August 2022

An Investigation of Personal and Professional Secondary Traumatic Stress Predictors in Urban School Personnel

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AN INVESTIGATION OF PERSONAL AND PROFESSIONAL SECONDARY TRAUMATIC

STRESS PREDICTORS IN URBAN SCHOOL PERSONNEL

by

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A Dissertation Submitted in

Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

in Educational Psychology

at

The University of Wisconsin-Milwaukee

August 2022

ABSTRACT

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The University of Wisconsin- Milwaukee, 2022
Under the Supervision of Professor Karen C. Stoiber

Due to the high rates of exposure to potentially traumatic events in childhood, educators may experience high levels of indirect trauma exposure that can lead to adverse consequences, such as Secondary Traumatic Stress (STS). STS is a potential "constellation of symptoms that may run parallel to those of posttraumatic stress disorder (PTSD) including symptoms of intrusion, avoidance, arousal, and emotional numbing" (Molnar et al., 2017, p. 130). However, STS remains understudied in the school personnel population. This quantitative survey study explored to what extent a set of professional (i.e., supervisor support, colleague support, trauma-informed practices professional development, professional role) and personal factors (self-care, personal trauma history, perceived dosage of student trauma, and subjective impact of the COVID-19 pandemic) predicted STS scores for a sample of 225 urban school personnel. Analyses included conducting descriptives and a series of hierarchical and moderation multiple regression analyses. Results reveal 41.2% of the participants met criteria for STS on the Secondary Traumatic Stress Scale (Bride et al., 2007). The results suggest the set of personal factors are significantly associated with STS scores. Professional factors, however, were found to be less strongly related, with the possible exception of supervisor support. Finally, the results suggest supervisor support may moderate or positively impact the relationship between some risk

factors (e.g., perceived dosage of student trauma) and STS scores. Implications, limitations, and future directions are discussed.

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Chapter One: Introduction

School staff and students spend a significant number of their waking hours together. They bear witness to each other's behavior and emotions daily; consequently, students and teachers often see each other at both their best and worst. The Bioecological Theory suggests that during this time spent together, children and school personnel exert a dynamic and reciprocal influence that can have lasting impacts (Bronfenbrenner & Morris, 2006). When time spent together provides opportunities for healthy experiences and development, these interactions result ideally in positive outcomes for all involved, including the promotion of intellectual, social, and emotional growth. However, when students experience impaired functioning because of traumatic or stressful life events, the resulting challenges may affect school staff negatively through an indirect mechanism known as Secondary Traumatic Stress (STS).

The Potential Impact of STS

Since the formal introduction of the concept of Secondary Traumatic Stress and Compassion Fatigue by C. R. Figley (1995), researchers have shown a sustained interest in understanding the connection between indirect exposure to traumatic experiences and the negative impact it can have on helping professionals. Secondary Traumatic Stress represents a potential "constellation of symptoms that may run parallel to those of posttraumatic stress disorder, including symptoms of intrusion, avoidance, arousal, and emotional numbing" (Molnar et al., 2017, p. 130). Sprang and colleagues (2019) convened a series of expert focus groups with the goal of providing greater clarity for the mental health field on the construct of STS, as well as identifying current best practices in the field for assessment and intervention. General agreement among the experts was that "STS can be understood as involving a parallel process in reaction to empathically experiencing the psychobiological impact on clients of both their traumatic event(s)

and their subsequent symptoms of PTSD" (Sprang et al., 2019, p. 76). Although indirect exposure to trauma may not have negative consequences for all professionals, it may cause distress and functional impairment for some (Cieslak et al., 2013). Many individuals in the helping profession are aware of coping skills, knowledge, and helpful supports in the aftermath of traumatic experiences. However, these helping professionals may be less aware of or have trouble recognizing the need to apply the same skills to their own lives in the face of indirect exposure and symptoms (Sprang et al., 2019). Butler and colleagues (2019) identify the utility of "preventing and combating occupational hazards of the helping professions" through strategies, such as knowing personal limits, seeking professional help, developing effective regulation strategies, and tapping into personal and professional supports (p. 112). When left unaddressed, STS may create more challenging circumstances for school personnel to perform job duties related to helping others.

Researchers have studied STS primarily in first responders (i.e., fire services, law enforcement, emergency medical services) and other helping professionals (i.e., social workers, mental health workers) (Molnar et al., 2017). Evidence to date suggests that exposure to indirect trauma can lead to impairment. For example, a systematic review and meta-analysis performed by Berger and colleagues (2012) found a worldwide rate of 10% for first responders who met probable criteria for full PTSD (i.e., the study did not differentiate between primary and secondary traumatic stress). Thormar and colleagues (2010) found higher rates of 24 – 46% in their review for volunteer rescue workers. In a meta-analysis that examined prevalence and risk factors in professionals who perform therapeutic work with trauma victims, Hensel and colleagues (2015) cited studies with prevalence rates that ranged from mild STS symptoms with little clinical implications, to 15.2% (licensed social worker sample) to 34% (child protective

service worker sample) who met all three core criteria (i.e., intrusion, avoidance, arousal). STS prevalence rates reported in studies tend to differ by factors, such as the type of professional in the study and the measurement instruments used to detect the impact of indirect exposure to traumatic experiences. As posed by Sprang and colleagues (2019), there is a need for greater clarity about "when, for whom, and under what circumstances… empathic overinvolvement is likely to be experienced by, and functionally/ relationally debilitating for, service providers" (p. 77). For example, researchers suggest that STS may lead professionals to attempt avoiding "thoughts, feelings, people, and/or situations… but when these efforts are unsuccessful, negative cognitions and mood symptoms may follow" (Lawson et al., 2019, p. 428). A greater understanding of the factors that may lead to functional impairment can contribute to the development of more effective preventative and intervention strategies for those in various helping professions.

As a relatively new area of study, wide knowledge gaps remain regarding the influence of indirect trauma exposure and its various impacts on helping professionals, such as STS, vicarious trauma, burnout, and compassion fatigue. The scope of the current investigation will be STS, but it will also delineate the related terms because of the conceptual overlap and resulting confusion with these topics. Authors of multiple review articles have provided a suggested research agenda to address current gaps in the literature. Some identified research priorities include providing greater conceptual clarity between STS and related constructs, gaining a better understanding of the prevalence and impact of STS on various populations of professionals, identifying consistent risk and protective factors, and conducting more systematic investigations into effective interventions (Branson, et al., 2018; Molnar et al., 2017; Sprang et al., 2019). The current study

will aim to address multiple areas of need in the understudied population of school personnel, such as understanding STS prevalence and identifying relevant risk and protective factors.

Addressing the STS Knowledge Gap in Schools

Traumatic experiences in the lives of children and adolescents remain an important area of study because of the high exposure rates and the potential biological, cognitive, social, and emotional impact these types of experiences can have on youth along their journey to adulthood (Felitti et al., 1998). Since the publication of the original Adverse Childhood Experiences (ACEs) study (Felitti et al., 1998), researchers have explored the connection between potentially traumatic events that occur in childhood and various negative adult outcomes. For example, as the culmination of a 10-year longitudinal study, Copeland and colleagues (2007) concluded that approximately 68% of their representative sample experienced a potentially traumatic event by the age of 16. Bethell and associates (2014) found through a national survey that 48% of children living in the United States ages 0-17 had experienced at least one of the nine ACEs examined in their study. Although exposure rates are high, full posttraumatic stress disorder (PTSD) prevalence rates for children and adolescents are less well established (Perry, 2017). Copeland and colleagues (2007) found that only 0.5% of their representative sample of youth under the age of 17 met full DSM-IV PTSD criteria, but 13.4% of their sample developed some sort of posttraumatic stress symptoms (i.e., not meeting all DSM criteria, endorsing subclinical PTSD, or reporting painful recall symptoms). As discussed in more detail later, ACE research suggests that these early adverse experiences can lead to later challenges in physical health (Felitti et al., 1998; Logan-Green et al., 2014; Wade, et al., 2016), mental health (Hughes et al., 2016; Logan-Green et al., 2014), and school outcomes (Bethell et al., 2014; Romano et al., 2015), regardless of whether someone meets criteria for PTSD. Together, this evidence suggests that the adverse or

traumatic experiences children endure may have short- and long-term consequences both inside and outside of the school setting.

Childhood stress and traumatic experiences may be more important to understand for children living in poverty. Researchers have found associations between growing up in poverty and additional environmental and physiological stressors (Evans & Kim, 2013). These stressors can contribute to long-term impacts on the mental, emotional, and behavioral health of youth (Wilkinson, 2016; Yoshikawa et al., 2012). When working with students living in poverty, it is imperative that school staff members disrupt deficit mindsets and maintain high expectations while also being cognizant of and addressing potentially higher levels of environmental stressors for students (Ullicci & Howard, 2015).

School staff hold unique roles in the lives of children, and they represent an important source of detection, support, and healing in the wake of adverse experiences (Martin et al., 2010; Weegar & Romano, 2019). Given the large portions of the day spent with children and the instructive and guiding function they perform, school staff are an integral part of the child's ecology that interacts with children and their families. As a result, they can have a sizable positive or negative difference in the lives of children. Due to the high prevalence rates of childhood adversity, school staff arguably have a high likelihood in the course of their work of encountering the behavioral and emotional aftermath of their students' adverse or traumatic experiences. Despite the potential for high rates of indirect exposure, a dearth of research currently exists for prevalence rates and predictors of STS for school personnel.

To date, this researcher could only find a limited number of empirical quantitative (i.e., Borntrager et al., 2012; Christian-Brandt et al., 2020; Fleckman et al., 2022; Hatcher et al., 2011; Koenig et al., 2018) and qualitative (i.e., Alisic et al., 2012a; Alisic et al., 2012b; Blitz et al.,

2016; Caringi et al., 2015) studies of STS or related constructs (e.g., compassion fatigue, supporting students after a trauma) in schools. Although limited, the existing research suggests an association between STS in school personnel and factors such as intent to leave, emotional exhaustion, and compassion satisfaction (Borntrager et al., 2012; Christian-Brandt et al., 2020; Koenig et al., 2018). In the first study that systematically examined STS in school personnel, Borntrager and colleagues (2012) found that in their sample of 229 school personnel approximately 75% of respondents surpassed cut-off scores on all three subscales (i.e., Intrusion, Avoidance, Arousal) of the Secondary Traumatic Stress Scale (STSS). This sample included teachers, paraprofessionals, school social workers, counselors, and administrators in six schools in a mixture of urban, rural, and Indigenous American reservation communities. Although this measure is not diagnostic, these results suggest that many of the staff surveyed were experiencing symptoms consistent with STS. In a sample of juvenile justice teachers and staff ($N = 118$), 81% of respondents met at least one, 55% met at least two, and 39% met all three core criteria on the STSS (Hatcher et al., 2011). In a Canadian sample of educators ($N = 44$), approximately 43% of the sample reported moderate-to-severe symptoms of STS (Koenig et al., 2018). The participants in these studies were predominately female and white (Borntrager et al., 2012; Hatcher et al., 2011); however, it should be noted the researchers provided limited school demographic information. Finally, in two recent samples of educators in New Orleans Public Charter Schools ($n = 130$, 2015-2016 school year; $n = 145$, 2016-2017 school year), the authors measured STS using the Professional Quality of Life Scale (ProQOL) (Fleckman et al., 2022). STS rates were lower in this sample and with this measure than in the previously mentioned studies, with 14.1% and 15.9% of the sample meeting STS criteria respectively on the ProQOL (Fleckman et al., 2022). However, qualitative results from this study suggest that symptoms of

intrusion, alterations in mood and cognition, and alterations in arousal and reactivity were salient STS related experiences for participants in this study.

The results of the limited number of studies conducted to date suggest that educators may be an important group of professionals affected by STS. Given the concerns discussed above with STS in other helping professions, getting a more accurate picture of STS prevalence among teachers and school staff (henceforth referred to as educators or school personnel) and potential factors that contribute to or help to protect against its development remains an essential area for the wider STS research agenda.

Study Purpose and Significance

The current study addresses the noted gap in the literature of Secondary Traumatic Stress in school personnel. This study responds to the call from experts in the field for greater clarity in prevalence rates of STS, as well as progress towards a greater understanding of salient risk and protective factors (Branson et al., 2018; Molnar et al., 2017; Sprang et al., 2019). The focus on school staff is an important contribution because of the scarcity of empirical research on STS in this population. Through a quantitative investigation, this study attempts to replicate, clarify, and extend the current understanding of STS prevalence rates among school personnel. This study also explores potential professional and personal factors that may help to predict an individual's level of STS.

The results contribute to the field in multiple ways. First, they provide greater clarity about STS in the understudied population of educators. The prevalence rates found in the current study sample mirrored those found in some prior studies (i.e., Hatcher et al., 2011; Koenig et al. 2018) but not others (Borntrager et al., 2012; Fleckman et al., 2022). This information on prevalence adds to the research base and further addresses whether and for whom there exists a

need for STS prevention and intervention with school personnel. Second, the results aim to help clarify salient predictors of STS. While some predictors under the current examination are more stable or unalterable (i.e., trauma history, professional role), other factors may be within the capacity of a school to address (i.e., supervisor and colleague support, professional development, self-care practices). Finally, the results capture a snapshot of STS during an unprecedented global pandemic, which provides additional information about the impact of COVID-19 for educators on a wider scale.

The potential impact of the COVID-19 global pandemic makes Secondary Traumatic Stress potentially more relevant at this time. Many educators had to adjust their practices and mode of interacting with students (e.g., virtual or hybrid learning methods) at a remarkably quick rate under less-than-optimal conditions. Virtual schooling also afforded many educators different levels of access and perspectives on the home lives of their students (Sokal et al., 2020). There are many potential benefits to these changes in the education system (e.g., increased family involvement, a greater understanding of the students' home lives and conditions, and greater flexibility and creativity in content delivery). Nonetheless, this new format may also introduce new stressors (e.g., greater understanding of their students' trauma or adverse experiences, greater demands on teacher time, unanticipated format of educating students) (Baker et al., 2021; Joia & Lorenzo, 2021; Lizana et al., 2021; Ozamiz-Etxebarria et al., 2021). Overall, research into the short- and long-term impacts of COVID-19 is in its infancy. The stress and pressure resulting from the COVID-19 global pandemic may have lasting effects far beyond what professionals can predict at this point in time. The current study explores subjective COVID-19 impact as a predictor of STS. Although the COVID-19 impact is not the primary focus of this current research, at the time of data collection (early January 2022) the COVID-19 pandemic was

impacting schools (e.g., staff and student illnesses, decisions about in-person vs. virtual schooling when returning from winter break). Therefore, it is essential to explore subjective COVID-19 impact as a new potential factor influencing the mental health and coping skills of school personnel.

Research Questions and Hypotheses

The current study addresses the following four research questions:

1. What is the prevalence of STS for education professionals working in a large urban public school district?

Based on the limited available prevalence rates for school personnel (i.e., 75% -Borntrager et al., 2012; 14.1% and 15.9% Fleckman et al., 2022; 39% Hatcher et al., 2011; 43% Koenig et al., 2018), this researcher expected approximately 40% of the staff surveyed to meet or surpass criteria on the three subscales on the Secondary Traumatic Stress Scale. Due to lack of empirical evidence in the literature, this researcher did not have a prediction whether classroom-based (i.e., general or special education teachers, paraprofessionals) or support staff (i.e., school psychologists, counselors, or social workers) would exhibit higher rates of STS.

2. To what extent do professional factors (i.e., supervisory support, peer/colleague support, professional development, role) predict the rate of STS?

3. To what extent do personal factors (i.e., self-care, personal trauma history, perceived dosage of student trauma, subjective impact of the COVID-19 pandemic) predict the rate of STS?

4. Do protective factors (i.e., significant professional factors and self-care) moderate the relationship between significant personal risk factors and STS?

As previously mentioned, the dearth of research in this area for school personnel made predictions difficult. However, previous qualitative work in schools and quantitative work in related helping professions suggest that the chosen professional and personal factors are likely to have a small to moderate associations with STS (i.e., Caringi et al., 2017; Klusmann et al., 2008; Richards et al., 2018). The current study contributes to the literature by examining this unique constellation of predictors, as well as comparing predictors in personal and professional clusters. The professional factors in this study conceptually represent potentially protective influences against STS. The final research question examined whether the set of significant professional protective factors moderated, or changed, the relationship between the significant personal factors and the level of STS. The results from this analysis can provide insight into whether districts and school leaders can facilitate experiences that may be protective against the development of STS. The personal factor, self-care, may also be protective against the development of STS. This researcher hypothesized that the professional factors found to be significant and the factor of self-care would moderate the relationship between the set of personal predictors (i.e., risk factors) and STS.

Chapter Two: Literature Review

Adversity and Its Impact

Adversity can take many forms and impact people differently based on a variety of factors (Carlson & Dalenberg, 2000), which makes it a complex construct to study. This literature review will thus provide descriptions of the constructs of trauma, adverse childhood experiences, and secondary traumatic stress; present the theoretical foundations guiding the current empirical investigation; and discuss the current state of STS research in the school personnel population, as well as propose factors and review relevant research to support the

potential salience of these factors for educators. Due to the minimal literature base for STS in school personnel, this researcher drew upon information from related fields to inform context and decisions for the current study.

Potentially Traumatic Experiences

Traumatic events from either adulthood or childhood can have negative impacts on a person's functioning and well-being. Traumatic or stressful experiences can affect an individual in areas such as mental health (Morris et al., 2012; Panagioti et al., 2012; Roberts et al., 2015), physical health (Felitti et al., 1998; Pacella et al., 2013), and interpersonal relationships (Morris et al., 2012; Taft et al., 2011). One commonly used conceptualization of trauma is the qualifying stressor events for PTSD reported in the Diagnostic and Statistical Manual of Mental Disorders (5th Ed.; *DSM-5*; American Psychiatric Association, 2013). The DSM-5 defines trauma in Criteria A as "exposure to actual or threatened death, serious injury, or sexual violence," either directly or indirectly experienced (American Psychiatric Association, 2013). Although attempting to understand the impact of adverse experiences is not new, the establishment of PTSD in the DSM III in 1980 served as a turning point in more formalized scholarship for trauma's influence (Newell et al., 2016). The DSM definition of trauma is limited in scope and leaves room for interpretation, but it is viewed as a good starting point for understanding traumatic experiences.

