOM, PhD, RD Psych, FRSC
Saskatchewan Order of Merit
Fellow of Royal Society of Canada
CACBT Certified in Cognitive Behaviour Therapy
Professor of Psychology
Co-Director, PsyPAN Network (coronaphobia.org)

Editor-in-Chief, Journal of Anxiety Disorders
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https://scholar.google.ca/scholar?hl=en&as_sdt=0%2C5&q=gordon+asmundson&oq=

web: aibl.ca
phone: (306) 337-2415
fax: (306) 337-3275
e-mail: gordon.asmundson@uregina.ca
****

Begin forwarded message:
From: Leah Landrum <leahmlandrum@gmail.com>
Subject: Re: COVID Stress Scales Use
Date: August 14, 2021 at 12:37:59 PM CST
To: Gordon Asmundson <gordon.asmundson@uregina.ca>
Cc: Leah Landrum <lhuttlinger@gardner-webb.edu>, "steven.taylor@ubc.ca" <steven.taylor@ubc.ca>
[Quoted text hidden]

Leah Landrum <leahmlandrum@gmail.com> Mon, Sep 13, 2021 at 9:05 AM
To: landruml@wataugaschools.org

[Quoted text hidden]

Leah Landrum <leahmlandrum@gmail.com> Wed, Oct 27, 2021 at 2:27 PM
To: landruml@wataugaschools.org

[Quoted text hidden]

Appendix F

COVID Stress Scales (Taylor et al., 2020)

Item	Scale
I am worried about catching the virus	D
I am worried that I can't keep my family safe from the virus	D
I am worried that our healthcare system won't be able to protect my loved ones	D
I am worried that our healthcare system is unable to keep me safe from the virus	D
I am worried that basic hygiene (e.g., handwashing) is not enough to keep me safe from the virus	D
I am worried that social distancing is not enough to keep me safe from the virus	D
I am worried about grocery stores running out of food	SE
I am worried that grocery stores will close down	SE
I am worried about grocery stores running out of cleaning or disinfectant supplies	SE
I am worried about grocery stores running out of cold or flu remedies	SE
I am worried about grocery stores running out of water	SE
I am worried about pharmacies running out of prescription medicines	SE
I am worried that foreigners are spreading the virus in my country	X
If I went to a restaurant that specialized in foreign foods, I'd be worried about catching the virus	X
I am worried about coming into contact with foreigners because they might have the virus	X
If I met a person from a foreign country, I'd be worried that they might have the virus	X
If I was in an elevator with a group of foreigners, I'd be worried that they're infected with the virus	X
I am worried that foreigners are spreading the virus because they're not as clean as we are	X
I am worried that if I touched something in a public space (e.g., handrail, door handle), I would catch the virus	C
I am worried that if someone coughed or sneezed near me, I would catch the virus	C
I am worried that people around me will infect me with the virus	C
I am worried about taking change in cash transactions	C
I am worried that I might catch the virus from handling money or using a debit machine	C
I am worried that my mail has been contaminated by mail handlers	C
I had trouble concentrating because I kept thinking about the virus	T
Disturbing mental images about the virus popped into my mind against my will	T
I had trouble sleeping because I worried about the virus	T
I thought about the virus when I didn't mean to	T
Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart	T
I had bad dreams about the virus	T

Appendix G

Patient Health Questionnaire (Spitzer et al., 1999)

PATIENT HEALTH QUESTIONNAIRE (PHQ)

This questionnaire is an important part of providing you with the best health care possible. Your answers will help in understanding problems that you may have. Please answer every question to the best of your ability unless you are requested to skip over a question.

Name_____ **Age**_____ **Sex:** ☐ **Female** ☐ **Male** **Today's Date**_____

1. During the last 4 weeks, how much have you been bothered by any of the following problems?	**Not bothered**	**Bothered a little**	**Bothered a lot**
a. Stomach pain	☐	☐	☐
b. Back pain	☐	☐	☐
c. Pain in your arms, legs, or joints (knees, hips, etc.)	☐	☐	☐
d. Menstrual cramps or other problems with your periods	☐	☐	☐
e. Pain or problems during sexual intercourse	☐	☐	☐
f. Headaches	☐	☐	☐
g. Chest pain	☐	☐	☐
h. Dizziness	☐	☐	☐
i. Fainting spells	☐	☐	☐
j. Feeling your heart pound or race	☐	☐	☐
k. Shortness of breath	☐	☐	☐
l. Constipation, loose bowels, or diarrhea	☐	☐	☐
m. Nausea, gas, or indigestion	☐	☐	☐

2. Over the last 2 weeks, how often have you been bothered by any of the following problems?	**Not at all**	**Several days**	**More than half the days**	**Nearly every day**
a. Little interest or pleasure in doing things	☐	☐	☐	☐
b. Feeling down, depressed, or hopeless	☐	☐	☐	☐
c. Trouble falling or staying asleep, or sleeping too much	☐	☐	☐	☐
d. Feeling tired or having little energy	☐	☐	☐	☐
e. Poor appetite or overeating	☐	☐	☐	☐
f. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	☐	☐	☐	☐
g. Trouble concentrating on things, such as reading the newspaper or watching television	☐	☐	☐	☐
h. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	☐	☐	☐	☐
i. Thoughts that you would be better off dead or of hurting yourself in some way	☐	☐	☐	☐

FOR OFFICE CODING: Som Dis if at least 3 of #1a-m are "a lot" and lack an adequate biol explanation.
Maj Dep Syn if answers to #2a or b and five or more of #2a-i are at least "More than half the days" (count #2i if present at all).
Other Dep Syn if #2a or b and two, three, or four of #2a-i are at least "More than half the days" (count #2i if present at all).