Although traumatic experiences are pervasive in society, not every individual who lives through a traumatic event experiences negative or enduring consequences (Bonanno & Mancini, 2011). Carlson and Dalenberg (2000) propose a framework for understanding what factors lead to experiencing a stressful event as traumatizing. The authors propose individuals need to consider the qualifying events as negative, uncontrollable, and sudden. They also offer the

following factors as especially influential to an individual's response: biological factors, developmental level at the time of trauma, severity of the stressor, social context, and other life events (Carlson & Dalenberg, 2000). Having a greater understanding of these factors can provide insight into how someone experiences and interprets a potentially traumatic experience.

Carlson and colleagues (2011) delineate three aspects of traumatic events that can affect an individual: high magnitude stressors (Kilpatrick et al., 1998), traumatic stressors, and persisting posttraumatic distress. High magnitude stressors are "sudden events that have been found to cause extreme distress in most of those exposed" (Carlson et al., 2011). Traumatic stressors are high magnitude stressor events "that are associated with extreme distress for an individual" (Carlson et al., 2011). Finally, persisting posttraumatic distress are "events associated with significant subjective distress that lasts more than a month," such as PTSD, depression, or anxiety (Carlson et al., 2011). Through their brief, psychometrically sound trauma screener (i.e., Trauma History Screen), Carlson and colleagues (2011) inquire about the following high magnitude stressors: (a) motorized accidents; (b) accidents at work or home; (c) natural disasters, (d) child or adult physical or sexual assault; (e) being attacked with a weapon; (f) events during military service; (g) sudden death of someone close to the individual; (h) witnessing someone being badly hurt or killed; (i) abandonment by someone close; or (j) any other sudden event that makes the individual feel scared, helpless, or horrified. Subsequent items on the screener gather information about the level of impact and the individual's subjective experience of the stressor. This tool provides an example of how practitioners and researchers attempt to understand the types of potentially traumatic events, as well as how those experiences affect the individual's life.

Adverse Childhood Experiences

The Substance Abuse and Mental Health Services Administration (SAMHSA) expands the definition of trauma and proposes individual trauma results from "an event, series of events or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual's function and mental, physical, social, emotional, or spiritual well-being" (SAMHSA, 2014). The field categorizes some of these events that happen in childhood as ACEs. As previously established, ACEs are a relatively commonplace and influential presence in society. Researchers are interested in learning about the connection between ACEs and outcomes so they can implement intervention and prevention efforts to target the most salient experiences that lead to negative outcomes. Researchers demonstrate an interest in examining both the impact of the ACEs identified in the original study (known henceforth as traditional ACEs) and other difficult experiences that may produce similar effects (henceforth referred to as expanded ACEs). It is important for school staff to be aware of ACEs and their impact because school staff may need to contend with the effects of both their own and student ACEs.

Traditional ACEs. The traditional ACEs include five experiences of maltreatment (physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect) and five experiences related to household dysfunction (substance abuse, mental illness, domestic violence, incarceration/ jail, and divorce/ separation) (Felitti et al., 1998; Mersky et al., 2017). Researchers have found associations between ACEs and negative life outcomes, as discussed below.

Expanded ACEs. Following the original ACE study, researchers have shown interest in exploring a wide range of other experiences that are potentially important for physical, mental, and behavioral health outcomes. Some of these experiences include spanking (Merrick et al.,

2017), peer victimization, constant parental arguing, property victimization, someone who is close to the child having a bad accident or illness, exposure to community violence, lack of good friends, below-average grades, someone close to the child dying because of an accident or illness, parental loss of employment, parent deployed to war zone, disaster, child being removed from family, being very overweight, having a physical disability, neighborhood violence, homelessness, and repeating a grade (Finkelhor et al., 2013). The aforementioned experiences have produced mixed results in terms of their negative influence, but researchers in the field are continuing to explore potential expanded ACEs to gain a better understanding of the experiences that tend to have long-term impacts.

Based on a review of the existing literature of expanded ACEs and using a social-ecological framework, Mersky and colleagues (2017) examined the relationship between seven additional potential adverse experiences and the specific outcomes of perceived stress and smoking in adults. In this study, Mersky et al. (2017) worked with a diverse sample (33.2% White; 27.4% Black; 22.6% Hispanic) of low-income women in Wisconsin (98% of participants had pretax incomes at or below 200% of the federal poverty line or were eligible for various federal assistance programs). The seven additional items examined in the Mersky et al. (2017) study and later validated in Choi and colleagues (2020) include frequent family financial problems, food insecurity, homelessness, prolonged parental absence, death of a parent or sibling, frequent peer victimization, and violent crime victimization. As documented through the second generation of ACEs studies, researchers in the field are still working to reach consensus on the most salient factors and the adverse experiences that may have a lasting impact on children and those around them.

Negative Outcomes

ACEs. Researchers have found links between ACEs and a wide range of negative physical outcomes in adults. These associations include between ACEs and physical health and health behaviors, such as cardiovascular disease, asthma, fractures, and sexually transmitted disease (Felitti et al., 1998; Logan-Green et al., 2014; Wade et al., 2016). There is also a well-documented association between ACEs and mental health. For example, researchers have documented the negative impact of ACEs on general mental health, life satisfaction (Hughes et al., 2016; Logan-Green et al., 2014; Mersky et al., 2017), and substance use (Fang & McNeil, 2017; Forster et al., 2018; Lee & Chen, 2017; Mersky et al., 2017). ACEs can result in increases in anxious (McDonald, et al., 2019; Mersky et al., 2017; Mersky et al., 2018;) and depressive symptoms (Lee & Chen, 2017; Li et al., 2016; McDonald et al., 2019; Mersky et al., 2017). In addition to these outcomes, other researchers have examined more general life outcomes. Higher ACE scores can be related to lower rates of completing high school, higher rates of unemployment, a greater likelihood of living in a household below the federal poverty level (Metzler et al., 2017) and greater interpersonal difficulties (Poole et al., 2018).

Researchers also reported associations between ACEs and negative school outcomes. In a comprehensive review of the maltreatment literature between 1990 and 2013, Romano and colleagues (2015) found evidence of school impairments, such as qualification for special education, poor academic and standardized test performance, higher rates of grade retention, and higher rates of school absences. Other researchers have found associations with below average academic skills, difficulties with attention and social relationships, aggression in kindergarten (Jimenez et al., 2016) and lower rates of high school completion (Metzler et al., 2017). Gus and colleagues (2016) reported that young children who had experienced adversity had lower school readiness, initiative, self-regulation, and behavioral scores in the early childhood education

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setting. Given the potential negative consequences of ACEs and the robust period of development that happens during school-aged years, school staff must prepare to provide support for students facing these negative consequences.

Poverty. Poverty comprises complex circumstances, and it affects individuals differently depending on the context in which they live. According to recent estimates in the United States, 38% of children under the age of 18 live in families considered to be "low income", and 17% of children live in families that are poor (Koball et al., 2019). The United States federal government uses the poverty line to define poverty and qualify people for programs and benefits. In 2021, the poverty line for a family of four was $26,500 (Costello, 2021). Poverty rates fluctuate based on a number of factors, such as jobs available, economic stressors, and level of government assistance. Recent government programs designed to ease pandemic financial hardships and child poverty have been associated with child poverty rates in 2021-2022. For example, the child poverty rate in December 2021 fell to 12.1% following the December Child Tax Credit, and it had returned to 16.7% by February 2022 (Center on Poverty and Social Policy, 2022). Given the high prevalence of poverty in the United States, it is essential for educators and other service providers to be aware of the rates in their schools and communities and the potential vulnerabilities stemming from living in poverty.

Poverty can change physiological aspects of a child's brain and health more broadly. The effects of poverty can also lead to "chronic physiological stress", which can stimulate more sympathetic nervous activity, more elevated hypothalamic-pituitary-adrenal axis activity, more dysregulated metabolic activity, and greater inflammation (Evans & Kim, 2013). Poverty is also associated with "smaller white and cortical gray matter and hippocampal and amygdala volumes" (Luby et al., 2013). All these brain structure and function changes have the potential to

put children growing up in poverty at a distinct disadvantage from their more financially stable peers.

Even in the best of circumstances, many families living in poverty face a multitude of risk factors. Poverty effects often span multiple domains of a child's life, and they can have a cumulative impact over these contexts. Research has found that living in poverty and in less resource-rich learning environments can have a negative influence on cognitive development, school progress, and social-emotional development (Barnett, 2011). Another study reported that children who experience poverty have "poorer cognitive outcomes and school performance, and they are at higher risk for antisocial behaviors and mental disorders" (Luby et al., 2013). Children living in high stress environments can manifest this stress and may have impacts on school performance in different ways, such as behavior changes, anxiety, depression, psychosomatic complaints, sleep problems, and physical illness (Bothe et al., 2013). Additionally, higher attendance rates (i.e., a proxy variable for instruction dosage) for students living in poverty has been shown to have positive associations with some early literacy skills (Stoiber & Gettinger, 2021). Children growing up in poverty with high levels of stress have showed increased levels of interference in their self-regulatory systems that may impact their attentional and inhibitory control, working memory, delay of gratification, and planning (Evans & Kim, 2013). These factors may also influence their ability to cope with and engage in appropriate social interactions.

Some researchers suggest that living in poverty and the circumstances that accompany impoverished households and communities may be inherently traumatic with lasting impacts. Childhood poverty also can show associations with adult depressive symptoms (Hatcher et al., 2018), and some researchers characterize it as a collective trauma (Shamai, 2018). Klest (2012)

reported the relationship between trauma in childhood and adulthood victimization was stronger for individuals from communities with higher community level poverty rates. Although professionals should not view children living in poverty through a deficit lens, practitioners and researchers need to understand how potential risk factors associated with poverty and chronic stress can influence school readiness and the ability to access a wholistic educational experience.

Intersectional Identities. In the United States, trauma and poverty disproportionately negatively impact students of color. Black, Native American, and Latinx children experience the most significant disproportionate levels of poverty (Koball et al., 2019). In addition to the negative effects that students of color who are economically marginalized may experience in the school setting (e.g., higher discipline referrals and lower standardized test scores), they also tend to be exposed to higher rates of stressors in the home and community setting (Blitz et al., 2016; Wade et al., 2016). Although it is essential to examine how systemic racism negatively affects students of color, the negative effects of poverty and trauma also extend to white students who are experiencing economic disadvantage (Blitz et al., 2016). For example, researchers report that child maltreatment disproportionately impacts families living in poverty, regardless of race or ethnicity (Kim & Drake, 2018). Overall, children living in poverty are more likely to experience a greater number of ACEs than their peers (Lawson et al., 2019; Powel & Davis, 2019).

Capitalizing on the wide reach of public education across race and socioeconomic groups, schools are a natural place to provide extra supports for children who are experiencing higher rates of poverty and trauma. Given the impact that potentially traumatic experiences and poverty can have on the well-being and functioning of students, schools with high rates of students experiencing trauma and poverty should also pay particular attention to the added stress that supporting these students can have on the educators who engage with them daily.

Secondary Traumatic Stress and Related Definitions

Research in a variety of helping professions that work with populations who have experienced trauma (e.g., social workers, child welfare workers) has explored the potential impacts that this type of work can have on professionals. These fields recognize several interrelated concepts that may result from high levels of exposure to secondary trauma or occupational stress. The following section will delineate these terms to reduce confusion and to clarify the concept being studied in this investigation. Many of these terms date back to 1982 when C.R. Figley introduced the idea that "secondary victimization" can lead people to have adverse reactions from the traumatic experience of others (Ludick & Figley, 2017).

Secondary Traumatic Stress

The main outcome construct in this study, Secondary Traumatic Stress (STS), represents a constellation of symptoms that may result from exposure to hearing about the adverse experiences of others. When Figley (1995) defined the concept, he posited STS presented similarly to PTSD, but the construct of STS was less stigmatizing than PTSD (Sprang et al., 2019). Figley defined STS as "the natural, consequent behaviors and emotions resulting from knowledge about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or suffering person" (Figley, 1999, p. 10). Symptoms of STS can include re-experiencing, avoidance, dissociation, increased irritability, intrusive thoughts, and changes in arousal, reactivity, cognition, and mood (Hydon et al., 2015; Sprang et al., 2019). Interest in STS and indirect trauma effects became more salient after the introduction of indirect exposure to a traumatic stressor as a possible source of PTSD in the fourth edition of the DSM (DSM-IV; American Psychiatric Association, 1994), as well as "repeated or extreme exposure to aversive details" in the DSM-5 (American Psychiatric

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Association, 2013). One of the key differences between STS and the related terms explained below is that STS symptoms can develop more acutely and from a single instance of exposure, whereas vicarious traumatization often develops over an accumulation of negative secondary experiences, as discussed later (Branson, 2018).

Despite the research conducted on STS in the past two decades, the field requires a greater understanding and more empirical data regarding the frequency, intensity, and type of experiences that are more likely to lead to STS. In recent years, multiple reviews have attempted to synthesize the field's current understanding of the theoretical and empirical foundations, as well as best practices in assessment, prevention, and intervention. For example, Hensel and colleagues (2015) performed a meta-analysis of 37 articles with STS as an outcome variable. Using Cohen's convention for effect sizes (Cohen, 1988), Hensel and colleagues (2015) found very small but significant effect sizes ($r < .10$) for age, experience, and trauma training. They also found small but significant effect sizes ($.10 < r < .30$) for caseload frequency, caseload volume, caseload ratio, personal trauma, work support, and social support. Finally, the authors found small but nonsignificant effect sizes for personal trauma same as clients, emotional involvement, posttraumatic growth, and supervision quality.

Sprang and colleagues (2019) also reviewed the state of the STS literature, and they identified potential risk and protective factors. Risk factors included burnout, compassion fatigue, vicarious trauma, dose of indirect exposure, maladaptive coping strategies, personal trauma history, interaction between personal and professional characteristics, level of peer and organizational support, and years of professional experience. Protective factors include both personal (i.e., dispositional mindfulness, emotional self-awareness, social support, positive perceptions of work environment support) and professional (i.e., perceived self-efficacy,

competence, professional development, use of evidence-based practices, effective supervision) factors (Sprang et al., 2019). Previous research both calls for more clarity on the most salient STS factors, as well as a road map for potential predictors to explore.

      STS Prevalence. As established in the Introduction, estimates for STS differ widely based on the population being studied (i.e., first responders, mental health professionals, nurses), methodology, and severity of the stressors (Molnar et al., 2017). Early work on STS primarily used PTSD measures with first responders, and it rarely differentiates between primary and secondary trauma exposure (Molnar et al., 2017). These estimates vary between 4.4 - 46% of the samples (Kessler et al., 2011; Thormar et al., 2010). In the response to the need for a measure more specific to indirect exposure, Bride and colleagues (2007) developed the Secondary Traumatic Stress Scale (STSS). As research has progressed beyond first responders, estimates for mental health professions vary as well. Molnar and colleagues (2017) reviewed findings from participant samples in fields such as child welfare (34%; STSS; Bride et al., 2007), licensed social work (15.2%; STSS; Bride 2007), social workers treating survivors of family or sexual violence (21%; STSS; Choi, 2011), and military mental health providers (19.2%; STSS; Cieslak et al., 2013). Although researchers are still building the literature base for STS in school personnel, early work suggests a significant need in this area. For example, in one of the few quantitative investigations of STS with school personnel, Borntrager and colleagues (2012) found a high rate of 75% of respondents that surpassed the cutoff criteria on all three subscales of the STSS in their educator sample. An independent investigation in other school staff samples would increase confidence in this finding would because prevalence rates with school staff are more moderate in other studies, such as 39% (Hatcher et al., 2011), 43% (Koenig et al., 2018), and 14.1% and 15.9% (ProQOL; Fleckman et al., 2022).

Compassion Fatigue

Compassion fatigue (CF) represents a related term that is often used interchangeably in the literature (Sprang et al., 2019). As a term also coined by Figley (1995), compassion fatigue represents when a clinician has become so impacted by their clients' trauma that the clinician can no longer provide effective services. Compassion fatigue is "characterized by feelings of depression, anxiety, and reduced empathy resulting from repeated exposure to the distress of vulnerable populations" (Ziaian-Ghafari & Berg, 2019, p. 33). These symptoms resulting from compassion fatigue can make it more difficult to engage and effectively work with vulnerable populations. The symptoms of compassion fatigue also have a large overlap with PTSD, and the subsequent stress often results from wanting to help the other person (Newell et al., 2016). In an updated conceptualization, Ludick and Figley (2017) proposed that compassion fatigue is more often used in helping professions, whereas secondary traumatic stress is the term used across a wider variety of professional populations.

Vicarious Trauma

Vicarious trauma involves "alterations in the therapist's cognitive schema" (McCann and Pearlman, 1990) that may result from indirectly experiencing a client's emotional or physical reaction related to trauma (Newell et al., 2016). This type of trauma may impact both internal and external schemas, such as sense of self, world views, sense of safety, intimacy, and trust (Newell et al., 2016). These changes seem to be more static, and they are often result in more "pervasive, cumulative, and permanent" alterations (McCann & Pearlman, 1990).

Burnout

Burnout is another occupational hazard that may result from stressful circumstances and interactions with clients. Professional burnout is a "state of physical, emotional, psychological

and spiritual exhaustion resulting from chronic exposure to (or practice with) populations who are vulnerable or suffering" (Newell et al., 2016). Burnout is a wider concept than those previously discussed, and it relates more to the demands of a particular type of work and environment (Williamson et al., 2020). Maslach (2003) defines burnout as a "prolonged response to chronic emotional and interpersonal stressors on the job and is defined here by the three dimensions of exhaustion, cynicism, and sense of inefficacy" (p. 189). Although this is another important concept to understand in relation to occupational stress and workplace environment, the lack of focus on traumatic experiences in the burnout construct differentiates it from the other related concepts.

Theoretical Grounding

Although STS is still a relatively young area of study and has limited research in schools, both theoretical and empirical information suggests the need for further investigation of STS in the school staff population. In particular, understanding the biological impact of trauma, STS as a construct, and the bioecological theory provide evidence for both the potential occurrence of STS in school personnel and the need to explore it more in this population.

Biological Impact of Trauma

The biological functioning of the body impacts behavior in a variety of ways. One of the main tasks of the brain and various systems in the body is to help the body maintain homeostasis to ensure optimal functioning. This homeostasis allows individuals to regulate their behavior and engage with the world around them. However, when these systems experience increased stress and pressure, malfunctions can occur. Stress can shape neurobiology through allostasis, or the "taxation of physiological systems that results in long-term alterations of the threshold for activation" (Thompson et al., 2019). When functioning properly, the brain aids in regulating the

behavioral and physiological stress responses through the autonomic, immune, neuroendocrine, and metabolic systems (McEwen, 2013). Fortunately, this regulatory function of the brain often leads to helpful adaptations. Otherwise, allostatic load, which is the "deterioration produced by too much stress and a resulting unhealthy lifestyle," may result (McEwen, 2013). This allostatic load can lead to disease and psychopathological outcomes. Other important influences include inputs such as proper nutrition, healthy and loving relationships, and "stimulating and meaningful learning opportunities" (Swick et al., 2013). These effects may be cumulative and can have far-reaching implications.

Trauma and stressful experiences play a role in the formation of neural stress pathways, emotional processing pathways, and emotional regulation pathways (Thomason & Marusak, 2017). These pathways manage important functions, such as cognitive control, selective attention, reward processing and response, motivation, and social behavior (Bick et al., 2017; Chen & Baram, 2016; Thomason & Marusak, 2017). In a theory known as the neurocircuitry model, after a person has experienced significant trauma or stress, the amygdala response stays exaggerated or hyperactive even without the stress being present. Meanwhile, the prefrontal cortex is hyporesponsive and exerts less top-down control on the system. As a result, the amygdala is not regulated properly and cannot tamper certain emotions and irrelevant cognitions (O'Mahony, 2015). Other biological systems and areas of the brain hypothesized to be impacted by stress include the hypothalamic-pituitary-adrenal axis (Berens & Nelson, 2019; O'Mahony et al., 2015; Thompson et al., 2019); autonomic system (Thompson et al., 2019); gut microbiome (O'Mahony et al., 2015); hippocampus (Johnson et a., 2016; Piccolo & Noble, 2019; Thomason & Marusak, 2017); amygdala (Chen & Baram, 2016; Johnson et al., 2016; Killion & Weyandt, 2020; Piccolo & Noble, 2019); prefrontal cortex (Bick & Nelson, 2016; Piccolo & Noble, 2019;

Thomason & Marusak, 2017); and connectional architecture, such as the corpus callosum (Bick et al., 2017; Calem et al., 2017). Taken together, this evidence suggests the body's biological system affects how an individual interprets and interacts with people and the surrounding environment. These responses help to explain why individuals may experience impairment when exposed to significant stressors in their environment, whether that is through experiencing primarily or secondary trauma.

STS Theory

Although the roots of STS extend back to 1983 with the introduction of Figley's term secondary traumatization, researchers continue to refine and clarify the construct. Ludick and Figley (2017) proposed an updated and wholistic theory of STS meant to both make sense of the theoretical and empirical literature and to stimulate further research in this area. Ludick and Figley (2017) call for widening the professionals considered in the STS literature, and indicate it is "critical to use a wide-angled research focus to include anyone reading or thinking about traumatic materials, not just those working directly with traumatized mental health clients" (e.g., funeral directors, victim advocates, attorneys, jurors, court workers, journalists, researchers, and trauma curriculum teachers/ students) (p. 112). The current researcher advocates for the importance of including school personnel on the list of suggested professionals given their work with trauma exposed youth. Ludick and Figley (2017) proposed nine theoretical stipulations to present a scope and unified view of how STS develops, as well as how to address it (see Table 1).

Table 1

STS Theoretical Stipulations

(1) STS is a highly complex and often unavoidable experience when working with the suffering or those who study them, or through records of traumatic experiences.

(2) STS is most often present when a worker is exposed to a given dosage of evocative reality. This dosage varies from person to person: from direct contact and discussion with the traumatized to videotapes of interviews with the traumatized, all the way to reviewing written materials without photographs written by another.

(3) STS is elevated when the worker generates the necessary empathic response to do their job of helping to understand and help the traumatized.

(4) STS is elevated when the worker must compartmentalize the stress reactions to the evocative reality (direct contact, phone, or records).

(5) STS is elevated where there is prolonged exposure to evocative materials in the course of doing their job.

(6) STS is elevated when prior traumatic events are remembered.

(7) STS is lowered when the worker experiences incidents of compassion stress satisfaction that increases a sense of worth and purpose.

(8) STS is lowered when the worker experiences the social support from fellow workers, management, and the institution generally.

(9) STS is directly related to the level of compassion fatigue resilience (CFR) but affected also by other life demands outside of work.

Note. The nine stipulations were taken directly from "Toward a Mechanism for Secondary Trauma Induction and Reduction: Reimagining a Theory of Secondary Traumatic Stress," by M.

Ludick and C.R. Figley, 2017, *Traumatology, 23*(1), p. 112-123,

http://dx.doi.org/10.1037/trm0000096. Copyright 2016 by the American Psychological

Association.

Building upon the theoretical stipulations, Ludick and Figley (2017) propose a theory to

"measure the level of resilience (from high to low) to STS and also resilience to compassion

fatigue (CF)… it is also a framework for understanding both positive and negative effects that

emanate from this STS process." This model includes 13 variables to predict the level of

compassion fatigue resilience (CFR). These variables are divided into three sectors, as described

in Table 2. This conceptual framework serves as a guide for understanding potentially salient

predictors that may contribute to or mitigate STS. It is beyond the scope of this investigation to

explore all 13 factors proposed; however, this conceptual framework guided the factors

investigated in this project.

Table 2

Compassion Fatigue Resilience Model

Sector	Variables	Description
Empathic stance/ response	(a) Exposure to suffering (b) Empathic concern (c) Empathic ability (d) Empathic response (quality and quantity determined by a-c)	(a) Amount of work with suffering clients (b) Direct, high levels of compassion and interest in helping clients meet their needs and a focus on human interactions (c) Capability and tendency to recognize the suffering of others (d) Reaction to the need to be empathic and attempts to reduce suffering of another
Secondary Traumatic Stress	(e) Traumatic memories (f) Other life demands	(e) Own trauma history and accumulation of others' (f) Life situations that demand attention that can temporarily disrupt functioning
Compassion Fatigue Resilience	(g) Self-care (h) Detachment (i) Sense of satisfaction (j) Social support	(g) The learnt behavior of practices and activities initiated and performed by individuals to maintain health, life, and well-being (h) Ability to let go of client suffering (i) Sense of satisfaction with client service (j) Buffer, activities such as engaging with caring people, having nurturing relationships

Note. Taken directly from "Toward a Mechanism for Secondary Trauma Induction and

Reduction: Reimagining a Theory of Secondary Traumatic Stress," by M. Ludick and C.R.

Figley, 2017, *Traumatology, 23*(1), p. 112-123, http://dx.doi.org/10.1037/trm0000096. Copyright 2016 by the American Psychological Association.

Bioecological Theory

Since its original conceptualization in 1979, Bronfenbrenner's model has undergone multiple revisions that have culminated in the current Bioecological Model of Development. Bronfenbrenner and Morris (2006) conceptualize development through the concepts of process, person, context, and time. They described the foundational proximal processes as "processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate external environment" (Bronfenbrenner & Morris, 2006, p. 797). These processes can occur at the microsystem (i.e., direct, face-to-face interactions), mesosystem (i.e., relationships between two or more settings that impact the individual), macrosystem (i.e., larger systems of cultural beliefs, societal trends, and political and community influences), and exosystem (i.e., relationship and processes that happen between two or more systems, one of which the individual is not directly involved) levels.

This model highlights the importance of understanding people in the context of their interactions with others, the systems in the community, and the larger societal policies and practices that exert influence on peoples' daily lives. DeCandia and Guarino (2015) posit that when using an ecological approach in a trauma-informed care model, this allows the use of the entire system in a child's life as a "vehicle for intervention." The bioecological model highlights the bidirectional influence that people and contexts can have on each other, and it may partially explain the development of STS. As delineated earlier, trauma and adverse experiences have the potential to impact individuals' short- and long-term functioning. This change in functioning

may influence other people they interact with, particularly in the individuals' micro- or macrosystems. At the microsystem level, educators engage in direct interactions with students that may expose them to hearing about the traumatic experiences directly or the behavioral, emotional, and psychological aftermath of those experiences. The community (e.g., neighborhood violence and poverty) and society level (e.g., racism and housing discrimination) impacts on students from the macrosystem can also have an indirect influence on educators through their effects on students.

STS in Schools

Although the current empirical STS research in schools is limited, the extant quantitative and qualitative evidence establishes STS as a pervasive and salient issue educators want more support to address. For example, in their qualitative investigation, Caringi and colleagues (2015) found a high level of school staff who intended to leave their current placement (12 out of 15 participants). Although the methodology and responses of the participants did not allow for causal conclusions or consistent themes to explain this rate of intention to leave, the concurrent high rate of reported stress levels (Caringi et al., 2015) and rates of STS symptoms (Borntrager et al., 2012) in this sample suggests the need for further investigation of STS and implications for staff functioning and satisfaction. Further, the participants perceived certain institutional practices (i.e., class size, lack of supportive supervision) as contributing to their stress levels and ability to perform their job duties adequately. Other qualitative work in this area suggests that teachers feel a high emotional burden resulting from STS and stress when trying to manage students' challenging behavior and trauma-related symptoms effectively (Allisic et al., 2012; Berger et al., 2020; Caringi et al., 2015). Teachers and school personnel may also feel their stress exacerbated because of role confusion and the limits of what they can do to help students

(Rankin, 2021). Educator stress can result from either trauma related disclosure by students or managing negative behaviors from students who have experienced trauma. However, early work suggests that providing quality professional development and bolstering teachers' protective factors, such as self-efficacy and compassion satisfaction, may help to mitigate some levels of STS (Christian-Brandt et al., 2020). As previously described, quantitative evidence, as measured by the STSS, also suggests the potential salience as a construct in school personnel (i.e., 75% in Borntrager et al., 2012; 39% in Hatcher et al., 2011; 43% in Koenig et al., 2018).

Desire for More Support and Knowledge

In previous research, educators have expressed the want to do more for their students, as well as to receive more support (i.e., training, resources, understanding) in assisting their students in the context of trauma or adverse experiences (Caringi et al., 2015; Lawson et al., 2019). Educators are becoming more aware of students' needs, but they report a lack of knowledge of effective ways to provide help (Allisic et al., 2012; Blitz et al., 2016; Caringi et al., 2015; Lawson et al., 2019). Furthermore, some teachers report the desire for support and resources that are culturally relevant to both themselves and their students, such as understanding student behavior, improving engagement in learning, and learning strategies to increase motivation (Blitz et al., 2016). Early evidence suggests that receiving quality trauma training can result in teachers feeling more prepared and confident in working with trauma-impacted students (Berger et al., 2020), as well as provide teachers with the "trauma literacy" and concrete skills to fulfill their duties more effectively to students (Lawson et al., 2019).

Potential STS Risk and Protective Factors for School Professionals

Researchers have examined a variety of factors that potentially contribute to STS. However, the field has yet to come to a consensus on the most important contributing factors. It

is beyond the scope of this paper to examine all possible predictors, but this researcher used both empirical and theoretical considerations to choose the predictors for this proposed study. Reviews such as those completed by Sprang and colleagues (2019) and Hensel and colleagues (2015), as well as the theoretical frameworks previously mentioned (i.e., biological impact of trauma, STS as a construct, and the Bioecological theory) served as the basis for choosing predictors. The researcher also considered STS work previously completed in the school setting (i.e., Borntrager et al., 2012; Hatcher et al., 2011; Koenig et al. 2018). To obtain a wholistic view of the participants within the scope of the study, the framework for the current study is based on examining a set of personal and professional factors that may contribute to STS. Within these life domains, the predictors include a mixture of static (i.e., difficult or impossible to change) and dynamic (i.e., more amenable to prevention or intervention) factors. The predictors also contained a mixture of risk and protective factors. Prilleltensky and colleagues (2016) conceptualize risk factors as "characteristics of the person or environment" that increase the likelihood of negative outcomes, and they describe protective factors as those that increase the possibility of positive outcomes (p.105). This mixture of factors will allow researchers and practitioners alike to have a better understanding of characteristics or experiences that may leave individuals more vulnerable to the development of STS, as well as identify areas as targets for intervention and prevention efforts. For example, if researchers find strong associations between self-care (i.e., a personal factor) and STS, school leaders can provide professional development opportunities aimed at helping employees learn about the benefits of effective self-care.

Professional Factors

Previous research suggests the professional factors in this proposed study may influence individuals in either an individual (i.e., trauma-informed professional development and role) or

ecological capacity (i.e., supervisor and colleague support) related to STS. For example, Caringi and colleagues (2017) examined STS and possible predictors for a sample of social workers. In a qualitative subsection of the study, respondents reported the salience of professional and organizational factors (i.e., overall support and acknowledgement, team approaches, feelings of competence, and mastery of skills) in their own work and on the development of STS.

Supervisor Support. Employees enter a job with unique strengths and areas of growth, but supervisors have the potential to enhance or hinder a professional's functioning in the workplace. Although researchers have examined supervisor support as a predictor of STS, greater clarity on this factor remains an area of need in the field. Quinn and colleagues (2019) found supervisor support to be a significant predictor of STS in their sample of social workers. In their meta-analysis examining risk factors for STS, Hensel and colleagues (2015) found a small but significant effect size for work support ($k = 5$ studies; ES = -0.17) and a small but nonsignificant effect size for supervision quality ($k = 7$ studies; ES = -0.09). The authors noted, however, the need for future investigators to examine the relationship between supervisory support and STS. They observed a scarcity of empirical studies for this relationship, and they propose the heterogeneity in how authors measure the construct across studies makes comparisons difficult. The field would benefit from greater conceptual clarity and consensus on the most important factors in supervisor support. This enhanced understanding will ideally allow school and district leadership to provide authentic, effective support rather than actions that are superficial or performative.

Although limited studies exist for supervisor support with STS, there is an established literature for the benefits of supervisor support for related concepts. Alkhateri and colleagues (2018) define perceived supervisor support as "employee's general views about the degree to

which their supervisors value their contribution and care about their well-being" (p. 478). These authors found perceived supervisor support has an indirect impact on employee turnover intention through job satisfaction and affective organizational behavior for teachers in the United Arab Emirates (Alkhateri et al., 2018). Klusmann and colleagues (2008) found that higher principal support (i.e., teachers' perception of principal availability and competence regarding pedagogy support) resulted in higher teacher engagement. In a review article of supervision for school psychologists, Hawkins and Shohet (2006) identified essential characteristics of a good supervisor. These characteristics include: flexibility, perspective taking, ability to work with different types of diversity, being both knowledgeable about the content area and a continuous learner, having the ability to manage their and others' anxieties, demonstrating sensitivity to the details of the work context, and embodying healthy power dynamics (as cited in Flanagan & Grehan, 2011).

Supervisor support at the organizational and school environmental level (i.e., more institutionalized practices beyond examining the impact of one-on-one supervisory support) also has important implications for staff performance and well-being. In an Israeli sample of 2,565 teachers, Bolger and Nir (2010) found that "teachers who consider their school a place that values their contribution and care about their well-being are more likely to be satisfied both intrinsically and extrinsically" (p. 301). To better understand and deliver culturally responsive trauma-informed practices in high-poverty urban elementary school settings, Blitz and colleagues (2020) performed a qualitative analysis for the use of the trauma-informed Sanctuary Model approach to supporting schools that have individuals impacted by trauma. Two major themes identified through the study included the need for greater partnership between administrators, teachers, and classroom staff, and the need for more effective administrative

support and leadership. At the principal level, Derrington and Campbell (2015) found that supportive interventions, open communication, collaboration, and attention to concerns from supervisors were essential for the effective implementation and functioning of a novel teacher evaluation system. Similarly, supervisors create a supportive environment about employees' life outside of the school context through intentional actions, such as "expressing concern for the well-being of their subordinates, helping employees with their career development, and valuing the work of those who report to them" (p. 483).

As a follow-up to the quantitative study for STS in the school setting conducted by Borntrager and colleagues (2012), Caringi and colleagues (2015) completed a qualitative study with a subset of the same sample to get a more detailed description and understanding of the educators' experience with STS. A major theme that emerged was the importance of institutionalized practices on levels of staff stress. Respondents indicated organizational factors, such as opportunities for mentoring and class size, made a substantial impact on their levels of stress. Based on the literature previously mentioned for individual supervisor and organizational level support, the following ideas emerge as relevant for the supervisor support factor used in this study: supervisors valuing contributions of employees, caring about the well-being of employees, providing a supportive climate, and valuing different perspectives and sources of diversity.

Peer and Colleague Support. In addition to the more formal sources of support in schools, such as supervisory and organizational, less formal sources of support can also play a role as a protective factor against STS and in the ability of school staff to perform their professional duties. Borntrager and colleagues (2012) found that the employee perception of working for an organization that discourages seeking social support was a significant predictor of

STS. Furthermore, Caringi and colleagues (2015) identified personal support systems as a major resource for dealing with work-related stress for school personnel. Participants in this qualitative study discussed the importance of family, community, and colleagues as protective factors. Colleague support (i.e., having the opportunity to discuss work-related stress, share expertise, and support one another) appears to be helpful in protecting against the negative effects of STS. Researchers have replicated the importance of peer support in a sample of social workers who highlighted the value of processing stressful experiences with peers, as well as using humor to provide a sense of relief (Caringi et al., 2017). Bride and colleagues (2007) found a significant bivariate correlation between peer support and STS ($r = -.145$, $p = < .05$) in their sample of child protective services workers. Although not differentiated by type of support in the review, Hensel and colleagues (2015) found a significant effect size of social support on STS ($k = 5$ studies; ES $= -0.26$, $p < .05$). The authors note future studies should examine whether social or work-related supports have a bigger impact as a protective factor.