3. Questions about anxiety.		NO	YES
a.	In the last 4 weeks, have you had an anxiety attack — suddenly feeling fear or panic?	☐	☐
If you checked "NO", go to question #5.			
b.	Has this ever happened before?	☐	☐
c.	Do some of these attacks come suddenly out of the blue — that is, in situations where you don't expect to be nervous or uncomfortable?	☐	☐
d.	Do these attacks bother you a lot or are you worried about having another attack?	☐	☐

4. Think about your last bad anxiety attack.		NO	YES
a.	Were you short of breath?	☐	☐
b.	Did your heart race, pound, or skip?	☐	☐
c.	Did you have chest pain or pressure?	☐	☐
d.	Did you sweat?	☐	☐
e.	Did you feel as if you were choking?	☐	☐
f.	Did you have hot flashes or chills?	☐	☐
g.	Did you have nausea or an upset stomach, or the feeling that you were going to have diarrhea?	☐	☐
h.	Did you feel dizzy, unsteady, or faint?	☐	☐
i.	Did you have tingling or numbness in parts of your body?...	☐	☐
j.	Did you tremble or shake?	☐	☐
k.	Were you afraid you were dying?	☐	☐

5. Over the last 4 weeks, how often have you been bothered by any of the following problems?		Not at all	Several days	More than half the days
a.	Feeling nervous, anxious, on edge, or worrying a lot about different things.	☐	☐	☐
If you checked "Not at all", go to question #6.				
b.	Feeling restless so that it is hard to sit still.	☐	☐	☐
c.	Getting tired very easily.	☐	☐	☐
d.	Muscle tension, aches, or soreness.	☐	☐	☐
e.	Trouble falling asleep or staying asleep.	☐	☐	☐
f.	Trouble concentrating on things, such as reading a book or watching TV.	☐	☐	☐
g.	Becoming easily annoyed or irritable.	☐	☐	☐

FOR OFFICE CODING: Pan Syn if all of #3a-d are 'YES' and four or more of #4a-k are 'YES'. Other Anx Syn if #5a and answers to three or more of #5b-g are "More than half the days".

	NO	YES
6. Questions about eating.		
a. Do you often feel that you can't control what or how much you eat?	☐	☐
b. Do you often eat, within any 2-hour period, what most people would regard as an unusually large amount of food?	☐	☐
If you checked "NO" to either #a or #b, go to question #9.		
c. Has this been as often, on average, as twice a week for the last 3 months?	☐	☐

7. In the last 3 months have you often done any of the following in order to avoid gaining weight?	NO	YES
a. Made yourself vomit?	☐	☐
b. Took more than twice the recommended dose of laxatives?	☐	☐
c. Fasted — not eaten anything at all for at least 24 hours?	☐	☐
d. Exercised for more than an hour specifically to avoid gaining weight after binge eating?	☐	☐

	NO	YES
8. If you checked "YES" to any of these ways of avoiding gaining weight, were any as often, on average, as twice a week?	☐	☐

	NO	YES
9. Do you ever drink alcohol (including beer or wine)?	☐	☐
If you checked "NO" go to question #11.		

10. Have any of the following happened to you more than once in the last 6 months?	NO	YES
a. You drank alcohol even though a doctor suggested that you stop drinking because of a problem with your health.	☐	☐
b. You drank alcohol, were high from alcohol, or hung over while you were working, going to school, or taking care of children or other responsibilities.	☐	☐
c. You missed or were late for work, school, or other activities because you were drinking or hung over.	☐	☐
d. You had a problem getting along with other people while you were drinking.	☐	☐
e. You drove a car after having several drinks or after drinking too much.	☐	☐

11. If you checked off any problems on this questionnaire, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

FOR OFFICE CODING: Bul Ner if #6a,b, and-c and #8 are all 'YES'; Bin Eat Dis the same but #8 either 'NO' or left blank.
Alc Abu if any of #10a-e is 'YES'.

Appendix H

Interview 1 Transcript

Thu, Apr 7, 2022 · 7:28 AM33:03Owner: Leah Huttlinger
Shared with:Leah (you)

SUMMARY KEYWORDS

students, teaching, year, absences, assistant
principal, district, class, masks, interview, worse, semester, principal, english, chromebook, march, school, platforms, home, pandemic, kids

SPEAKERS

Participant 1, Leah

Leah Huttlinger
0:01
All right. Thank you. Thank you. Thank you so much for being willing to talk with me this morning. I know how incredibly valuable and limited your time is. So we'll go ahead and get started. My name is Leah Huttlinger. I'm a doctoral candidate at Gardner Webb University, and I'm researching educator perceptions on what it's been like teaching during the COVID 19 pandemic.

This interview is anticipated to take less than an hour, but it's totally up to you as far as how in depth you do or don't want to go. And any way you go with that is fine. Your participation is voluntary, and you may stop participating at any time with no repercussions. So you have already completed a digital survey. During this virtual interview, you are being audio and video recorded. At any time during this interview, you have the right to withdraw. You also have the right to refuse to answer any question or questions without penalty. If you choose to withdraw, you can ask that any or all of your data that has been collected, be destroyed. There's no deception involved in this study. Because we are recording this interview, it is possible to tell your identity. But in the final dissertation writing, your identity is going to be confidential and you're going to be assigned a pseudonym. So nobody will be able to identify you in the final product. The recordings are going to be kept for three years and then destroyed after that. There are minimal risks to this, including minor psychological discomfort, there are no professional risks. So your principal's not gonna know, your superintendent is not going to be sent a copy of this recording or anything. There are no direct benefits and no payment involved in participating. But the study may help us to understand potential relationships between COVID stress and teaching. Again, you have the right to withdraw. And you're happy to withdraw during our interview or after you can send me an email or you can call me and ask me to delete your information.

So the interview is going to begin with a general question about your current position. And then I'll ask you to describe your experience teaching during the COVID 19 pandemic. This can be any time from when your school shutdown approximately March of 2019 to today. Okay, when we are finished, I'll have some closing information for you.

So Participant 1, if you would please tell me about your current position. And what maybe a typical day at school looks like for you.
Participant 1
Participant 1

3:14
So I teach English. Sorry, I just want to apologize- I have a dreadful case of the allergies.

Leah Huttlinger
3:23
No apology necessary.
Participant 1
Participant 1
3:25
Okay, so I teach. This year, I'm teaching in 12th Grade English. And I have one class of a CT LSAT prep. So currently, because you work on the block system, three standard grade classes in the fall semester. And I currently have two honors level classes, and then the ACT PSAT prep. And this is my planning period, which I have every day that I'm not covering for another teacher.

Leah Huttlinger
4:03
How often do you cover for another teacher?
Participant 1
Participant 1
4:07
At the moment, it's much better than it was at the beginning of the year, it was an almost daily occurrence. But it's much less now it's maybe once a week.