Trauma-Informed Practices Professional Development. Given the large portion of the United States population that has experienced an ACE or other potentially traumatic incident by the time they turn 18 years old, attempting to prevent or ameliorate the negative impact of these experiences is an important mandate for schools. Based on Substance Abuse and Mental Health Services Administration (SAMHSA) guidance (2014), McIntyre and colleagues (2018) define trauma-informed practice as "a systems-level framework for realizing, recognizing, and responding to the impacts of trauma in ways that promote healing and avoid retraumatization" (p. 1). These types of practices can help strengthen resilience through providing consistent, safe learning environments and teaching specific skills to staff to better manage and address challenging behaviors (Anderson et al., 2015). A key tenet is that not only should individual

teachers work towards this goal, but systems should also strive to lessen the impact of adverse experiences.

Although no universal definition exists for trauma-informed practices, the field recognizes particular methods that can be helpful. For example, SAMHSA proposes four assumptions and six principles that should guide a trauma-informed approach, as listed in Table 3. To make these practices more effective, McIntyre and colleagues (2018) suggest schools should incorporate trauma-informed approaches in ways that make them part of the staff knowledge base, school culture, and formalized systems of student support. Common elements that are often integrated in trauma-informed practices include psychoeducation on the physical and psychological effects of trauma, strategies to actively avoid retraumatizing students, strategies to increase feelings of safety, common language shared by the staff, strategies to avoid vicarious trauma experienced by the staff, and strategies for self-care (Purtle, 2018). Staff members who received professional development in working with trauma-informed practices are subsequently better equipped to address the consequences of trauma in the school setting (Thomas et al., 2019).

Table 3

SAMHSA's Guidance for a Trauma-Informed Approach

The Four R's- Key Assumptions	Six Key Principles
- Realization of trauma and how trauma can impact families, groups, organizations, and communities - Recognize the signs of trauma - Respond by applying trauma-informed principles to all areas of functioning - Resist retraumatization of clients and staff	- Safety - Trustworthiness and transparency - Peer support - Collaboration and mutuality - Empowerment, voice, and choice - Cultural, historical, and gender issues

Note. Model was taken directly from SAMHSA's Concept of Trauma and Guidance for A Trauma-Informed Approach (p. 9-12), by SHAMHSA's Trauma and Justice Strategic Initiative, 2014, HHS Publication No. 14-4884.

Professional Role. School staff interact with and aid in student development in a variety of ways. Within those roles, educators may fulfill different, but often overlapping, functions in addressing challenges that may arise from traumatic experiences. The practice models and professional guidance for school psychologists, counselors, social workers, and teachers all explicitly or implicitly task those professionals with providing support for students who have experienced ACEs or potentially traumatic experiences. For example, the 2020 National Association of School Psychologists (NASP) Practice Model states that school psychologists "design, implement, and evaluate services that promote resilience and positive behavior, support socialization and adaptive skills, and enhance mental and behavioral health" (NASP, 2020). The American School Counselor Association published a position statement asserting the importance of their role in trauma-informed practices and helping to "transform the school into a safe, supportive, trauma-sensitive learning environment for all students" (2016). The National School Social Work Model charges school social workers with providing "evidence-based education,

behavior, and mental health services", as well as promoting "a school climate and culture conducive to student learning and teaching excellence" (School Social Work Association of America, n.d.). Finally, the National Education Association states that "supporting students who suffer from childhood trauma requires whole school involvement and transformation. All school employees play a crucial role in supporting students impacted by childhood trauma." (NEA, n.d.) Teachers can help students who have experienced adversity by (a) recognizing and referring possible trauma systems to school mental health services, (b) participating on the treatment team, and (c) supporting students as they progress through the therapeutic process (Bell et al., 2013).

School staff interact with children in different capacities based on their roles. For example, teachers may or may not know the details of the potentially traumatic experiences the student has faced. However, they may witness the daily impacts of trauma on students through their behavioral, social, and academic functioning (Romano et al., 2015). Conversely, support personnel (i.e., school psychologist, counselors, or social workers) have less regular contact hours with students who have experienced trauma, but they likely hear more of the details of the challenging experiences or be called to support more extreme behavior and needs that can result from the trauma. Although it is undeniable that school staff interact with children who have experienced trauma, what appears less clear is how student trauma tends to influence staff who fulfill these different professional roles. This researcher could not find any literature delineating the impact of STS on different roles within the school; thus, one aim of the current study is to explore whether professionals in particular roles tend to experience greater levels of STS or better predict STS.

Personal Factors

The following factors reflect characteristics considered unique to the personal lives, practices, and perspectives of the individual. This set of factors reflects both static (i.e., personal trauma history and subjective impact of the COVID-19 pandemic) and more dynamic factors (i.e., self-care practices and perceived dosage of student trauma). Research conducted in related fields or with similar factors suggests the need to examine personal factors in the current study (Caringi et al., 2015).

Self-Care. Self-care has received increased attention as a factor that may provide protection against STS or other stress related negative impacts. Dorociak and colleagues (2017) define self-care as "a multidimensional, multifaceted process of purposeful engagement in strategies that promote healthy functioning and enhance well-being" (p. 326). Although self-care is increasingly used to combat work related stress, researchers and practitioners in the mental health field are still working to operationalize and understand the most important aspects that contribute to effective self-care. Butler and colleagues (2019) proposed six domains of self-care that broadly parallel Maslow's hierarchy of needs (i.e., physiological, safety, belongingness and love, esteem, and self-actualization). The domains include physical, professional/ workplace, relationship, emotional, psychological, and spiritual. The authors propose that proper attention to these areas may limit negative outcomes (i.e., stress and adverse outcomes) and foster positive outcomes (i.e., well-being and overall functioning) (Butler et al., 2019).

Multiple researchers report the potential positive impact of self-care on mental health and well-being. Related to the current study, Kulkarni and colleagues (2013) reported an association between self-care and lower levels of STS in a sample of domestic violence service providers. In their qualitative analysis, Caringi and colleagues (2015) reported school personnel perceived self-care activities as protective against STS and other work-related stressors. Rankin (2021)

suggests in her review article that self-care should be a first line of defense and "if teachers are not provided the opportunity for healthy balance and processing time through a self-care routine, it is likely that they could not be present when engaging with students in the classroom" (p. 8). Klusmann and colleagues (2008) found that self-care in the realm of social support of family and friends had a significant negative impact on emotional exhaustion in their sample of teachers (B = -0.18). Conversely, Salloum and associates (2015) did not find a significant relationship with STS in child welfare workers, but they found significantly lower levels of burnout and higher levels of compassion satisfaction. The authors posited that professionals experiencing STS may require more intensive interventions than self-care. Although the previously described research suggests potential benefits of strong, wholistic self-care routines, the field needs further research to confirm the positive impact on STS, as well as homing in on optimal domains and dosage.

Personal Trauma History. The impact of an individual's personal trauma history continues to be an ambiguous predictor of STS. One explanation for the variability in findings may be due to how authors measure trauma history and use it in statistical modeling. Alternative explanations include moderating variables that are not always examined, such as defense style or the cognitive resources needed to understand and resolve the effects of past trauma (Adams & Riggs, 2008; Pearlman & Saakvitne, 1995). Despite the ambiguity, theoretical (STS, Ludick and Figley, 2017) and empirical data support further exploration of this construct. In their meta-analysis of STS risk factors, Hensel and colleagues (2015) reported a small but significant effect size for personal trauma history (k = 11 studies; r = .19), although that effect was moderated by year of publication (i.e., smaller effects post 2008).

Hydon and colleagues (2015) suggested teachers may be especially vulnerable to STS because of their empathetic awareness of the child's struggles. Teachers with their own traumatic

or stressful experiences may recognize similar symptoms from their own life and witnessing their students' distress may trigger stress reactions in in themselves. In their review, Sprang and colleagues (2019) cite research to support that although personal trauma history is associated with a vulnerability to STS, there is a positive association between successfully addressing PTSD from previous traumatic experiences and lower levels of self-reported STS. Borntrager and colleagues (2012) did not find a significant association between personal trauma history and STS scores, however, this may be a product of one of the limitations in STS research. Overall, these findings suggest that, although individuals cannot alter their trauma history, active steps towards resolution of impairment may be an important protective factor against further harm in the form of STS. Given the preliminary evidence that personal trauma history may be an important predictor of STS, researchers in the field can contribute to the literature base by incorporating investigations of this factor in further studies.

Perceived Dosage of Student Trauma. As previously discussed, exposure to potentially traumatic experiences in childhood is all too prevalent of an occurrence, and that exposure may contribute to a myriad of academic, behavioral, and mental and physical health challenges. Not all children exposed to traumatic events develop posttraumatic stress disorder or other negative outcomes, but subclinical levels of symptoms can still have a negative impact on youth and their functioning (Eklund et al., 2018; Gonzalez et al., 2016). However, obtaining the exact number and nature of those experiences can be a complex process, and the field has yet to reach a consensus for how to best gather information about potentially traumatic experiences, especially in the school setting (Dvorsky et al., 2014). Although there are many potential benefits of conducting trauma or ACE screenings in school (e.g., using data to drive decisions and interventions, progress monitoring, help in identifying those who may need support), there are

potential risks involved as well (Winninghoff, 2020). For example, there is a risk of blaming students and communities or approaching the issue from a deficit mindset (Winninghoff, 2020), over-identifying students who may not need support (Eklund et al., 2018), or over-committing resources that a school may not have (Finkelhor, 2018).

Given the large amounts of time school personnel spend with youth, staff may learn about the potentially adverse experiences in children's lives in less formal ways (e.g., student or family report, community member report, news coverage). Alternatively, staff may deal with the fallout of traumatic experiences (e.g., behavioral or academic difficulties) without having a clear picture of what the child has endured. Whether educators have an accurate understanding of what their students have experienced, they will often form their own perceptions of their students' stories. In general, obtaining school personnel's perspectives on child trauma remains understudied (Alisic, 2012). However, trauma research and cognitive science suggest that an individual's interpretation and understanding of an event impacts how they react and make meaning (Chafouleas et al., 2018; Zacks, 2020). For example, when a teacher interprets challenging student behavior as attentional issues or defiance rather than a trauma response, they may interact with the student in an unhelpful or retraumatizing manner. Additionally, when they perceive their students to have large amounts of exposure to trauma or frequently hear about student trauma, that will result in an increased dosage of indirect exposure to trauma, and therefore potentially lead to greater vulnerability to developing STS (Ludick & Figley, 2017; Sprang et al., 2019).

Subjective Impact of the COVID-19 Pandemic. Research into the impact of the unprecedented COVID-19 pandemic is still in its early stages. However, early investigations provide evidence for the COVID-19 pandemic having a sizable impact on individuals at personal

and professional levels (Baker et al., 2021; Ozamiz-Extebarria, 2021; Zadok-Gurman, 2021). In an investigation of the early COVID-19 impact on a sample of public school teachers in New Orleans, Baker and colleagues (2021) explored the prevalence of 18 stressors (e.g., separated from family or close friends; more acute awareness of stressors students face at home; unable to do enjoyable activities or hobbies; experienced emotional distress; hard time transitioning to working from home; increase in workload) and 6 protective factors (e.g., more appreciative of things usually taken for granted; more attention to personal health; more quality time with family or friends). On average, teachers reported seven stressors and four protective factors. A higher number of stressors was associated with worse mental health and more difficulty coping and teaching. Conversely, more protective factors were associated with a greater ability to cope and teach (Baker et al., 2021). Ozamiz-Extebarria and colleagues (2021) found a high percentage of teachers in their Spanish sample who reported symptoms of anxiety, depression, and stress during the COVID-19 pandemic. Lizana and colleagues (2021) observed a significant decrease in quality-of-life scores in their sample of Chilean teachers from before the pandemic to during the pandemic. In response to COVID-19, educators have had to adjust by learning new skills and gaining new technological competence (Joia & Lorenzo, 2021) as well as becoming aware of more inequities and stressors their students face daily (Sokal et al., 2020). Although none of the research this author was able to find made connections with STS, the potentially significant stressor of the pandemic may leave school personnel more vulnerable to other adverse consequences, such as STS.

Ethical Considerations in Trauma Related Research

Working with individuals who have experienced indirect or direct trauma poses a complex set of circumstances for conducting ethical practices for practitioners and researchers

alike. The American Psychological Association (APA) Code of Ethics and previous research conducted with traumatized populations provide important considerations for ethically and respectfully engaging with individuals who have experienced trauma.

Although it is essential for researchers to inspect their practices critically to minimize potential harm, evidence suggests that asking about trauma may not be as harmful as people fear. Some research even suggests that participants with trauma experiences may report distress, but they also are more likely to report deriving benefits from participating in trauma related research (Decker et al., 2011; Legerski & Bunnel, 2010). Furthermore, when individuals do experience distress from trauma-related research participation, the stress appears to be relatively short in duration (Legerski & Bunnel, 2010). In a meta-analysis that examined adult participant reactions to involvement in trauma research, Jaffe and colleagues (2015) suggest that taking part in trauma-related research can lead to immediate psychological distress. However, this distress tends to be mild to moderate and does not occur at an extreme level. They found that individuals with a history of traumatic experiences or diagnosed PTSD experienced higher levels of distress, especially when interviews were the mode of data collection. However, both written (i.e., survey) and oral (i.e., interview) methods appear to have similar positive outcomes (Jaffee et al., 2015). Participants generally reported the experience to be positive and did not have regrets about engaging in the research, whether or not they experienced trauma in their past (Jaffe et al., 2015).

Despite research that suggests a minimal risk of harm to participants, it is important to consider the ethical obligations and reasonable steps to take as a psychologist and researcher. Regarding the APA code of ethics, three principles in particular standout as especially relevant when engaging in trauma work. The first principle in the APA Principles and Code of Conduct

includes the mandates of psychologists working in the spirit of beneficence and nonmaleficence. In other words, psychologists must work to benefit the client and to minimize the potential harm that may result from the therapeutic or research related interactions and relationships. Another core ethical principle in the APA code germane to this work is integrity. Integrity dictates that psychologists in all settings must honestly reflect on the nature of their work, their motivations for engaging in the work, and the possible ramifications of their actions. Finally, Section 8 (Research and Publication) provides relevant guidelines for ethical research through aspects such as informed consent, inducements, and debriefing.

The present research aims to contribute to the field of school psychology and secondary traumatic stress by gathering information about risk and protective factors that may be associated with STS. While some questions may cause a subset of participants likely low levels of distress, this researcher took steps to minimize the potential for harm (see Methods section). The information gathered in this study can help future educators and leaders better understand STS in the school setting, which may help schools identify better prevention and intervention efforts. Based on the previously reviewed literature, this researcher expects the resulting harm from asking questions related to personal trauma history to be minimal. Participants also received information about STS and resources in an attempt to further minimize potential distress.

Chapter 3: Methods

Research Design

The current study incorporated a quantitative descriptive design using survey research. Researchers often use quantitative descriptive designs when attempting to "help define the existence [of] and delineate characteristics of a particular phenomenon" (Heppner et al., 2008, p. 224). Due to the dearth of research in STS in school personnel, a descriptive design offers an

appropriate method for examining the prevalence of the phenomenon and to explore potential factors that influence the rate of STS the cross-sectional survey design allows respondents to provide information about their experience of STS at the point of data collection.

Participants and Recruitment

Recruitment efforts targeted staff from a subset of 30 schools in a large urban school district in the Midwest receiving level 2- and 3-tiered support for trauma-informed practices (see Table 6 for levels of support description). Table 4 provides an estimate of the sampling frame and response rates based on publicly available data about the make-up of staff at the subset of schools.

Table 4

Sampling Frame and Response Rates

Role	Sample	School Subset	Response Rate (%)
General Education Teacher	101	542	18.63
Special Education Teacher	53	220	24.09
Paraprofessional	44	292	15.4
School Psychologist	10	36	27.78
School Counselor	9	40	22.50
School Social Worker	8	43	18.60

Note. N = 225

The target participants included teaching staff (i.e., general education teachers, special education teachers, and paraprofessionals) and support staff (i.e., school psychologists, counselors, and social workers). Table 5 presents demographic information for the study participants. Table 5 also contains available information for the six professional roles in this study at the district and state for comparison to the district subset (Wisconsin Department of

Public Instruction, 2022). Participants received a recruitment email sent by their principals

inviting them to take part in the study (see Appendix A). Participants were offered a $15 digital

gift card following completion of the survey as a token of appreciation for their time. The study

received approvals from both the Institutional Review Board at the University of Wisconsin-

Milwaukee and the school district research department. A priori power analyses established a

target sample size of 140 participants, but data from 225 school employees was usable for the

current study.

Table 5

Demographic Information for Participants and District/ State Counterparts [a]

Characteristic		Sample N (%)	District N (%)	State N (%)
Gender	Female	186 (83)	(77)	(78)
	Male	37 (16)	(23)	(22)
	Nonbinary	2 (.9)	--	--
Age		195 Mean = 43 years old	--	--
Race[b]	Asian	4 (.02)	(3)	(1)
	Black/ African American	50 (22)	(27)	(3)
	Native American or Alaskan Native	2 (.01)	(0.40)	(0.30)
	Native Hawaiian or other Pacific Islander	1 (.004)	(0)	(0)
	White/ Caucasian	144 (63)	(58)	(92)
	Multiracial or biracial	14 (6)	(0.90)	(0.44)
	Other	13 (6)	--	--
Latinx	Yes	34 (15)	(11)	(3)
Education	High school/ GED/ some college	5 (2)	--	--
	One year degree	1 (.4)	--	--
	Two-year college degree	19 (8)	--	--
	BA/ BS degree	86 (38)	--	--
	MA/ MS/ EdS degree	112 (50)	--	--
	Ph.D/ Ed.D	3 (1)	--	--

Role			
	Regular education teacher	101 (45)	4,344[c]	60,281[c]
	Special education teacher	53 (24)		
Role	Paraprofessional	44 (20)	1,415	12,819
	School psychologist	10 (4)	158	994
	School counselor	9 (4)	106	2,143
	School social worker	8 (4)	182	704
Years of experience	First year	14 (6)	--	--
	Overall for sample	Average: 11.43 Years	--	--
Crisis team	Never	204 (91)	--	--
	Past	16 (7)	--	--
	Current	5 (2)	--	--
School Type[b]	Pre/Kindergarten -5th grade	109 (48)		
	Pre/Kindergarten - 8th grade	24 (11)		
	Pre/Kindergarten - 12th grade	4 (2)		
	6th through 8th grade	12 (5)		
	9th through 12th grade	66 (29)		
	6th through 12th grade	10 (4)		

Note. $N = 225$. All questions in the survey were optional other than the three eligibility screener questions (i.e., over the age of 18, role, school name).

[a] The table displays district and state-level data only for the 6 roles being examined in this study. State and District information was only available for the 2020-2021 school year (Wisconsin Department of Public Instruction, 2022). [b] Some participants identified multiple categories. 0 participants identified as Middle Eastern. [c] District and state-level data report combined regular and special education. [d] Some participants identified multiple school types.

Procedures/ Data Collection

Data collection occurred during the first two weeks of January 2022 through the internet-based survey tool, Qualtrics. Participants were recruited from a subset of 30 schools from a large, urban public school district in the Midwest. The district provides increasingly intensive levels of

support for implementing trauma-informed practices to a subset of 30 schools, as described in

Table 6. A team of six school and outside personnel with a master's degree and prior trauma

training (i.e., school psychologists, social workers, educators) are each assigned a group of 24

schools in a geographical region of the district. The schools fell into one of three tiers (as

described in Table 6). Schools for this study came from the Tier 2 and Tier 3 levels (i.e., trauma

coach cohorts), for 30 schools total in the subset. The model for using trauma coaches for cohorts

of schools began during the 2020-2021 school year. Due to difficulties with beginning

implementation of the cohort support during the beginning of the pandemic, school staff had

received minimal coaching or intervention by the time of data collection. As such, the surveyed

schools are roughly representative of schools in the district.

Table 6

Levels of Trauma Team Support for Each Trauma Team Coach

Tier Level	Number of Schools	Examples of Support Provided by Coach
1	19	a) Provides postvention support in the case of a crisis b) Acts as a contact person to district School Psychology and Allied Health Services manager c) Provide systems level collaboration and support around trauma informed practices
2	4	a) Participate in behavior support meetings b) Provide systems level collaboration and support around trauma informed practices
3	1	a) Participate in all behavior support meetings b) Participate in all Positive Behavior Intervention and Supports Meetings (PBIS) c) Provide 1-on-1 coaching with teachers around trauma informed practices d) Provide systems level collaboration and support around trauma informed practices

Although the schools chosen for this study (i.e., trauma-informed practices cohort) were

part of a convenience sample, district officials selected the cohort of schools to represent the

distribution of schools in the district. A leadership team (i.e., the manager of school psychologists and allied health services, his manager, the manager of school social workers, and the principal and school psychologist of each proposed school) collaboratively chose the subset of schools for the trauma coach cohorts. The main criteria for Tier 3 schools ($k = 6$ schools) were: openness to change, a willingness to consider trauma sensitive strategies, and systems in place within the schools to support coaching and trauma-informed practices change. These schools presented with a range of needs, but they did not receive a systematic assessment of trauma-informed needs to inform selection of the groups. Please see Table 7 outlining the participant school demographics compared to the district and state level demographics. The demographic data is from the 2020-2021 school year, as that was the latest information available at the time of this study.

Table 7

Comparison of Sample Student and School Demographics to District and State Demographics

Variable		Study Sample	District	State
Age Range of School	K3 or K4-5th	14 schools	158 schools total*	420 districts
	K3 or K4-8th	10 schools		
	K3 or K4-12th	2 schools		
	6th- 12th	1 school		
	9th – 12th	3 schools		
Enrollment		13,781	71,510	809,276
Race (%)	American Indian or Alaskan Native	0.42	0.40	1.81
	Asian	5.62	7.90	1.58
	Black or African American	64.44	50.40	1.94
	Hispanic/ Latino	21.24	27.70	7.87
	Native Hawaiian/Other Pacific Islander	0.09	0.10	0.10
	White	4.29	9.90	82.91
	Two or More Races	3.90	3.60	3.52
Disability (%)		22.64	19.60	14.04
Economically Disadvantaged (%)		93.56	86.50	40.19
English Learner (%)		10.83	12.60	2.94
Dept of Public Instruction Overall Accountability Score [a]	1	56.86 (2 stars)	58.1 (3 stars)	71.62 (4 stars)
	2	6 schools	21 schools	
	3	5 schools	29 schools	
	4	16 schools	55 schools	
	5	3 schools	26 schools	
		0 schools	5 schools	

[a] This composite score is based on Priority Area scores (i.e., Student Achievement, School

Growth, Closing Gaps, and On-Track and Postsecondary Readiness) and Student Engagement

Indicators (chronic absenteeism and dropout rates). Scores range from 0 to 100, and they fall into

5 qualitative categories: 1 = fails to meet expectations; 2 = meets few expectations; 3 = meets expectations; 4 = exceeds expectations; 5 = Significantly exceeds expectations.

Participants received a survey link to their work email address, and they were encouraged to complete the survey. To minimize potential harm and to maximize participation rates, the informed consent process included (see Appendix B): (a) providing clear information about the nature of the questions, particularly questions pertaining to personal trauma history; (b) specifying the voluntary nature of participation in the study (i.e., participants can end their involvement at any time, for any reason without fear of adverse consequence); (c) emphasizing participation was anonymous and this researcher would only share information with the district at the group level; and (d) offering an informational handout with resources about STS and supports in the case of distress, such as the Employee Assistance Program (see Appendix C). Finally, participants were offered a $15 digital gift card incentive to show gratitude for their time and participation.

According to the Qualtrics algorithm, the average completion time for this survey was expected to be approximately 15 minutes. After obtaining approval from the dissertation committee, as well as the district and university IRB, participants received the survey link at the beginning of January 2022. This researcher collected an adequate number of usable survey responses (i.e., final $N = 225$) in approximately two weeks, which far exceeded the target number from the a priori power analysis of 140.

Measures

Participants completed a survey that measured information about STS symptoms and potential predictors of STS. Although previous STS research has examined a variety of predictors, the present study examined only the described predictors because of their proposed

predictive association with STS and to allow for sufficient power for the planned regression analysis. The instruments used in this study included the Secondary Traumatic Stress Scale (STSS; Bride et al., 2007), select items from the Professional Quality of Life questionnaire (ProQOL, Stamm, 2010), select items from the Child Welfare Organization Culture Inventory (Westbrook et al., 2009), the Self-Care Assessment for Psychologists (Dorociak et al., 2017), a list of experiences from the Trauma History Screen (Carlson et al., 2011) and the Childhood Experiences Survey (Mersky et al., 2017), and a demographic and experiences survey developed by the researcher (see Table 8). See Appendix D for the complied survey for the present study.

Table 8

Study Variables and Related Measures

Type of Variable	Construct	Related Measure	Citation
Criterion	Secondary Traumatic Stress	a. Secondary Traumatic Stress Scale (full items) b. Professional Quality of Life (select items)	Bride et al., 2007 Stamm, 2010
	Demographics	Author created items	NA
Professional Predictors	Supervisor Support	a. Child Welfare Organization Culture Inventory b. Author created (2 items)	Westbrook et al., 2009
	Colleague Support	a. Self-Care Assessment for Psychologists (1 of 5 subtests) b. Author created (2 items)	Dorociak et al., 2017
	Professional Development	Author created item	NA
	Role	Author created item	NA
Personal Predictors	Self-care	Self-Care Assessment for Psychologists (3 of 5 subtests)	Dorociak et al., 2017
	Perceived Dosage of Student Trauma	Adapted/ taken from previous studies	Cieslak et al., 2013a Borntrager et al., 2012
	Personal Trauma History	a. Trauma History Screen (full items) b. Childhood Experiences Survey (select items)	a. Carlson et al., 2011 b. Mersky et al., 2017
	COVID-19 Experience	Author created items	NA

Secondary Traumatic Stress: Outcome

The main outcome construct in this study was secondary traumatic stress. For research question 1, the Secondary Traumatic Stress Scale was used to obtain quantitative understanding of the percentage of participants who met criteria on this scale so that it could be directly compared with other participant samples. However, for research questions 2 through 4, three items from the Professional Quality of Life Scale were used for additional context related more directly to their work with students. This provides a more contextualized view, and it may offer additional information about functional impairment and impact of STS. The two scales are described in more detail below.

Secondary Traumatic Stress Scale: Dependent Variable. The Secondary Traumatic Stress Scale (STSS; Bride et al., 2004) is a 17-item self-report questionnaire "designed to measure intrusion, avoidance, and arousal symptoms associated with indirect exposure to traumatic events via one's professional relationship with traumatized clients" (p. 27). The STSS aligns with the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders' (DSM-IV; American Psychiatric Association, 1994) conceptualization of Posttraumatic Stress Disorder (PTSD), but the authors used language that reflects indirect exposure through working with clients who have experienced traumatic events. In particular, the 17 items divide into subscales of Intrusion (items 2, 3, 6, 10, 13; e.g., "Reminders of my work with students upset me"), Avoidance (items 1, 5, 7, 9, 12, 14, 17; e.g., "I felt emotionally numb"), and Arousal (items 4, 8, 11, 15, 16; e.g., "I had trouble sleeping"), as well as a total score (Bride et al., 2004). A revision of the STSS to better align with the DSM-5 exists, but the current study did not use the updated version because there were no psychometric properties available.

Respondents reported on the influence their work with traumatized students has on them. They indicated how true each statement was for them in the past seven days using a five point,

Likert-type scale ranging from 1 (never) to 5 (very often). The subscale and total scores are calculated by summing the value of the items for each scale, and the wording of the items reflects a student population (i.e., student rather than client). In keeping with the DSM-IV criteria for PTSD, participants meet criteria for the subscale when they endorse a level of 'occasionally' or higher for at least one item on the Intrusion subscale, at least three items on the Avoidance subscale, or at least two items on the Arousal subscale (Borntrager et al., 2012). Previous research supports adequate reliability of the total and subscales (total scale: $\alpha = 0.93, 0.94$; Intrusion: $\alpha = 0.80, 0.79$; Avoidance: $\alpha = 0.97, 0.85$; Arousal: $\alpha = 0.83, 0.87$) (Bride et al., 2004; Ting et al., 2005). The current participant sample demonstrated adequate reliability (total scale: $\alpha = 0.93$; Intrusion: $\alpha = 0.80$; Avoidance: $\alpha = 0.82$; Arousal: $\alpha = 0.85$). These same studies also provided evidence for adequate validity of the STSS (Bride et al., 2004; Ting et al., 2005). Both sets of authors detailed significant correlations between the STSS and its subscales and each of the convergent variables, and they did not find significant correlations between the scores and the discriminant variables. Confirmatory factor analysis provided support for the three factors identified in the subscales (Bride et al., 2004; Ting et al., 2005).

Select Items from the Professional Quality of Life Scale: Dependent Variable. The Professional Quality of Life Scale (ProQOL) is a 30-item measure that captures information about three constructs: STS, burnout, and compassion satisfaction. All subscales show good or adequate reliability (STS $\alpha = 0.81$, burnout $\alpha = 0.75$, compassion satisfaction $\alpha = 0.88$) (Stamm, 2010). Individuals rate items on a Likert-style scale from 1 (Never) to 5 (Very Often) for the past 30 days. The current study used three of the 10 items from the STS subscale to provide a more robust understanding of the STS experience for the study participants. The items chosen include: (a) "I find it difficult to separate my personal life from my life as an educator"; (b) "I think I

might have been affected by the traumatic stress of those students I educate/ serve"; and (c) "Because of my educating/ serving, I have felt 'on edge' about various things." The three items chosen for this study showed strong reliability with the current sample of participants ($\alpha = 0.87$). For the current study, the criterion variable (i.e., total STS scores) for questions 2 through 4 includes the full number of STSS items and the three ProQOL items. The newly created composite variable showed strong reliability (total STS score: $\alpha = 0.94$).

Select Items from the Child Welfare Organization Culture Inventory: Independent Variable

The full Child Welfare Organization Culture Inventory (CWOCI; Westbrook et al., 2009) is a 64-item measure that examines seven hypothesized dimensions of organizational culture in child welfare agencies: supervisory support, administrative support, professionalism, collegiality, organizational methods, autonomy, and beliefs about parents. This researcher could not find a validated measure of organizational culture in the field of education or in schools, so items from this measure in an adjacent field that also works intensively with children and families comprised the supervisor support variable.

Based on a review of the literature on supervisor support in schools, the study utilized 8 of the full 64 items from the Supervisory Support subscale to represent important aspects of supervisory support in schools. The themes used to guide the item selection include supervisors valuing staff contributions (e.g., "Quality work with and for students is regularly recognized, even if only informally"); caring about staff well-being (e.g., "Supervisors are empathetic to the needs and feelings of staff"); valuing different perspectives and working with diversity (e.g., "Supervisors engage in culturally competent practice"); and creating a supportive climate (e.g., "Supervisors help school personnel when problems arise"). Respondents rate items on a 4-point Likert-type scale (i.e., 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree).

The original supervisory support subscale comprised 20 items, and it accounted for 14.36% of the total item variance for the CWOCI (Westbrook et al., 2009). It showed excellent internal consistency (α = 0.97), and the authors noted that the supervisory support subscale, along with three other CWOCI subscales, had strong enough reliability coefficients and enough items to be used as unidimensional measures. The authors established criterion-related validity using the Intent to Remain Employed- Child Welfare scale (IRE; Ellett, 2000). The supervisory support subscale showed the strongest bivariate correlation with the IRE (r = .45, p < .01). For this study, language on some items shifted to reflect work done in schools (e.g., changed caseworkers to school personnel). The supervisor support items for the current sample showed good internal consistency (α = 0.93).

Self-Care Assessment for Psychologists: Independent Variable

The Self-Care Assessment for Psychologists is a 21-item self-report questionnaire that examines "behaviors or strategies that represent key aspects of personal and professional life" for professional psychologists (Dorociak et al., 2017). It represents one of the first measures that attempts to define and operationalize the concept of professional self-care in a comprehensive and psychometrically established measure (Dorociak et al., 2017). The current study used four of five subscales: Professional Support (5 items; e.g., "I cultivate professional relationships with my colleagues"), Life Balance (4 items; e.g., "I spend time with family or friends"), Cognitive Awareness (4 items; e.g., "I try to be aware of my feelings and needs"), and Daily Balance (3 items; e.g., "I take breaks throughout the workday"). Respondents rate items on a 7-point scale with two anchor points (i.e., 1 = never; 7 = almost always).

Subscale scores are created by adding the items for each factor. The subscales showed adequate reliability: Professional Support (α = 0.85), Life Balance (α = 0.80), Cognitive

Awareness (α = 0.71), and Daily Balance (α = 0.69) (Dorociak et al., 2017). The current sample also showed adequate internal consistency: Professional Support (α = 0.85), Life Balance (α = 0.88), Cognitive Awareness (α = 0.84), and Daily Balance (α = 0.76). A self-care composite score, using the items from the Life Balance, Cognitive Awareness, and Daily Balance subscales, also showed adequate reliability as a composite score (α = 0.82). The peer/colleagues support composite variable consists of the Professional Support items. Authors in the original study established concurrent validity through measures related to self-care because of the lack of empirically validated self-care measures available (i.e., The Perceived Stress Scale; The Satisfaction with Life Scale; The Maslach Burnout Inventory-Human Service Survey). Analysis of significant correlation coefficients between the subscale scores and the aforementioned measures revealed significant correlations in the expected directions. Dorociak and colleagues (2017) also conducted a confirmatory factor analysis, and they concluded that the five-factor solution provided the best fit to the data. The current sample also showed adequate internal consistency for the colleague/ peer support composite scale (α = 0.85).

Personal Trauma History: Independent Variable

To date, personal trauma history remains inconclusive as a predictor of STS. Some researchers have found evidence for the impact of personal trauma history (Bride et al., 2007; Caringi et al., 2015; Nelson-Gardell & Harris, 2003; Rossi et al., 2012); while other have found nonsignificant results for personal trauma history as a predictor (Adams et al., 2008; Borntrager et al., 2012). In the field of STS, authors examine the respondent's personal trauma history in a variety of ways and inquire about a range of child and adult experiences. Lifetime prevalence of trauma history appears to be a more reliable predictor than just recent experiences (Cieslak et al., 2013), and many researchers have asked about a combination of recent and more distant

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experiences. Several studies use author-created survey items, while other researchers use parts of or entire established measures. For example, some studies provide a non-exhaustive list of potentially traumatic experiences and ask respondents to provide a raw number of their types of experiences (i.e., Borntrager et al., 2012; Choi, 2011; Rossi et al., 2012). Kulkarni and colleagues (2013) selected items they judged to be most relevant from the Traumatic Life Event Questionnaire (Kubany et al., 2000) to capture certain adult and childhood experiences. Other authors do not provide a clear explanation of how they measure the construct (Bride et al., 2007; Deighton et al., 2007; Dunkley & Whelan, 2006; Sodeke-Gregson et al., 2013).

To obtain a clearer picture of the potential impact of personal trauma history on STS and to address some of the aforementioned limitations of other studies, this researcher measured the personal trauma history construct using a list of experiences from two psychometrically sound measures: The Trauma History Screen (THS) and the Childhood Experiences Survey (CES). This researcher measured the construct of personal trauma history in this manner to (a) follow past precedents (i.e., Borntrager et al., 2012; Choi, 2011; Rossi et al., 2012), (b) minimize time and emotional burden on participants, and (c) capture the most relevant information. Although the Trauma History Screen and the Childhood Experiences Survey were not used as originally written, information about the original measures provides additional context for the measure. All items used in the current study were coded dichotomously (i.e., yes or no) according to the original design of the measure.