Leah Huttlinger
4:22
How would you describe your experience of teaching during the pandemic?
Participant 1
Participant 1
4:29
Horrific. In March of 2019, when we close down when the whole thing started, we we'd had maybe a week of hints and very rushed professional development. Let me just pause there before that I had used very, very few digital of platforms, because the students at when I, when the pandemic started, I was teaching ninth grade, and very few of there were very few opportunities for them to go to work online. And to make use of any digital platforms. So I had really not familiarized myself with many of the platforms. I taught theater for 19 years. So then, and then I retired and came back. So when I came back, it was to teach English. The first couple of weeks were terrible. I had a little anxiety breakdown, the day that they said everything has to be on whatever the platform was, it was in power school, it was called something else. It had, everything has to be on that platform. And I had no idea how to do anything. So I had a little break down then. And then got through that. So we first thought that, you know, the two weeks to flatten the curve was really going to be two weeks to flatten the curve. So we closed our school system closed in the middle of March of that year. And we had all the assignments that had been turned in up to that date. Those were taken as the quarter to quarter three grade. And then we had all the other assignments that we were giving them online. And then the

directive came from the state that nothing that they did when they were virtual, could impact the grade that they had. And we said that was broadcast to everyone, students included. And wow, who would have guessed it, they decided, oh, okay, so then we don't have to do any work. And nothing will happen. So that's how that year entered whatever they create was in March, when we closed was the great that they got. For the end of semester grade. That was awful. Then we started in the next year, and everything had to be on Canvas, everything had to we were in zoom meetings. We were expected to monitor the cameras being on the students being engaged, and get through the same amount of work. And that became a whole issue in and of itself. Because then our legal department said you cannot insist that a student has their camera on because you're you're invading their privacy. There may be things they don't need to just see at home, all of that stuff. But somehow administration still thought that it was up to us, for the kids to have their cameras on. So then you get this kind of thing. Wait, okay, I had my camera on. Because you still couldn't see my face, you couldn't judge my level of engagement. You also could see very clearly when a student had headset on and was not responding when you had a question. They were obviously playing a video game or whatever on the screen, but you can't see what's on the student screen. So very, very bad.

Participant 1

Participant 1

9:30

Communication. It was- it was awful. Because to expect as a student just sit still in front of the computer for 90 minutes and not move around was awful; to expect your teacher to set up about for 90 minutes was just as bad. So that was a really hard situation, then by the end of the first semester so The end of January of two of what are we in 20 of 2020 was when we students could come back, if they had in this county, it was not just if they wanted to come back, if they had a 504, or an IEP, they were allowed to come back. But before that there had been others like the the Fire Academy and the nursing Academy, they had been allowed to come back. So we came back. So we had some students in the room, and others on zoom at home. And they said, when there was this hybrid system, at the end, you had students who were not engaged, who didn't ask questions, who just refuse to do any work, you didn't turn in any work. By this time, I had become fluent in all of the platforms that were relevant for me. So that hybrid bit didn't work very well. So there was 20. And then 21. When we started the school year was the whole everybody was wearing masks. Oh, stop it when we did our Lachman thing when they said who, you know, what do you want to teach us if Oh, sorry, automatic class. I said, Oh, yeah, I'll teach ninth grade. By the end of the year, I said, I will teach anything except ninth grade. Because there was it was just so awful. This year, having everybody back again, I'm teaching 12th grade. But really, they hadn't been in school, since they were softballs. So they have no, their interpersonal skills are non existent. The use of language is horrendous, because they've had nobody disciplining them in terms of what they can say, and what's acceptable to say, and what's appropriate to say, for all the time that they've been at home. I know that for our population, a lot of our students were caregivers for younger siblings at home. So they, they were trying to cope with online work, they were trying to do whatever they could, but they also had to care for siblings. Often had students say, Here, I've logged on to the meeting. But I have to just go see to my brother, who I have to get you know the ninth graders this year, now that we've been back at

school, have no idea they've, they've, they've completely lost the transition from eighth to ninth grade. They have no idea what the expectations are at school. The you know, we were married wearing masks when we first came back. So although you can see students' eyes, you can't see the whole expression. And that's part of communication is being able to see the face of the person you're talking to. So it's been really, really difficult. out just our district went mask optional at the beginning of March, I believe. Maybe it'd be a little earlier than that. So I think and there are still students who wear masks. Very few though.

Participant 1

Participant 1

14:25

So this year has been slightly, slightly easier. But you're still dealing with an incredible lack of maturity. Because of those, the gap, the COVID gap. I don't know if there's anything else that I can tell you. I mean, you asked me what you need to know.

Leah Huttlinger

14:51

How do you think this experience has I mean, you spent a lot of time I'm just now talking about the students. How has how has it impacted you? Do you think?

Participant 1

Participant 1

15:10

Well I think that the year that we were, I mean, the time that we were away completely, I thought

I don't know, like I was thinking like a rudderless kind of vessel just been tossed around this way and that way, by all the regulations and all the things that were expected of us. I had been, I had retired after 19 years in this district, in 2017. But I'd like I because I retired before I had the required 25 years. Last 5% of my retirement. So I tried to make do for a year decided that that was silly, I should just come back and teach for the 60s to make up my 25 years. So I did that. But I'd been teaching theater before. And I came back to teaching English. So it was a new situation. So I taught into those from 2018 to 19. And then, in 19, when did When did COVID? Start? 2019? Right. So 19-20 was the terrible year, the really awful year than 2021 was half and half and. And bad. So now we're 21-22. I feel as if I've been teaching at this school for 15 years. And it's only been four years. Yeah. So I think I think that my situation is, or when I say my, and I can only speak for myself. So I'll continue my situation here is made worse by the fact that we have a principal who micromanagers who doesn't display any level of trust in what your teachers are doing and are capable of doing. And very little appreciation, although there's a lot of verbal appreciation. Oh, I really appreciate what you're doing. But you don't see it in what is done. We have three new assistant principals this year, we had two new assistant principals last year. And everybody is waiting for this principal, to just go.

Participant 1

Participant 1

18:31

So that has made it even worse. There's an incredible system within our department of support, and collegiality and help, and for them within our department. And within our on our floor. We're on the top of the third floor, we call ourselves the penthouse suite.