Trauma History Screen. The Trauma History Screen (THS) (Carlson et al., 2011) is a 14-item self-report measure that measures high magnitude stressors (Kilpatrick et al., 1998), traumatic stressors, and persisting posttraumatic distress (Carlson et al., 2011). The THS attempts to fill a need in the field for a brief measure that uses a simple format written at an easy

reading level (i.e., the Flesch-Kincaid Grade Level is 5.5) (Carlson et al., 2011). The structure of the THS includes a gatekeeping question and two parts. First, respondents complete a "yes" or "no" checklist that asks about the occurrence of certain high magnitude stressors. The authors chose these experiences based on consulting previously established measures, theoretical considerations, suggestions by experts, and their own clinical experience. The gatekeeping questions ask whether any of the experiences in Part 1 "really bother you emotionally," which attempts to identify if any experience would constitute a traumatic stressor. Finally, for each experience identified as bothering the respondent, the individual then answers a short series of questions to see if the event may qualify as a persisting posttraumatic distress event. The THS asks about the following experiences: (a) motorized accidents (i.e., car, boat, train or airplane); (b) accidents at work or home; (c) natural disasters (i.e., hurricane, flood, earthquake, tornado, or fire); (d) child or adult physical or sexual assault; (e) being attacked with a weapon; (f) seeing something horrible or being badly scared during military service; (g) sudden death of close family or friend; (h) witnessing someone being badly hurt or killed; (i) abandonment by someone close; or (j) any other sudden event that makes the individual feel scared, helpless, or horrified. Test-retest reliability of the high magnitude stressors ranged from .77-.93 ($p < .001$) (Carlson et al., 2011).

Childhood Experiences Survey. The Childhood Experience Survey (CES) is a 17-item Adverse Childhood Experience (ACE) survey that includes items from the ten traditional ACEs in the literature and seven other ecologically related adverse experiences that may be particularly relevant in low SES populations (Mersky et al., 2017). The items for the eight of the traditional ACEs come from the Behavioral Risk Factor Surveillance System (BRFSS, Centers for Disease Control, 2011). These items include three types of child abuse (physical, sexual, and emotional)

and five types of household dysfunction (substance abuse, mental illness, domestic violence, incarceration/ jail, and divorce/ separation) (Mersky et al., 2017). In addition to the BRFSS based items, the CES includes two types of neglect (emotional and physical, also from the traditional ten ACEs), five other types of household adversity (frequent family financial problems, food insecurity, homelessness, prolonged parental absence, and death of parent or sibling), and two forms of non-familial related adversity (frequent peer victimization and violent crime victimization).

Two recent articles (Mersky et al., 2017; Choi et al., 2020) examined the psychometric properties of the CES. These articles examined the prevalence of both traditional and expanded ACEs, internal consistency, test-retest reliability, concurrent validity, and conducted an exploratory or confirmatory factor analysis with the data. The 17 item indices showed adequate internal consistency reliability ($\alpha = 0.81$) (Mersky et al., 2017). During the exploratory factor analysis, the authors removed parent/ sibling death because of its lack of significant association with the study outcomes or most of the other ACEs (Mersky et al., 2017). Construct validity was supported in both articles through the two (original ACEs) and four (expanded ACEs) factor solution identified as producing the best fit. The two-factor solution includes child maltreatment and household dysfunction, and the four-factor solution includes interpersonal victimization, emotion and physical neglect, probable exposure to extreme poverty, and family loss and separation. The overall 17 ACE index score had excellent test-retest reliability ($ICC = 0.91$), and the four scales had scores in the acceptable range (.67 for neglect through .90 for interpersonal victimization). Mersky and colleagues (2017) found in their regression analysis that all the ACEs (except parent/ sibling death) were individually significantly related to perceived stress. However, using a multivariate model, only peer victimization and violent crime showed

associations with perceived stress, and sexual abuse was the only variable significantly associated in the predicted direction with smoking. Choi and colleagues (2020) also found significant associations with the study outcome variables of depression and anxiety. For the current study, this author removed six items from the CES experience list due to the related experiences already captured by the lifelong THS experiences (i.e., physical abuse, sexual abuse, homelessness, parental absence, parent/ sibling death, violent crime victimization).

Perceived Dosage and Salience of Student Trauma: Independent Variable

Short of an established system for formally assessing ACEs, getting an accurate picture of ACE prevalence can be difficult in schools. Although using proxy variables (e.g., neighborhood violence, SES) can help to provide an estimate for some experiences, for this study it was important to gather information on how school personnel perceive the experiences of their students' level of trauma. Items to measure this construct were modeled after previous studies that also used perception of participants to capture trauma dosage of students and clients (i.e., Alisic et al., 2010; Borntrager et al., 2012; Cieslak et al., 2013).

Items from two previous studies (Borntrager et al., 2012; Cieslak et al., 2013) provided the structure for the perceived dosage and salience of student trauma variables. Based on the same list of traumatic experiences as used in the personal trauma history section (i.e., items from the THS and CES), participants rated three items related to perceived dosage and salience of student trauma. They estimated the proportion of students with whom they work who they believe have experienced traumatic or adverse childhood experiences on a Likert-style scale (i.e., 1 = None; 2 = Less than half; 3 = Half; 4 = More than half; 5 = Almost all). They were also asked how often they hear about student trauma (i.e., 1 = Never; 2 = Several times a year; 3 = Once a month; 4 = Several times a month; 5 = Once a week; 6 = Several times a week; 7 = Every

day). Finally, participants indicated how strongly they agree their work addresses issues related to student trauma (i.e., 1 = Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; 5 = Strongly agree). This final item was examined descriptively, but it was not included in the dosage factor after examining reliability when including ($\alpha = 0.58$) and excluding ($\alpha = 0.77$) the item in the scale.

Demographic and Experience Questionnaire: Covariate and Independent Variables

Participants also provided information about relevant demographic information, such as age, race/ ethnicity, gender, and highest level of education. In addition, they reported their current role, years of experience, age level of current students (e.g., Kindergarten through 5th grade, 6th through 8th grade, 9th through 12th grade), and whether they have served on the district crisis team. Participants indicated their level of experience with trauma-informed practices training [i.e., 0 = None; 1 = Personal research only (e.g., independent research, reading, done on own time, no formal training); 2 = District or Department of Public Instruction (DPI) training modules only; 3 = District or DPI training modules plus additional formal or informal training (e.g., additional workshops, trainings, classes, or independent research)]. Finally, due to potentially large disruptions in personal and professional life from the unprecedented global pandemic, participants answered two general items about how the COVID-19 pandemic has impacted their emotions or mental health during the 2020-2021 and 2021-2022 academic years (i.e., 1 = Not at all; 2 = A little; 3 = Somewhat/ moderate amount; 4 = A lot; 5 = Very severely).

Analyses Plan

This researcher used descriptive and inferential analyses to examine the survey data related to demographics, STS, and various experiences of the sample. All analyses were run using the IBM SPSS 28 statistics software. In addition to the descriptive and inferential analysis,

Cronbach's alpha provided reliability or internal consistency calculations for the measures with changes in their original wording or format, as well as the composite scores created for this study. Internal consistency reliability is a commonly used method that examines "the degree to which the various parts of the test are consistent with each other" (Furr, 2018, p. 493). High Cronbach's alpha values indicate the factors are likely measuring the intended construct appropriately. In all inferential analyses, a total secondary traumatic stress score (i.e., STSS and select items from the ProQOL) served as the outcome/ dependent variable in this study. The individual predictor variables served as the independent variables. To minimize errors, this researcher screened and cleaned the data, as well as checked that the models met all required statistical assumptions prior to conducting any statistical analysis (see Appendix E for visual representations of normality and homoscedasticity).

Approach to Outliers, Errors, and Missing Data

The data were examined for errors, outliers, and missing data. 270 participants started the survey, but 225 participants provided usable data for analyses. This author deleted 10 participants because they entered no data, 25 participants because they did not meet study eligibility criteria on the three screener items, 9 participants because they only completed the demographic section, and 1 participant as an outlier (see description below). For individual variables, listwise complete data ranged from 0 participants with missing data (e.g., current or past participation on the crisis team) to 14 participants with missing data (i.e., total trauma score). For demographic information, the percentage of missingness of data were highest for age, with 13.3% of the participants opting not to provide that information. For the professional set of predictors, the percentage of missing data is as follows: supervisor support = 1.3%; peer support = 0.9%; role = 0%; and professional development = 1.3%. For the set of personal predictors, the

percentage of missing data is as follows: personal trauma history: 6.2%; dosage: 2.2%; COVID-19: 1.8%; and self-care: 2.7%. The total percentage of data for the final outcome variable of total STS was 3.1%. To analyze the patterns of missing data, chi-square tests examined whether gender, race, or role were associated with missing data. These tests revealed there were no significant associations between these variables and patterns of missingness. An independent t-test examined the patterns of missing data in relation to years of experience, and the analysis revealed no significant patterns with the missingness of data.

Due to the sensitive and personal nature of some questions (e.g., personal trauma history, COVID-19 experience), imputation was not an appropriate approach. This study had adequate power from the relatively high number of participants ($N = 225$) and the relatively low amount of missing data. This investigator therefore used listwise deletion for missing data to approach the analyses conservatively. Listwise deletion of data was used such that if participants were missing data for an item, that participant was removed from those particular analyses. One outlier was removed from the data because inspection of the case revealed that the participant answered the first option for almost every item on the survey and appeared to put random numbers for items that required participant provided answers (e.g., answered "3" for age).

Preliminary Analyses

This researcher performed descriptive analyses (e.g., frequencies, mean, percentages) on the demographic (i.e., age, race/ ethnicity, gender, level of education, role) and experiential (i.e., years of experience in role, age range of students, participation on the district crisis team, COVID-19 impact) data gathered. Based on prior research, the researcher hypothesized the following variables to be covariates prior to data collection: age, years of experience, gender, and race. A series of analyses were performed following data collection to determine appropriate

covariates and general associations between variables. Correlational analyses inspected

relationships between the continuous predictors (i.e., supervisor support, peer support, total

personal trauma, dosage of student trauma, perceived COVID-19 impact, self-care score) and the

outcome variable (i.e., STS). Independent *t* tests analyze the relationships between dichotomous

variables (i.e., gender, crisis team participation, first year status) and STS. One-way Analysis of

Variances (ANOVAs) examined significant differences for categorical predictor variables with

more than two levels and the continuous STS variable. Finally, a series of unadjusted (i.e.,

individual predictors with no other covariates or predictors accounted for) and adjusted (i.e.,

covariates as a group) multiple regression analyses were run to determine the most appropriate

variables to include as covariates.

Research Question 1 (RQ 1)

Descriptive analyses addressed RQ 1 (What is the prevalence of STS for professionals in

a large urban public school district?). Other key experiential information for the staff in the

sample was also documented (e.g., perception of student trauma and their role to address it,

COVID-19 impact, self-care practices). Demographic information for the school subset, district,

and state provides information for the generalizability of the statistical conclusions from this

study. Demographic and experiential results exist in both table and narrative form, as

appropriate.

Research Questions 2 and 3 (RQ 2 and RQ 3)

This researcher conducted multiple regression analyses for the remaining research

questions. First, this researcher checked to ensure the assumptions for multiple regression were

adequately met (see Appendix E). The main assumptions include the following: correct

identification of the form of the relationship between the predictors and outcome variables;

correct identification of the predictors; no measurement error in the predictors; constant variance of the residuals (homoscedasticity); independence of the residuals (i.e., no multicollinearity); and normality of the residuals (Cohen et al., 2003). Next, a series of hierarchical multiple regressions were used to determine how much variance the predictor variables explain in the dependent variable (i.e., STS score).

The first set of multiple regression analyses explored whether and to what degree the professional factors predict the rate of STS (RQ 2). After checking the assumptions, inferential statistics were used to examine the significance of adding each predictor and for the professional model as a whole. The professional factors include supervisory support, peer/ colleague support, trauma-informed professional development, and professional role. Hierarchical multiple regression evaluated the sequential addition of predictors. Hierarchical multiple regression provided estimates for both how much variance in STS was explained by the professional factors as a group, and the predictor variable steps' (i.e., step 1 was the covariate set, subsequent steps were the predictor variables) unique contributions over and above the other predictors to the variance of the STS score as they were added to the model (Cohen et al., 2003; Pallant, 2016). For each predictor, the R^2 provides an estimate for the amount of unique contribution the variable step had on the criterion STS score. T tests then determine if each variable step reached the significance level of $p < .05$. The results from this inferential test indicated whether each variable step made a significant, unique contribution over and above the other predictors. Similarly, the R^2 and the significance level ($p < .05$) from an F test were examined for the model as a whole. This analysis provided evidence for the most parsimonious model. The sequential model for testing the professional factors was as follows:

$$\hat{Y} = B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_0$$

X_1 = covariate set
X_2 = supervisory support
X_3 = peer/ colleague support
X_4 = role
X_5 = trauma-informed practices professional development
B_i = regression coefficient associated with X_i
B_0 = regression constant using all four predictors
$\hat{Y}$ = the value of the STS predicted from the regression equation

This researcher performed similar analyses for the next research question. RQ 3 examined whether and the degree to which the covariate set and personal factors predicted the rate of STS using the same procedure as described for RQ 2. The personal factors included personal trauma history, perceived dosage of student trauma, subjective impact of the COVID-19 pandemic, and a self-care score. The sequential model testing for the personal factors was as follows:

$$\hat{Y} = B_1X_1 + B_6X_6 + B_7X_7 + B_8X_8 + B_0$$

X_1 = covariate set
X_6 = personal trauma history
X_7 = perceived dosage of student trauma
X_8 = subjective impact of COVID-19 pandemic
X_9 = self-care
B_i = regression coefficient associated with X_i
B_0 = regression constant using all four predictors
$\hat{Y}$ = the value of the STS predicted from the regression equation

Research Question 4 (RQ 4)

Finally, to address RQ 4 this researcher examined whether the significant professional (RQ 2) and personal (RQ 3) predictors that may serve as protective factors moderated the relationship between significant personal risk factors (RQ 3) and STS score. Moderation examines how the relationship between a predictor (X) and outcome (Y) variable changes as a function of a third variable (Z). In other words, does a third variable (e.g., supervisor support or self-care) impact the relationship between a risk factor and the outcome variable?

Figure 1

Example of a Potential Moderation Relationship
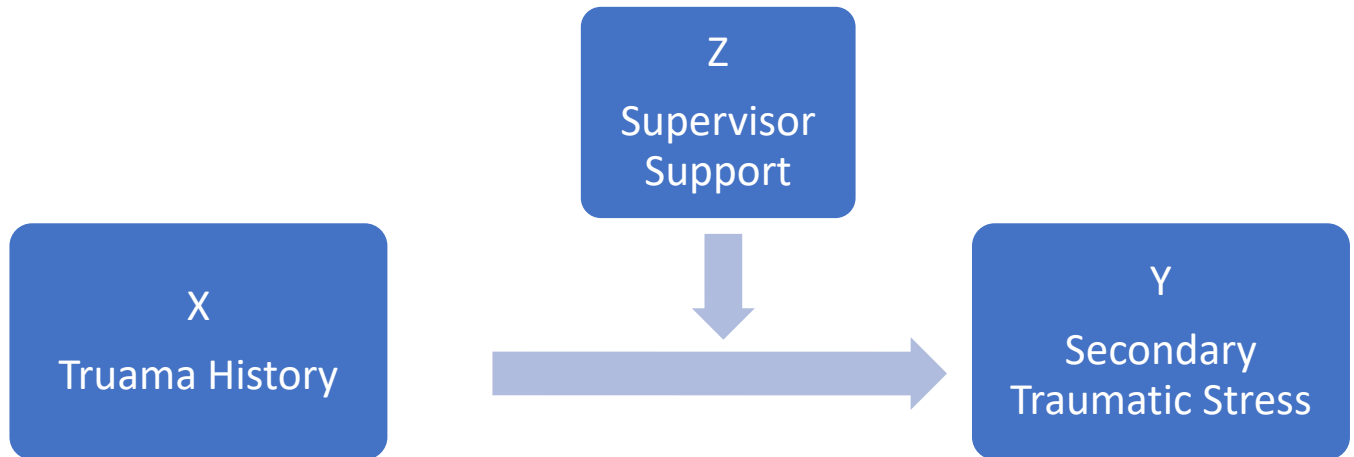
This method should help researchers and professionals gain a better understanding of the most salient predictors that may contribute to the development and possible amelioration of STS in school-based professionals (RQ 4). More specifically, such knowledge can be helpful for school leaders to develop prevention or intervention efforts to help mitigate the negative consequences of STS.

Chapter 4: Results

The following section presents the results for the current study. Results are organized in the following order: (a) preliminary analyses (i.e., reliability of the scales, measures of association between the variables, and covariate analyses) and descriptives (i.e., experiential information, demographic information); (b) prevalence rates for RQ 1; (c) hierarchical multiple regression for RQ 2; (d) hierarchical multiple regression for RQ 3; and (e) moderation analysis

for RQ 4. Assumptions for all analyses were checked prior to running (see Appendix E). In general, higher STS scores indicate a greater number of symptoms; therefore, lower STS scores and predictors that have an inverse relationship with STS are more desirable. The results of this study are presented in accordance with the research questions established during the design phase of the study.

Preliminary Analyses

Appropriate items from subscales created composite scores for a selection of predictor variables and the outcome variable. As described in the Methods section, previously established measures served as the basis for most variables. Table 9 contains the reliabilities of the composite variables with the current sample. Correlations above .70, as measured by the Cronbach's alpha coefficient, are generally considered sufficient (Cortina, 1993). The scales for the present study all had alpha levels at .77 or above, which suggests adequate internal consistency to use in analyses.