Leah Huttlinger
18:58
I like it.
Participant 1
Participant 1
18:59
It’s only English and social studies, and two classrooms of occupational course of study. So the OCS and social surfaces, social studies, and English are here in the penthouse for there's this, I see that one of the things that COVID has done and I don't know if it's just COVID or if it was if it was a directive from the district, or whether it was a decision by the principal that there's a distance between teachers and administration. Because we used to have an assistant principal whose office was on this floor, like literally three doors down. So if anything happened or you had an issue with the student, there was somebody immediately who could deal with it. There was an assistant principal and each of the three floors here on the side of the school. And then the principal was over in the main office. Now we have one assistant principal between the three floors. And then there's the principal and two assistant principals in the main office. So there is a distance physically. And that and that seems just to be made worse, I suppose. By the way, the principal deals with, with things. This year, it's been happening, it's just a whole lot worse this year than in the past.

Leah Huttlinger
20:56
Do you feel like the relationships that you all have in the penthouse suite? Feel like that offsets any of the negative stuff that you've described?
Participant 1
Participant 1
21:11
It does offset a whole lot of it. But we all live in a reality that's created by the admin, so it can't offset all of it.

Leah Huttlinger
21:27
Yep, yep. Participant 1, what else? Would you like to tell me that I haven’t asked? Or that you haven't talked about yet?
Participant 1
21:35
Well, I don't know. I mean, I don't know the full range of what you're covering. And I don't know if what I've said, has tapped into anything that anybody else has said. Or whether they've brought up something that you need to ask me about.

Leah Huttlinger
21:52
This is really driven by where you want to take it, you're in the driver's seat. So the questions are meant to be very open.

Participant 1

Participant 1
22:00
The the, for me, one of the biggest issues that's come out of COVID is the lack of accountability. One of our big problems this year has been absence, the absenteeism in class, especially because I have seen Yes, they have to have this credit for this course, in order to be able to graduate. But when I see somebody who has 40 absences, over the semester, still being able to graduate, there is that lack of accountability is going to be we're not really doing a good job in preparing these kids for any kind of future. Definitely not for anything at college, if we don't hold them accountable. We used to have a policy where if you had five absences of more than five absences, you couldn't get a credit for the course. Well, they did away with that. App. Absences don't count. We used to have if you had four absences, but you were getting an A, in a course you could be exempt from the final exam. So four absences with an A, three absences with a B two absences. With a C, if you were getting a D, there was no way for you to be exempt. But they've done away with that. And they just said if you have 70% Is your semester grade. You are exempt from taking the final exam.

Leah Huttlinger
24:01
So that could mean 70% with 20 absences,

Participant 1

Participant 1
24:06
Absolutely. So but that also came from the district there are a few absences this semester. And I don't know whether that's because I know her because I have two honors courses, or because kids are realizing that they really do need to be here in order to cover the work that they're doing. Our population is not largely not college bound. A lot of them will go to trades, which are not affected school other than nursing and nursing is not a trade and the fire academy but A. So they're they're not really college bound kids, but there are some kids who will go to college, maybe 20% of our senior class will go to college. And yet everything is aimed at those kids, the ones that are going to go to college, the others are largely just, you know, swept along. And I don't know, that, to me has just been become clear through the whole COVID thing, it's always been there. But if you if that's your population, you need to do something in order to help those kids who are not going to go to college, to do the best in wherever they're going to be. I don't know that. That, as I said that COVID made that any worse, or better. It just is.

Participant 1

Participant 1
26:12
I don't know that we're going to have a better year next year, I think that slowly we'll be able to get rid of the COVID. Lack of discipline, I think it's a lack of discipline and engagement that that has really been highlighted by the kids who who weren't at school would actively in class. Because the district was very good about giving everybody a Chromebook. And everybody if they needed one had a hotspot. And they even had buses

driving around so that they could they were put whatever, there's a cool Wi Fi spot, you know, like whatever the word is for that kind of Wi Fi hotspot?

Leah Huttlinger
27:12
Like a mobile Yeah-
Participant 1
Participant 1
27:14
Yes, a mobile hotspot kind of thing. But if your parents don't know how to help you navigate your way through a Chromebook giving you a Chromebook isn't really equitable. And if your parents can't help you at home-

Participant 1
29:44
Okay, so I mean, as I can't think of anything that I should have mentioned that I haven't. Okay. I think maybe the one thing is that with that whole virtual teaching the remote teaching time was sort of like having a clinging, a baby clinging to your skirts, yelling for your attention all the time, because if it wasn't students, it was admin and or the district or, you know, there was always something that had to be done, it sapped it said, every ounce of energy. And a lot of the love of teaching that, you know that that time it was, and I don't know that we will ever fully recover in terms of what the kids experienced and what they were able to accomplish. It's just been horrible. To we'll continue, and we'll see. Let's see how it goes. As left two years, I think I can do this for another two years. Okay.

Appendix I

Interview 2 Transcript

SUMMARY KEYWORDS

students, assignments, class, semester, day, teaching, classroom, interview, building, kids, at tend, point, question, today, lessons, expected, year, screen, included, county

SPEAKERS

Participant 2, Leah

Leah Huttlinger
0:18
Hello, thank you for participating in this interview today. My name is Leah Huttlinger and I'm a doctoral candidate at Gardner Webb University. I am researching educators perceptions of what it has been like to teach during the COVID 19 pandemic. This interview is projected to take less than an hour but could vary depending on how in depth you would like to go. Your participation is voluntary and you may stop participating at any time with no repercussions. The interview will begin with a general question about your current position. Then I will ask you to describe your experience teaching during the COVID 19 pandemic. This can be any time from your school shut down approximately March 2020 to present. When we are finished, I will have some closing instructions for you. All right, so tell me about your current position, and what a typical day at school looks like for you.

Participant 2
Participant 2
1:18
I'm currently teaching seventh grade science in eastern North Carolina in a predominantly poor and rural county. My typical day begins at 7:25 when the first bell rings, and students come to my classroom to eat their breakfast and be, for lack of a better word, warehoused until the tardy bell when tardy bell rings at 750. And we start a 45 minute enrichment program EOG enrichment remediation program when that is over, at 845- there's a 7:50 to eight o'clock is basically announcements and such. So at eight o'clock, you know I begin flex. For 45 minutes I remediate language arts. And then at 845, the bell rings. There's a three minute passing period and my first period class arrives. And depending on what we're doing that day, we'll spend a few minutes doing bell ringers. I give instruction. We have a conversation, a discussion about what's being studied. Right now, we're studying forces of motion. So we talked about Newton's laws. Yesterday we did. We finished up activities with Newton's First law, we did Newton's second and third laws, activities with balloon on a string attached to a straw, that kind of stuff. We do too, in my classes, all of them we do two literacy assignments a week. I'm pushing: Can you read? Can you understand words in context? Can you pick out main idea? Again, because if you can't read the science, you can't understand the science. I teach three classes a day. So my first block is from 8:50 to 10:05. Then I get my planning period. The kids come back at 11:20 at 12:05 I take them to lunch, you get a 25 minute lunch. After lunch we visit the restroom. And then I keep that class until 1:20. The bell rings three minute passing. My fourth period comes in and we have class until 2:47 when buses are released. So it's a full day. I'm only teaching three classes but they are long classes. And that's the end of that answer.

Leah Huttlinger

4:09

Okay, so I failed at my introduction there were a couple of other things that I should have told you. You know, obviously because you can see it on the screen that you're being audio and video recorded. But at any time during the interview, you can withdraw. You can refuse to answer any question without penalty. You can ask that any or all of your data be destroyed. There's no deception of any kind involved in the study. Because the interview is being recorded, it is possible to tell your identity you can see our names are on the screen. But the recording isn't going to be included in the final dissertation writing. And in that writing, your identity is going to be confidential only to me and you'll be assigned a pseudonym so nobody will be able to identify you in the final product. I do have to keep the recording for three years and then I can destroy it. There are minimal risks. They include minor psychological discomfort, but but there are no professional risks. So your principal's not gonna know, your superintendent won't be sent a copy of your recording or, or anything. So okay, the next question that I have for you then is if you would please describe your experience of teaching during the COVID 19 pandemic.

Participant 2

Participant 2

5:48

That is wide ranging and varied. When we were shut down, I was working in Onslow County teaching eighth grade science and one day we were there- it's actually Friday the 13th I think, and then we weren't and we had had like two little mini lessons in how to do not Google meet and not zoom. I can't remember the name of the platform, but Microsoft, it's a Microsoft platform. And I, me and the other eighth grade science teacher had to figure out how to deliver content. Immediately. We were expected to deliver lessons the very next week, not Monday or Tuesday, but I think they expected us by Wednesday to figure out how to deliver content over the internet. And we did that by doing pre-recorded lessons. We would record one in the morning and post it that afternoon along with an assignment that went along with whatever it is we were discussing. And we did that from April to the end of the school year and it was eye opening because we had to solve our own technology issues. We had to figure out how to pace ourselves. We had to figure out everything with minimal support from the county because everybody was trying to figure it out themselves. But we did it. You know, we delivered all the content. There was no state test EOG that year so we didn't have to sweat that. So that was the first year of COVID. I did not return to Onslow County that year. I went back to went to Martin County and all of the 2021 school year the entire first semester was remote. I was delivering three lessons a day over the internet, camera on and the way I did it was I put my materials behind me on the board. I projected what I was talking about, had the camera pointing at what I was talking about. And so I could point at it and talk about it. The kids had access to the same material I had. I would tell them what page we're on. This is what we're doing today. And they were welcome- I showed everybody how to do a split screen so they could put me on half the screen, put the materials on the other half of the screen and follow along if they so desired. I could not make them attend class. I could not tell them what to do. I could suggest that they follow a certain schedule because they were supposed to meet language arts, math, and if it was their semester science every day, and they were supposed to attend at least one elective every day. And electives met at certain times. My science class met at certain times. Math met at certain times and

they had to pace their day and schedule their day so they were able to attend lessons. I opened all my assignments Monday morning and they all closed at midnight on Sunday. So students- when I say close, they were due. I never closed them. But if they turned them in in after that Sunday at midnight, I had the option of taking points off for them being late. I didn't, but all the assignments were on Google Classroom.

Participant 2

9:59

And I was very very busy writing those assignments as I had nothing made. So I would read the material and write questions and try not to make them too difficult because of course I know the information; I understand the information. But the students I believe guessed a lot of times or just randomly picked answers because some of them were great. Some of them did every single thing I asked them to and you could tell they'd read the material. And they came to class and then other students were ghosts; I didn't know what they look like. They didn't attend and that was expected to keep attendance I was supposed to, you know if a kid showed up and their icon was on the screen I marked them present. Didn't matter what class they attended. I had to mark them present or ask for absent. And that went on first semester. And then second semester we had limited numbers of students in the building. Second semester I got a whole new crew of kids because I'm teaching sciences or semester subject. What made it easy was I'm teaching the same material again and all my assignments are written. So otherwise, I'd have been pulling my hair out for two semesters. And as it was my hair was only on fire for one semester. The second semester, we had kids come into the building, but not everybody came to the building. So then I was again on camera for every class period with kids in the room. So I had to monitor the kids on the screen and the kids in the room. When there were students in the building, we ate lunch in the classroom every day. We were pretty much confined. When I had students I was confined to my classroom. The only break we got was we would take a walk outside after lunch because there were so few children. We could do that. Sometimes when it got to be too much I would take my students and we would take walks within the building just to get up out of our seats. Of course everybody was fully masked, is supposed to be six feet apart, which was difficult. In my classroom, I teach in a science classroom, which means there are three walls of counters, two feet deep. So I effectively lose a whole lot of floor space. Whoever designed that room was getting a kickback on cabinets because I have lost or I lose a lot of floor space, which means my desks are closer together than anybody's and I was supposed to be maintaining a social distance, which was difficult when I didn't have the space. That was crazy. Anyway, I'm not sure where to go with my answer. I think that's all I have to say about that.

Leah Huttlinger

13:10

That's okay. Yeah. Um and with middle school students, their their bodies can be large. So, that kind of space, be expected to maintain social distancing and have to do it with the full class of you know, large bodied children is is really tough.

Participant 2

13:36
Yeah, we have some tall people then we have some big people. And it was easier last year, the 2021 school year. When we came back to the 21-22 school year, we were still supposed to maintain social distancing. But there were no virtual classes everything was in person. And social distancing became a lot more difficult because again, I have the smallest room on the hall.