Table 9

Reliability for Scales and Composite Variables

Variable (Type of Predictor)	*n*	Number of Items	Sample Reliability A
Secondary Traumatic Stress (STS) Total (Outcome)	218	20	.938
Supervisor Support (Professional)	224	8	.928
Peer Support (Professional)	223	6	.856
Perceived Dosage of Student Trauma (Personal)	220	2	.767
Subjective Impact of COVID-19 (Personal)	221	2	.845
Self-Care Total (Personal)	220	11	.839

  Correlations between the continuous variables (i.e., predictors and outcome variable) provide information about the degree of association among the variables. A strong association between the independent variables may indicate multicollinearity, which will provide biased estimates from the multiple regression analyses. Table 10 displays the relationships between the variables using the Pearson product-moment correlation coefficients. Based on Cohen (1988, pp. 79-81), these results suggest low ($.10 < r < .29$) to moderate ($.30 < r < .49$) relationships between the variables. Moderate correlations between the independent variables that were significant at the $p < .05$ level included: Perceived COVID-19 Impact and Total Personal Trauma ($r = .31$) and Self-Care and Peer Support ($r = .39$). Cohen (2003) suggests that correlations between independent variables above the .70 level may indicate multicollinearity. All examined

correlations were below the .70 level, suggesting multicollinearity does not appear to be present among the variables in this sample. The outcome variable, Total STS, was moderately correlated at the $p < .05$ level with Total Personal Trauma ($r = .40$), Dosage of Student Trauma ($r = .44$), Perceived COVID-19 Impact ($r = .31$), and Self-Care ($r = -.38$). This finding provides evidence for a possible association between these independent variables and the outcome variable (STS) and suggests the need for further investigations of these relationships through multiple regression analyses.

Table 10

Correlations for Continuous Predictors and Outcome Variable

Variable	*M*	SD	1	2	3	4	5	6	7
1. Total STS	47.37	15.53	1.00						
2. Supervisor Support	22.32	5.12	-.25**	1.00					
3. Peer Support	30.70	7.45	-.09	.20**	1.00				
4. Total Personal Trauma	6.30	4.66	.40**	-.17*	-.04	1.00			
5. Dosage of Student Trauma	8.07	2.75	.44**	-.20**	.02	.17*	1.00		
6. Perceived COVID-19 Impact	7.00	2.08	.31**	-.12	.02	.30**	.22**	1.00	
7. Self-Care	57.05	9.56	-.38**	.23**	.39**	-.18*	-.12	-.08	1.00

Note. * $p < .05$. ** $p < .01$; $n = 198$.

Independent *t* tests compare the STS mean scores based on the potential categorical covariate variables (i.e., gender, crisis team participation, and first year status). Table 11 shows the results from these analyses, revealing that two variables (i.e., gender and crisis team participation) had significant mean differences between groups (e.g., the mean score for participants in the "female" group was significantly higher than in the "other" group). These

significant mean differences indicate that participants identifying in the following groups had significantly higher mean STS scores: females and past or present participation on the crisis team. Differences in scores based on these characteristics contributed to a meaningful difference in STS scores, which provides evidence to suggest that including them as covariates may be appropriate. Please note there are large differences in sample sizes, but equal variances are assumed.

Table 11

Results of T Test for Categorical Covariate and Outcome Variables

Variable	Groups	*M*	*SD*	*df*	*T*	*p*
Gender	Female n = 180	48.34	14.95	216	2.02	.045
	Other n = 38	42.79	17.48			
Crisis Team	Never n = 200	46.72	15.11	216	-2.08	.039
	Past/ Present n = 18	54.61	18.57			
First year	> First year n = 205	47.85	15.60	216	1.81	.071
	First Year n = 13	38.85	12.48			

Note. Two-tailed tests, assuming equal variances.

One-way ANOVAs examined the impact of categorical predictor variables (i.e., race, role, and professional development) on STS. Significant differences based on membership in different categories may suggest the need to control for these effects as covariates or predictors.

As shown in Table 12, there are mean differences based on race, role, and level of trauma informed practices professional development. Participants who identified as Black or African American ($M = 41.63$) had lower levels of STS compared to those identifying in the category of white (49.28, $p = .009$). Differences between the other races were not statistically significant. Paraprofessionals ($M = 41.30$) had lower levels of STS compared with special education teachers (49.83, $p = .043$). Differences between the other roles were not statistically significant. Significant differences were not found for participants who reported varying levels of trauma informed professional development. These results suggest the need for further investigation of race as a covariate. Role and trauma informed practices professional development are predictor variables in research question 2.

Table 12

Results of One-way ANOVA for Categorical Predictor and Outcome Variables

Variable	Groups	*M*	*SD*	*df*	F	*p*
Race	White *n* = 138	49.28	14.55			
	Black/ African American *n* = 48	41.63	15.42	(2, 213)	4.15	.013
	Other *n* = 30	47.47	18.46			
Role	General Education *n* = 99	48.46	16.15			
	Special Education *n* = 52	49.83	13.87	(3, 214)	2.76	.043
	Paraprofessionals *n* = 41	41.29	17.04			
	Support Staff *n* = 26	47.89	11.61			
Level of Trauma Informed Practices Professional Development	None *n* = 11	35.55	13.41			
	Personal Research Only *n* = 18	51.22	19.22			
	District/ State Modules Only *n* = 88	47.66	15.36	(3, 211)	2.64	.050
	District/State Modules PLUS Additional Training *n* = 98	48.14	14.71			

Note. Equal variances assumed.

Covariate Analysis

Based on the preliminary analyses (i.e., correlations, *t* tests, and ANOVAs), a series of unadjusted (i.e., individual predictors with no other covariates or predictors accounted for) models using standard multiple regression analyses determined appropriate covariates to include in the full models. These analyses suggest the following variables should be examined in an adjusted model as a covariate set: gender, race (Black/ African American), education (2-year degree or less), and crisis team participation. Table 13 shows the results of these analyses.

Table 13

Results of Unadjusted and Adjusted Covariate Analysis

	Variable	Levels	t	*p*	Model Adjusted R^2	F	Sig level
Unadjusted	Age	-	-1.28	.203	.003	1.63	.203
	Race[a]	AA/ Black	-2.88	.004	.028	4.15	.017
		Other[c]	-0.51	.613			
	Gender[b]		-2.02	.045	.014	4.07	.045
	Education[c]	<= 2-year degree	-3.42	<.001	.045	6.13	.003
		Grad degree	-.46	.645			
	Years of experiences		0.273	.785	-.004	.074	.785
	First year status[d]		-1.81	.071	.010	3.28	.071
	Crisis team[e]		2.08	.039	.015	4.33	.039
Adjusted	Covariate Set Final	Race (AA/B)	-2.40	.018	.091	6.40	<.001
		Gender	-2.04	.042			
		Education (<= 2 years)	-2.45	.15			
		Crisis team	1.96	.052			

Note.[a] Reference group = white. [b] Reference group = female. [c] Reference group = bachelor degree. [d] Reference group = Not in first year of role. [e] Reference group = No current or past participation on crisis team.

These variables were then used in a standard multiple regression analyses to examine the statistical significance of the unique contribution of the variables (Table 14). As a set, these covariates explain 10.9% of the variance in STS score (i.e., R^2).

Table 14

Results of Standard Multiple Regression Analysis for Covariate Set

Variable	Unstandardized B	SE	β	t	p
Constant	50.17	1.36		36.81	<.001
Gender[a]	-5.58	2.70	-.14	-2.06	.040
Race (Black/ AA)[b]	-6.04	2.61	-.16	-2.32	.021
Education (2-year degree or less)[c]	-7.08	4.41	-.14	-1.61	.110
Crisis Team[d]	7.08	3.69	.13	1.92	.056

Note. [a] Female = 0, Male/ nonbinary = 1. [b] White = 0, Black/ African American = 1. [c] Bachelor Level = 0, 2-year degree or less = 1. [d] No crisis team experience = 0, Current/ past crisis team experience = 1.

Descriptive Analyses

Descriptive analyses for various experiential variables provide context for the sample. These results include (a) perceptions of the impact of student trauma (Table 15), and (b) other stressors (Table 16).

Perceptions of the Impact of Student Trauma

Participants provided information about their perceptions of how levels of student trauma impact their work. Table 15 presents the data about these levels. Items include how often they hear about student trauma (i.e., from "Never" to "Everyday"), and an item describing the proportion of the student population they believe to be traumatized (i.e., "What proportion of

students that you directly work with in your current role do you believe have experienced traumatic or adverse childhood experiences?"). These two items comprise the "perceived dosage" predictor score. A third item supplies additional context about the degree to which staff perceive their work to be related to student trauma (i.e., "How strongly do you agree that your work addresses issues related to student trauma?"). However, reliability testing revealed the third item may represent a different underlying construct. Participants endorsed a high level of trauma-informed practices training, including a large proportion of people who sought out training and information on their own time (54%).

Table 15

Experiential Information for Participants

Characteristic		Sample n (%)	Mean	Standard Deviation
Affected by student trauma	Never	47 (20.8)		
	Rarely	48 (21.2)		
	Sometimes	70 (31.0)	2.73[a]	1.22
	Often	42 (18.6)		
	Very Often	19 (8.4)		
Work addresses student trauma	Strongly Disagree	18 (8.1)		
	Somewhat Disagree	28 (12.6)		
	Neither Agree nor Disagree	39 (17.6)	3.55[b]	1.20
	Somewhat Agree	87 (39.2)		
	Strongly Agree	50 (22.5)		
Perceived proportion of student trauma	None	9 (4.1)		
	Less than half	37 (16.7)		
	Approximately half	41 (18.6)	3.63[c]	1.17
	More than half	74 (33.5)		
	Almost all	60 (27.1)		
Level of Trauma Informed Practices Professional Development	None	12 (5.4)		
	Personal research only (e.g., done on own time, independent, no formal training)	18 (8.1)		
	District/ state modules only	90 (40.5)	3.27[d]	.829
	District/ state modules plus additional training (formal or personal research)	102 (45.9)		

Note. [a] Mean fell between rarely and sometimes. [b] Mean fell between neither agree nor disagree and somewhat agree. [c] Mean fell between approximately half and more than half. [d] Mean fell between district/ state modules only and modules plus additional training.

Other Stressors

Participants also provided information about certain stressors in their lives and the degree to which they have addressed the stressors. The global COVID-19 pandemic has had a large

impact on educational systems and society. Therefore, it was important to capture the influence

that the pandemic had on individuals in the study. Two items explored how participants

perceived the COVID-19 pandemic impacting their emotions or mental health during the current

(2021-2022) and previous (2020-2021) school year. The descriptive results are presented in

Table 16 below.

Table 16

Other Stressors

Characteristic		Sample n (%)	Mean	Standard Deviation
COVID-19 2020-2021 Academic Year	Not at all	14 (6.3)		
	A little	21 (9.5)		
	Somewhat/ moderate amount	57 (25.8)	3.60[a]	1.14
	A lot	76 (34.4)		
	Very severely	53 (24.0)		
COVID-19 2021-2022 Academic Year	Not at all	13 (5.9)		
	A little	34 (15.3)		
	Somewhat/ moderate amount	64 (28.3)	3.39[b]	1.11
	A lot	75 (33.8)		
	Very severely	36 (16.2)		
Total Trauma Score		212 Range: 0-20	6.35	4.70
Resolved Trauma Impact	1 (Not at all)	19 (10.5)		
	2	33 (18.2)		
	3	42 (23.2)	3.20	1.18
	4	66 (36.5)		
	5 (A lot)	21 (11.6)		
How Addressed Trauma Impact [c]	Have not addressed, not impaired	43 (12.6)		
	Have not addressed, am impaired	12 (3.5)		
	Therapy/ mental health treatment	100 (29.4)		
	Talking with trusted friends/ family	154 (45.3)	-	-
	Obtained legal help	4 (1.2)		
	Obtained help for health/ physical impairment	20 (5.9)		
	Other	7 (2.0)		

Note. ᵃ Mean fell between somewhat/ moderate amount and a lot. ᵇ Mean fell between somewhat/

moderate amount and a lot. ᶜ Some respondents indicated multiple strategies. Participants

provided 340 strategy responses.

Research Question 1 (RQ 1)

Research question 1 sought to document the prevalence rate of STS for educational

professionals working in a large urban public school district. For the purposes of this research

question, the established criteria for STS for the Secondary Traumatic Stress Scale (STSS) were

used to establish the prevalence rate. Participants met full criteria for STS by endorsing a level of

'Occasionally' or higher for at least one item on the Intrusion subscale, at least three items on the

Avoidance subscale, and at least two items on the Arousal subscale (Borntrager et al., 2012).

Table 17 displays the percentages of the sample that met full criteria for STS, as well as

subclinical levels (i.e., met criteria in one or two areas rather than in all three required areas).

Overall, 41.2% of the sample met full STS criteria. Table 17 also provides the percentage of the

sample that met criteria in each individual area. Meeting criteria for Intrusion symptoms was

most common. 82.7% of respondents rated one item on the Intrusion subscale at a level of

"Occasionally" or higher, which meets criteria on this subscale. Based on results from prior

studies, Hypothesis 1 predicted that approximately 40% of the sample would meet criteria for

STS as measured by the STSS instrument, which was supported through the data with the current

sample. The STSS is not diagnostic, but it can provide important context about symptoms

individuals may be experiencing.

Table 17

Prevalence of STS and Subclinical Symptoms

Impact of STS	Percentage

Full STS	41.2
Met criteria in 2 areas only	17.7
Met criteria in 1 area only	28.3
Met criteria in 0 areas	12.8
Met criteria: Intrusion	82.7
Met criteria: Avoidance	44.7
Met criteria: Arousal	59.7

Note. N = 225

RQ 1 used the STSS criteria in order to use established criteria and for the ability to compare prevalence rates with previous studies. It should be noted, however, that the outcome variable for RQ 2 and RQ 3 was a more complete composite score created by combining the STSS items with the three items from the ProQOL scale.

Research Question 2 (RQ 2)

The second research question examined the extent to which a set of professional factors (i.e., supervisory support, peer/colleague support, trauma-informed practices professional development, role) predicted the rate of STS in the sample, while controlling for gender, race (Black/ African American), education (2-year degree or less), and crisis team participation. Table 18 presents the results of the hierarchical multiple regression analysis. After controlling for the covariates, there was a significant change in R^2 with the addition of supervisor support in step 2 [$F(5,205) = 6.43, p < .001; R^2 = .136$, Adjusted $R^2 = .115, \Delta R^2 = .035, p = .004$], but there was but there was no significant change in R^2 in steps 3 5 after the addition of peer support, role, or trauma-informed practices professional development. In other words, the model with the covariates and supervisor support accounted for approximately 14% (12% adjusted) of the variance in STS scores in the sample and adding the other predictors did not account for

significantly more of the variance. In the full model, supervisor support was the only predictor that uniquely and significantly contributed to STS score after accounting for the effect of the covariates and other predictor variables. Higher levels of supervisor support are associated with lower levels of STS ($\beta = -.19$, $p = .004$).

Table 18

Results of Hierarchical Multiple Regression Analysis for Professional Set

Variable	Unstandardized B	SE	β	R^2	ΔR^2
Step 1				.10	.10***
Constant	50.00***	1.33			
Gender	-5.70*	2.73	-0.14		
Race (Black/AA)	-6.07*	2.69	-0.16		
Education (2-year degree or less)	-8.17*	3.83	-0.15		
Crisis Team	7.60*	3.81	0.13		
Step 2				.14	.035*
Constant	62.84***	4.633			
Gender	-5.681*	2.679	-0.14		
Race (Black/AA)	-6.01*	2.643	-0.16		
Education (2-year degree or less)	-7.13	3.776	-0.13		
Crisis Team	6.74	3.752	0.12		
Supervisor Support	-0.58**	.201	-0.19		
Step 3				.14	.005
Constant	66.93***	5.91			
Gender	-6.29*	2.73	-0.16		
Race (Black/AA)	-5.97*	2.64	-0.16		
Education (2-year degree or less)	-6.95	3.78	-0.12		
Crisis Team	7.03	3.76	0.12		
Supervisor Support	-0.54**	0.20	-0.17		
Peer Support	-0.16	0.14	-0.08		
Step 4				.14	.002
Constant	66.73***	6.06			
Gender	-6.42*	2.76	-0.16		
Race (Black/AA)	-5.82*	2.69	-0.15		
Education (2-year degree or less)	-5.53	4.54	-0.10		
Crisis Team	7.23	3.85	0.13		
Supervisor Support	-.52*	.21	-0.17		
Peer Support	-.17	.15	-0.08		
Role (Sped)	.73	2.62	0.02		
(Para)	-1.84	3.51	-0.05		

	B	SE	β	R^2	ΔR^2
(Support Staff)	-.10	3.40	-0.02		
Step 5				.15	.003
Constant	63.86***	7.06			
Gender	-5.91*	2.83	-0.15		
Race (Black/AA)	-5.72*	2.70	-0.15		
Education (2-year degree or less)	-5.38	4.55	-0.10		
Crisis Team	7.09	3.86	0.12		
Supervisor Support	-.54*	0.21	-0.18		
Peer Support	-.17	0.15	-0.08		
Role (Sped)	.44	2.65	0.01		
(Para)	-1.72	3.51	-0.04		
(Support Staff)	-1.46	3.45	-0.03		
Trauma Informed PD	1.06	1.33	0.06		

Note. $n = 211$. *$p < .05$. **$p < .01$. ***$p < .001$

Research Question 3 (RQ 3)

The third research question examined the extent to which a set of personal factors (i.e., personal trauma history, perceived dosage of student trauma, subjective impact of the COVID-19 pandemic, and self-care) predicted the rate of STS in the sample, while controlling for gender, race (Black/ African American), education (2-year degree or less), and crisis team participation. Table 19 presents the results of the hierarchical multiple regression analysis. The overall regression model at the final step was significant [$F(8,188) = 16.92$, $p < .001$) with a medium effect size ($R^2 = .419$, Adjusted $R^2 = .394$, $p < .001$), and there was a significant change in R^2 for the model with the addition of the predictor at each subsequent step (total trauma score: $R^2 = .278$, Adjusted $R^2 = .259$, $\Delta R^2 = .172$, $p < .001$; perceived dosage: $R^2 = .336$, Adjusted $R^2 = .315$, $\Delta R^2 = .059$, $p < .001$; Total COVID Score: $R^2 = .355$, Adjusted $R^2 = .332$, $\Delta R^2 = .019$, $p = .019$; self-care: $R^2 = .419$, Adjusted $R^2 = .394$, $\Delta R^2 = .063$, $p < .001$). In other words, the model with the covariates and all personal predictors accounted for approximately 42% (39% adjusted) of the variance in STS scores in the sample. In the full model, the addition of every predictor uniquely and significantly contributed to STS score after accounting for the effect of the

covariates and other predictor variables. Higher scores on the total personal trauma history, the

perceived dosage of student trauma, and the subjective personal impact of the COVID-19

pandemic may be risk factors for higher levels of STS, as indicated by their association with

higher STS score. Higher self-care scores may act as a protective factor, such that higher self-

care scores tended to be associated with lower STS scores.