Leah Huttlinger
14:08
Yeah. So thinking about the overall experience of being a teacher during this time, having to rapidly adjust plans troubleshoot, problem solve, figure things out. Is there anything else that you want to mention or tell me about related to your experience?

Participant 2
14:39
I definitely prefer Google Classroom over the Microsoft program. I think it was It wasn't zoom. It was something else. Um, it's a lot easier to manage. Classes are easier to put in. I didn't mind the Google Classroom. Because honestly, it allows you once you type that question in it grades it for you, except for the short answer questions, which is a bonus. I mean, I've graded it all at this point in my career, I don't know how many pieces of paper so that was that was sweet, not having to grade every single thing that the kids touched and wrote. But um, it also left, that experience left a whole lot of personal interaction lacking when I had students in the building second semester last year. It was nice to interact with them. They were more subdued because there were fewer of them. There wasn't as much drama and I had a way better time with some kids in the building. It was more difficult you know, I had to work harder because there were kids in the building and I was still broadcasting to kids at home. But um both experiences were interesting. If I ever had to do remote learning again, it would be okay. I don't know if I'd do it exactly the same way. But having done it, it's repeatable. I wouldn't be quite so freaked out at having to just pivot and do something entirely different. Because that first we were at school on Friday with kids and then the following Monday, it was figuring out how you're going to deliver this content and do it quick, fast, and in a hurry. And by the way, be good at it doing it. Well. There was that pressure to not only do it but to do it well. And some of it was internal. No, I was pressuring myself to do it well, but quite a bit of it was external. You know, you're a professional, be professional. Do it. Well. Well, okay, yeah, just give me a minute here. Need to get up to speed.

Leah Huttlinger
17:11
Where do you think that external pressure came from? Like, what level would you

Participant 2
17:16
definitely county level Okay. Although the administrator in the building was...

Participant 2

17:29
I was not his favorite teacher. His remark to me was if you can't control the students and I don't need you in the classroom, and you know, when a kid throws a pencil at my head, which happened, you know, apparently it was my fault because I wasn't watching the kid. You know. I guess he expected me to keep my to face the students at all times, which meant I had to slink around the walls with my back to the wall. But um, when I pointed out that I couldn't, couldn't control the students, it had to come from them and their parents. He said I guess you're not calling the parents. Well, my call log was immense. I was calling parents, they just weren't correcting their students.

Participant 2

18:25
So that was tough, too. It was almost a relief to go virtual. In that situation. I can't tell you some- well, I can tell you some of the things that were done to me and in my room, but it would just be frustrating to me because it would it would dredge up painful memories, so I don't want to do it.

Leah Huttlinger
18:47
Sure. Well, so. This experience that principal experience was that when you were at this, the school where it changed at the semester mark, so when you went

Participant 2

19:02
that was the 19-20 school year when we went out in April 1

Leah Huttlinger
19:07
Shut Down got it got it got it. Okay. Okay. See here? Yep, yep. Is there anything that you want to mention that I have not asked about?

Participant 2

19:26
Um One thing about being- No, not being, one thing about teaching their students in the building. It was a lot more laid back. You know, I didn't have to be in my doorway when the bell rang. If I needed to walk off camera for a minute, I walked off camera for a minute. I wasn't on every single minute. You know, because in my classroom, even not speaking. I have to be attending. I have to be knowing what the kids are doing. There was no way I could correct somebody at home. I could mute their microphone. I could dim their camera. But yeah, sit up, wake up. Stop doing stuff. No, no, you can't pop bubbles. No, you can't go to the bathroom. No, you can't get a drink of water. I mean, just the minutia of teaching was not present. Cut down on my stress level a lot in one way, and then bumped it up in another.

Leah Huttlinger
20:35

Yeah. Yeah, that's an interesting point about the minutiae of teaching. For sure.

Participant 2

20:42

You just like the vocabulary

Leah Huttlinger

20:44

That is a great vocabulary word

Leah Huttlinger

20:52

Okay, um, so I don't want to take any more of your time if there's not anything else that you'd like to share today. Remind you that I will keep this recording for three years. However, your identity is going to be anonymous in the in the final writing of the paper. Nobody else is going to be aware of your identity, your location. The closest that I'm going to get to that is by noting that you are employed in the eastern region of the state. That's it. However, again, as a reminder, you're welcome to reflect on this and email me or call me at any point and resend this interview from being used. You can absolutely say, I've changed my mind. I don't want you to use use me or this information in your study on that, that note, I'm going to transcribe our interview today. And then I'm going to send you a copy of it so that you can review it before I actually do anything with it. So that if there's anything that you look at and you decide you want to say differently or if there's something that you want to make sure is included, where if there's one small piece you'd like to take out, anything like that you'll have the opportunity to do that before I right, okay. Okay.

Participant 2

22:23

I don't think that will be necessary because I've not done anything that I won't say to anybody else. If they if they you know administrator my county were to ask, I would say the same thing. You know, so I don't think that'll happen.

Leah Huttlinger

22:39

Okay. Um, 10 Four. I really, really, really appreciate your time. I know. This is a pain and not super pleasant experience, but I really appreciate it it's hugely valuable for me. So thank you. You're welcome. All right. I'm gonna hang up

Appendix J

Complete Participant Survey

NC PUBLIC SCHOOL EDUCATOR PERCEPTIONS OF TEACHING DURING COVID-19 AND IMPACTS ON BURNOUT

Start of Block: Section 1

Q1 Are you a public school educator in N.C. who works with students, in any capacity, from kindergarten through 12th grade? (If "No," please exit the survey. Thank you for your time.)

- Yes (1)
- No (2)

Q2 In what N.C. county do you work?

- ○ Alamance County (1)
- ○ Alexander County (2)
- ○ Alleghany County (3)
- ○ Anson County (4)
- ○ Ashe County (5)
- ○ Avery County (6)
- ○ Beaufort County (7)
- ○ Bertie County (8)
- ○ Bladen County (9)
- ○ Brunswick County (10)
- ○ Buncombe County (11)
- ○ Burke County (12)
- ○ Cabarrus County (13)
- ○ Caldwell County (14)
- ○ Camden County (15)
- ○ Carteret County (16)
- ○ Caswell County (17)
- ○ Catawba County (18)
- ○ Chatham County (19)
- ○ Cherokee County (20)

- Chowan County (21)
- Clay County (22)
- Cleveland County (23)
- Columbus County (24)
- Craven County (25)
- Cumberland County (26)
- Currituck County (27)
- Dare County (28)
- Davidson County (29)
- Davie County (30)
- Duplin County (31)
- Durham County (32)
- Edgecombe County (33)
- Forsyth County (34)
- Franklin County (35)
- Gaston County (36)
- Gates County (37)
- Graham County (38)
- Granville County (39)
- Greene County (40)
- Guilford County (41)

- Halifax County (42)
- Harnett County (43)
- Haywood County (44)
- Henderson County (45)
- Hertford County (46)
- Hoke County (47)
- Hyde County (48)
- Iredell County (49)
- Jackson County (50)
- Johnston County (51)
- Jones County (52)
- Lee County (53)
- Lenoir County (54)
- Lincoln County (55)
- Macon County (56)
- Madison County (57)
- Martin County (58)
- McDowell County (59)
- Mecklenburg County (60)
- Mitchell County (61)
- Montgomery County (62)

- Moore County (63)
- Nash County (64)
- New Hanover County (65)
- Northampton County (66)
- Onslow County (67)
- Orange County (68)
- Pamlico County (69)
- Pasquotank County (70)
- Pender County (71)
- Perquimans County (72)
- Person County (73)
- Pitt County (74)
- Polk County (75)
- Randolph County (76)
- Richmond County (77)
- Robeson County (78)
- Rockingham County (79)
- Rowan County (80)
- Rutherford County (81)
- Sampson County (82)
- Scotland County (83)

- ○ Stanly County (84)
- ○ Stokes County (85)
- ○ Surry County (86)
- ○ Swain County (87)
- ○ Transylvania County (88)
- ○ Tyrrell County (89)
- ○ Union County (90)
- ○ Vance County (91)
- ○ Wake County (92)
- ○ Warren County (93)
- ○ Washington County (94)
- ○ Watauga County (95)
- ○ Wayne County (96)
- ○ Wilkes County (97)
- ○ Wilson County (98)
- ○ Yadkin County (99)
- ○ Yancey County (100)

Page Break

Q3 The following questions ask about various kinds of worries that you might have experiences related to COVID-19. Please indicate the average level of worry you have had since the start of the pandemic (approximately March 2020).

	Not at all (0) (1)	A little (1) (2)	Some (2) (3)	Significant (3) (4)	Extreme (4) (5)
I am worried about catching the virus. (1)	○	○	○	○	○
I am worried that I can't keep my family safe from the virus. (2)	○	○	○	○	○
I am worried that our healthcare system won't be able to protect my loved ones. (3)	○	○	○	○	○
I am worried that our healthcare system is unable to keep me safe from the virus. (4)	○	○	○	○	○
I am worried that basic hygiene (e.g., handwashing) is not enough to keep me safe from the virus. (5)	○	○	○	○	○

I am worried that social distancing is not enough to keep me safe from the virus. (6)	○	○	○	○	○

Q4 The following questions ask about various kinds of worries that you might have experiences related to COVID-19. Please indicate the average level of worry you have had since the start of the pandemic (approximately March 2020).

	Not at all (0) (1)	A little (1) (2)	Some (2) (3)	Significant (3) (4)	Extreme (4) (5)
I am worried about grocery stores running out of food. (1)	○	○	○	○	○
I am worried that grocery stores will close down. (2)	○	○	○	○	○
I am worried about grocery stores running out of cleaning or disinfectant supplies. (3)	○	○	○	○	○
I am worried about grocery stores running out of cold or flu remedies. (4)	○	○	○	○	○
I am worried about grocery stores running out of water. (5)	○	○	○	○	○

I am worried about pharmicies running out of prescription medicines. (6)	○	○	○	○	○

Q5 The following questions ask about various kinds of worries that you might have experiences related to COVID-19. Consider your feelings from March 2020 to present.

	Not at all (0) (1)	A little (1) (2)	Some (2) (3)	Significant (3) (4)	Extreme (4) (5)
I am worried that if I touched something in a public space (e.g., handrail, door handle), I would catch the virus. (1)	○	○	○	○	○
I am worried that if someone coughed or sneezed near me, I would catch the virus. (2)	○	○	○	○	○
I am worried that people around me will infect me with the virus. (3)	○	○	○	○	○
I am worried about taking change in cash interactions. (4)	○	○	○	○	○
I am worried that I might catch the virus from handling money or using a debit machine. (5)	○	○	○	○	○

I worry that my mail has been contaminated by mail handlers. (6)	○	○	○	○	○

Page Break

Q6 The following questions ask about various kinds of worries that you might have experiences related to COVID-19. Consider your feelings from March 2020 to present.

	Not at all (0) (1)	A little (1) (2)	Some (2) (3)	Significant (3) (4)	Extreme (4) (5)
I have trouble concentrating because I keep thinking about the virus. (1)	○	○	○	○	○
Distubring mental images about the virus popped into my mind against my will. (2)	○	○	○	○	○
I have trouble sleeping because I worry about the virus. (3)	○	○	○	○	○
I thought about the virus when I didn't mean to. (4)	○	○	○	○	○
Reminders of the virus caused me to have physical reactions, such as sweating or a pounding heart. (5)	○	○	○	○	○
I have bad dreams about the virus. (6)	○	○	○	○	○

Q19 The following questions ask about various kinds of worries that you might have experiences related to COVID-19. Consider your feelings from March 2020 to present.

	Not at all (0) (1)	A little (1) (2)	Some (2) (3)	Significant (3) (4)	Extreme (4) (5)
I am worried that foreigners are spreading the virus in my country. (1)	○	○	○	○	○
If I went to a restaurant that specialized in foreign foods, I'd be worried about catching the virus. (2)	○	○	○	○	○
I am worried about coming into contact with foreigners because they might have the virus. (3)	○	○	○	○	○
If I met a person from a foreign country, I'd be worried they might have the virus. (4)	○	○	○	○	○

If I was in an elevator with a group of foreigners, I'd be worried that they're infected with the virus. (5)	○	○	○	○	○
I am worried that foreigners are spreading the virus because they're not as clean as we are. (6)	○	○	○	○	○

Page Break

Q7 The following items assess frequency of physical symptoms. During the course of the pandemic (from March 2020 to present), how much have you been bothered by any of the following problems?

	Not bothered at all (0) (1)	Bothered a little (1) (2)	Bothered a lot (2) (3)
Stomach pain (1)	○	○	○
Back pain (2)	○	○	○
Pain in your arms, legs, or joints (knees, hips, etc.) (3)	○	○	○
Menstrual cramps or other problems with periods (if applicable to you. If not applicable, please leave blank.) (4)	○	○	○
Headaches (5)	○	○	○
Chest pain (6)	○	○	○
Dizziness (7)	○	○	○
Fainting spells (8)	○	○	○
Feeling your heart pound or race (9)	○	○	○
Shortness of breath (10)	○	○	○
Pain or problems during sexual intercourse (11)	○	○	○
Constipation, loose bowels, or diarrhea (12)	○	○	○
Nausea, gas, or indigestion (13)	○	○	○

Feeling tired or having low energy (14)	○	○	○
Trouble sleeping (15)	○	○	○

Page Break

Q8 The following items assess frequency of mental symptoms. During the course of the pandemic (from March 2020 to present), how often have you been bothered by any of the following symptoms?

	Not at all (0) (1)	Several days (1) (2)	More than half the days (2) (3)	Nearly every day (4) (4)
Little interest or pleasure in doing things (1)	○	○	○	○
Feeling down, depressed, or hopeless (2)	○	○	○	○
Trouble falling or staying asleep, or sleeping too much (3)	○	○	○	○
Feeling tired or having little energy (4)	○	○	○	○
Poor appetite or overeating (5)	○	○	○	○
Trouble concentrating on things, such as reading the newspaper or watching television (6)	○	○	○	○
Moving or speaking so slowly that other people have noticed? Or the opposite- being so fidgety or restless that you have been moving around a lot more than usual (7)	○	○	○	○

Thoughts that you would be better off dead or of hurting yourself in some way (8)	○	○	○	○

Page Break

Q9 During the course of the pandemic (from March 2020 to present): (If these don't apply to you, select "No" to the first item and move on.

	No (0) (1)	Yes (1) (2)
Have you had an anxiety attack- suddenly feeling fear or panic? (1)	○	○
Has this happened prior to the pandemic? (2)	○	○
Do some of these attacks come suddenly out of the blue- that is, in situations where you don't expect to be nervous or uncomfortable? (3)	○	○
Do these attacks bother you a lot or are you worried about having another attack? (4)	○	○

Q10 Think about your last bad anxiety attack during the pandemic. If this doesn't apply, move on to the next question.

	No (0) (1)	Yes (1) (2)
Were you short of breath? (1)	○	○
Did your heart race, pound, or skip? (2)	○	○
Did you have chest pain or pressure? (3)	○	○
Did you sweat? (4)	○	○
Did you feel as if you were choking? (5)	○	○
Did you have hot flashes or chills? (6)	○	○
Did you have nausea or an upset stomach, or the feeling that you were going to have diarrhea? (7)	○	○
Did you feel dizzy, unsteady, or faint? (8)	○	○
Did you have tingling or numbness in parts of your body? (9)	○	○
Did you tremble or shake? (10)	○	○
Were you afraid you were dying? (11)	○	○

Q11 During the course of the pandemic (March 2020 to present), how often have you been bothered by any of the following problems:

	Not at all (0) (1)	(1) Several days (2)	More than half the days (2) (3)
Feeling nervous, anxious, on edge, or worrying a lot about different things (1)	○	○	○
Feeling restless so that it is hard to sit still (2)	○	○	○
Getting tired very easily (3)	○	○	○
Muscle tension, aches, or soreness (4)	○	○	○
Trouble falling asleep or staying asleep (5)	○	○	○
Trouble concentrating on things, such as reading a book or watching TV (6)	○	○	○
Becoming easily annoyed or irritable (7)	○	○	○

Page Break

Q12 During the course of the pandemic (March 2020 to present):

	No (0) (1)	Yes (1) (2)
Do you often feel that you can't control what or how much you eat? (1)	○	○
Do you often eat, within any 2-hour period, what most people would regard as an unusually large amount of food? (2)	○	○
Has this been as often, on average, as twice a week for the course of the pandemic? (3)	○	○

Q13 During the course of the pandemic (March 2020 to present), have you often done any of the following in order to avoid gaining weight?

	No (0) (1)	Yes (1) (2)
Made yourself vomit? (1)	○	○
Took more than twice the recommended dose of laxatives? (2)	○	○
Fasted- not eaten anything at all for at least 24 hours! (3)	○	○
Exercised for more than an hour specifically to avoid gaining weight after binge eating? (4)	○	○
Were any of these behaviors as often, on average, as twice a week? (5)	○	○

Q14 During the course of the pandemic (March 2020 to present):

	No (0) (1)	Yes (1) (2)
Do you ever drink alcohol (including beer or wine)? (1)	○	○
Have you drank alcohol even though a doctor suggested taht you stop drinking because of a problem with your health? (2)	○	○
Have you drank alcohol, been high from alcohol, or been hung over while you were working, going to school, or taking care of children or other responsibilities? (3)	○	○
Have you missed or been late for work, school, or other activities becasue you were drinking or hung over? (4)	○	○
Have you had a problem getting along with other epople while you were drinking? (5)	○	○
Have you driven a car after having several drinks or after drinking too much? (6)	○	○

Page Break

Q15 If you checked off any problems on the survey so far:

	Not difficult at all (0) (1)	Somewhat difficult (1) (2)	Very difficult (2) (3)	Extremely difficult (3) (4)
how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people during the course of the pandemic? (1)	○	○	○	○

Page Break

Q16 The purpose of this section is to discover how educators view their job and the people with whom they work closely. The following items are statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, select the number "0" (zero). If you have had this feeling, indicate how often you feel it by selecting the number (from 1 to 6) that best describes how frequently you feel that way. Consider your feelings on the job from March 2020 to present.

[Removed due to licensing restrictions]

Q17 Do you intend to return to teaching next year (2022-2023)?

- ○ Yes, in my current role (1)
- ○ Yes, in a different role in my school or district (2)
- ○ Yes, in another state (3)
- ○ Not at all (4)

Q17 Are you interested in scheduling a follow-up interview with the researcher to discuss your personal experiences of teaching during COVID? If so, please open this link in a new tab or browser window and end the survey.

_____

End of Block: Section 1