Table 19

Results of Hierarchical Multiple Regression Analysis for Personal Set

Variable	Unstandardized B	SE	β	R^2	ΔR^2
Step 1				.11	.11***
Constant	49.68***	1.361			
Gender	-4.53	2.73	-0.12		
Race (Black/AA)	-6.41*	2.73	-0.17		
Education (2-year degree or less)	-9.75**	3.68	-0.19		
Crisis Team	4.98	4.24	0.08		
Step 2				.28	.17***
Constant	40.67***	1.81			
Gender	-1.48	2.50	-0.04		
Race (Black/AA)	-7.97*	2.47	-0.21		
Education (2-year degree or less)	-10.01	3.32	-0.20		
Crisis Team	5.94	3.82	0.10		
Total Trauma Score	1.40***	0.21	0.43		
Step 3				.34	.06***
Constant	28.52***	3.44			
Gender	-1.13	2.40	-0.03		
Race (Black/AA)	-5.31*	2.46	-0.14		
Education (2-year degree or less)	-6.45	3.31	-0.13		
Crisis Team	2.41	3.78	0.03		
Total Trauma Score	1.21***	0.21	0.37		
Perceived Dosage	1.56***	0.38	0.28		
Step 4				.36	.02*
Constant	22.88***	4.15			
Gender	-.84	2.38	-0.02		
Race (Black/AA)	-5.54*	2.44	-0.15		
Education (2-year degree or less)	-6.33	3.27	-0.12		
Crisis Team	2.78	3.73	0.05		
Total Trauma Score	1.09***	0.21	0.33		
Perceived Dosage	1.41***	0.38	0.25		

Total COVID Score	1.10*	0.46	0.15		
Step 5				.42	.06***
Constant	48.60***	6.93			
Gender	-.94	2.27	-0.02		
Race (Black/AA)	-5.12*	2.32	-0.14		
Education (2-year degree or less)	-4.42	3.14	-0.09		
Crisis Team	2.77	3.56	0.05		
Total Trauma Score	.93***	0.20	0.28		
Perceived Dosage	1.37***	0.37	0.24		
Total COVID Score	1.06*	0.44	0.14		
Self-Care Score	-.43***	0.10	-0.26		

Note. n = 197. *p* < .05. ***p* < .01. ****p* < .001

Research Question 4 (RQ 4)

Research question 4 further explored the significant factors from RQ 2 and RQ 3 (i.e.,
supervisor support and self-care) that had an inverse relationship with STS scores. Research
question 4 sought to answer whether supervisor support and self-care moderated the relationship
between the personal risk factors (i.e., trauma history, perceived dosage, and COVID-19) and
STS after controlling for the covariates. Table 20 presents the results of the moderation analysis
with supervisor support scores. Table 23 presents the results of the moderation analysis with self-
care scores.

Table 20

Results of Moderation Analysis with Supervisor Support

Variable	Unstandardized B	SE	β	R^2	ΔR^2
Step 2: Supervisor Support x Trauma History[a]				.29	.19***
Constant	49.51***	1.24			
Gender	-1.84	2.53	-.05		
Race (Black/AA)	-7.54**	2.50	-.20		
Education (2-year degree or less)	-8.10*	3.43	-.16		
Crisis Team	6.77	3.64	.11		
Supervisor Support	-.39*	.20	-.13		
Trauma History	1.38***	.21	.41		
Supervisor Support x Trauma History	.04	.04	.06		

	B	SE	β	R^2	ΔR^2
Step 2: Supervisor Support x Dosage[b]				.28	.16***
Constant	48.26***	1.24			
Gender	-4.26	2.48	-.11		
Race (Black/AA)	-2.98	2.53	-.08		
Education (2-year degree or less)	-5.64	3.61	-.10		
Crisis Team	3.48	3.62	.06		
Supervisor Support	-.48*	.19	-.15		
Perceived Dosage	1.75***	.38	.31		
Supervisor Support x Perceived Dosage	-.19**	.07	-.17		
Step 2: Supervisor Support x COVID-19[c]				.24	.11***
Constant	49.46***	1.26			
Gender	-3.89	2.59	-.10		
Race (Black/AA)	-6.18*	2.55	-.16		
Education (2-year degree or less)	-6.94	3.56	-.13		
Crisis Team	7.23	3.69	.12		
Supervisor Support	-.51*	.20	-.17		
COVID-19	2.13***	.48	.28		
Supervisor Support x COVID-19	.03	.07	.02		

Note. *$p < .05$. **$p < .01$. ***$p < .001$. All continuous predictor variables and interactions were mean centered. [a] $n = 201$. [b] $n = 209$. [c] $n = 210$.

Results showed that supervisor support only moderated the relationship between perceived dosage of student trauma and STS, as indicated by a significant interaction term. When participants perceived low dosage levels of student trauma, supervisor support did not appear to have a differential impact. However, when participants perceived higher dosages of student trauma, higher levels of supervisor support were associated with lower levels of STS. Figure 2 models the relationship between perceived dosage and STS when moderated by supervisor support. As shown in Table 21, self-care did not moderate any relationships between the personal risk factors and STS score.

Figure 2

Moderation Relationship between Student Trauma Dosage, Supervisor Support, and STS
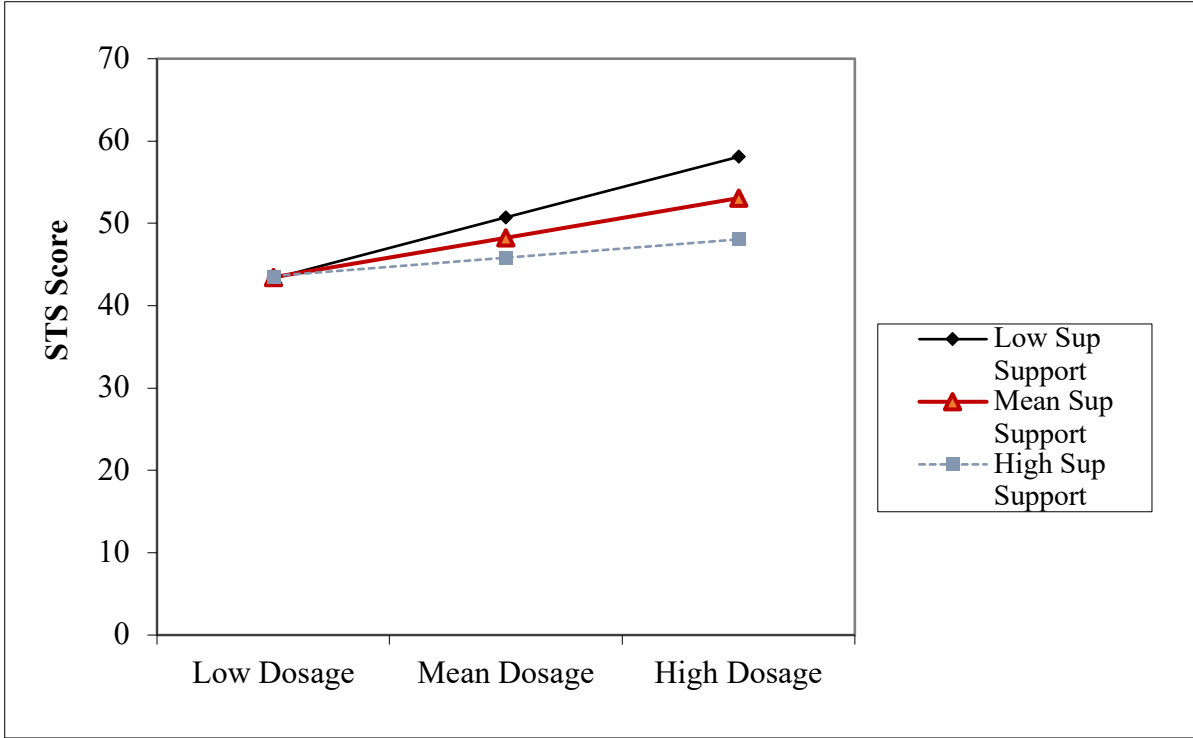
Table 21

Results of Moderation Analysis with Self-Care

Variable	Unstandardized B	SE	β	R^2	ΔR^2
Step 2: Self-Care x Trauma History[a]				.34	.25***
Constant	49.36***	1.19			
Gender	-1.77	2.40	-.05		
Race (Black/AA)	-7.21**	2.37	-.19		
Education (2-year degree or less)	-7.01*	3.19	-.14		
Crisis Team	5.92	3.69	.10		
Self-care	-.46***	.10	-.28		
Trauma History	1.24***	.20	.37		
Self-Care x Trauma History	.01	.02	.04		
Step 2: Self-Care x Perceived Dosage[b]				.33	.22***
Constant	48.39***	1.18			
Gender	-3.66	2.38	-.09		
Race (Black/AA)	-2.02	2.37	-.05		
Education (2-year degree or less)	-3.33	3.35	-.06		
Crisis Team	1.18	3.67	.02		
Self-care	-.50***	.10	-.30		
Perceived Dosage	2.12***	.36	.38		
Self-Care x Perceived Dosage	-.02	.04	-.029		
Step 2: Self-Care x COVID-19[c]				.30	.20***
Constant	49.37***	1.18			
Gender	-3.57	2.42	-.09		
Race (Black/AA)	-5.34*	2.36	-.14		
Education (2-year degree or less)	-5.84	3.25	-.11		
Crisis Team	5.36	3.67	.09		
Self-care	-.55***	.10	-.33		
Total COVID Score	2.15***	.44	.29		
Self-Care x COVID	.07	.05	.09		

Note. *$p < .05$. **$p < .01$. ***$p < .001$. All continuous predictor variables and interactions were mean centered. [a] $n = 199$. [b] $n = 208$. [c] $n = 209$.

Chapter Five: Discussion

This survey study examined the prevalence of Secondary Traumatic Stress (STS) in a sample of school personnel working in an urban setting, as well as possible personal and

professional factors related to symptoms consistent with STS. This researcher found evidence to suggest STS may be a salient experience for school personnel working in a large, midwestern, urban district. The results suggested a set of personal factors (i.e., personal trauma history, perceived dosage of student trauma, perceived impact of the COVID-19 pandemic, and self-care practices) were associated significantly with STS scores. Professional factors (i.e., supervisor support, peer support, trauma informed practiced professional development, and professional role) were observed to be less strongly related, with the possible exception of supervisor support. Finally, the results indicated supervisor support may moderate the relationship between some risk factors (e.g., perceived dosage of student trauma) and STS scores. This study was the first of its kind to examine this constellation of predictors, thus adding to the limited quantitative research base of STS in the school personnel population. Findings replicated some previous STS rates in the school personnel population and provided additional context and support for salient predictors in the wider STS literature for those in helping professions.

Salience of STS in School Personnel

The first research question examined the prevalence rate of participants who met criteria for STS. In the current sample of school personnel (i.e., regular education teachers, special education teachers, paraprofessionals, and school psychologist, counselors, and social workers), 41.2% of the professionals surveyed met full criteria for STS on the Secondary Traumatic Stress Scale. Subclinical levels of STS may be also present, with 17.7% of the population meeting criteria in two areas and 28.3% meeting criteria in one area of STS. Intrusion was the most common symptom area reported, with 82.7% of the sample endorsing at least the required one intrusion symptom to meet criteria on this subscale. High percentages of study participants perceived their job to be impacted by student trauma (i.e., approximately 60% endorsed levels of

"Sometimes" or above), and a similar percentage endorsed the belief that their work addresses student trauma (i.e., approximately 60% reported the levels of "Somewhat" or "Strongly agree"). Although the design of the study does not allow for causal conclusions and the measures used are not diagnostic, secondary traumatic stress or related symptoms emerged as salient to consider in understanding their response to traumatic stress for this population.

The substantial rate of participants in the current study who met criteria on the STSS (41.2%) adds to the growing knowledge of secondary stress in school personnel. The prevalence rate of STS in this study converges with rates found in two previous studies using the STSS measure in samples of school professionals (i.e., 39% Hatcher et al., 2011; 43% Koenig et al., 2018). However, the rates reported by participants in the current study are lower than the 75% found in Borntrager and colleagues (2012) but higher than rates reported (14.1% and 15.9%) by Fleckman and colleagues (2022) using the STS subscale in the ProQOL. The possible explanations for differences in rates noted across various studies are important to consider. First, there are differences in the sample population demographics and experiences that may impact the rates reported. For example, in the study conducted by Borntrager and colleagues (2012), their participants held an expanded range of roles (i.e., teachers, paraprofessionals, school social workers, counselors, and administrators) and worked in a wider variety of settings across the six schools (i.e., urban, rural, and Indigenous American reservation communities). In the study by Hatcher and colleagues (2011) juvenile justice teachers and staff served as participants, and in the Fleckman et al. study (2022) participants were primarily early career teachers working in two New Orleans charter schools. Although the related studies provide some demographic information about the study participants to varying degrees, the current study provides more extensive information about the student population. More research needs to be completed to gain

an understanding Of the most salient demographic and experiential factors related to STS vulnerability. For example, even though Borntrager et al., (2012) and Fleckman and colleagues (2022) had at least a proportion of their participant sample who worked in an urban setting, the current study differs in that it captures STS information during the COVID-19 pandemic, which was a significant predictor (i.e., Total COVID score) of STS scores. The intersection of different factors will be important for researchers to continue to understand and differentiate.

Additionally, the measures used to examine STS in the different studies should be considered. The STSS and ProQOL are two of the most commonly used measures for the STS construct, and they have both been used with a variety of professional populations (e.g., social workers, first responders, educators). Based on their mixed methods investigation of teachers in New Orleans, Fleckman and colleagues (2022) propose the need for a measure that better captures the potentially unique experiences of teachers with STS. For example, they found common experiences and themes related to STS reported by teachers which are not captured by the ProQOL (e.g., worry about student safety and well-being, helplessness, anxiety, numbness, irritability, difficulty with focusing). These themes are not currently addressed adequately through either the STSS or the ProQOL. A better understanding of salient factors and a measure validated for the school staff population may elucidate true prevalence rates across settings and personnel.

Other Reported Stressors

Another contribution of this study is the documentation of other potential stressors that school professionals were experiencing at the time of the study (i.e., during the COVID-19 pandemic). For example, a sizable percentage of participants (58%) reported feeling affected by student trauma at a rate of "Sometimes" or higher. Approximately 62% of participants reported

they "Somewhat" or "Strongly agree" that their work addresses issues related to student trauma. In other words, a majority of professionals surveyed in the current study perceived their work to be impacted by student trauma at relatively high rates. The COVID-19 pandemic is a global stressor that is unprecedented in modern times. A large proportion of participants in the current study reported that COVID-19 impacted their emotions or mental health at a level of "Somewhat/ Moderate" or higher during the 2020-2021 (84.2%) and 2021-2022 (78.3%) school years. Documenting this level of potential need is critical for supporting the notion that school personnel were impacted by COVID-19 and may need additional assistance to effectively perform their job duties and for their own mental well-being.

Professional Factors

The second research question explored whether and the extent to which a set of professional factors (i.e., supervisory support, peer/colleague support, professional development, and role) predicted STS in the sample after controlling for relevant demographic variables. Hypothesis 2 predicted a small to moderate association between the professional factors and STS scores. Overall, this hypothesis was not supported. The set of demographic and experiential covariate variables and the professional set accounted for approximately 15% of the variance in STS score, but the demographic and experiential covariates accounted for most of the variance (R^2 of covariates = 10%; R^2 of professional set = 5%).

Consistent with previous studies, predictors in the professional realm yielded mixed results. Results from the current study suggest that three of the four of the professional factors examined in this study (i.e., peer/colleague support, professional development, and role) did not make a unique, significant contribution to STS score. Although not statistically significant, an examination of these factors was useful for exploring whether or how they functioned as

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potential predictors and thus offer clarity to the STS field. For example, Bride and colleagues (2007) found significant correlations between peer support and STS in their sample of child protective service workers. Caringi and associates (2015) reported qualitative data to suggest the importance of various sources of social support, including colleague support. In another qualitative study, the sample of special education teachers identified peer interactions and support as the most important factor against general stress (Haydon et al., 2018). The current study provided quantitative information about colleague support, which suggests it may not be significantly associated with STS symptoms in the current sample of school staff. Previous research with school staff has not explicitly examined trauma-informed professional development and professional role as STS predictors. The failure of these two factors to reach significance in this study may be due to a true lack of predictive associations with STS score. In other words, trauma-informed professional development or the professional role may truly not be associated with a participant's predicted STS score. Alternatively, this lack of statistical significant may be indicative of measurement issues (e.g., lack of established valid and reliable measure for trauma-informed professional development, small sample of support personnel).

Supervisor Support

Supervisor support, however, appears to have a small but significant association with STS scores in the current study. As participants in this sample reported higher levels of supervisor support, there was an associated slight decrease in the predicted STS score. In an attempt to examine whether supervisor support may function as a protective factor against the personal risk factors, a moderation analysis examined how supervisor support altered the relationship between each personal factor (i.e., trauma history, perceived dosage of student trauma, and subjective impact of the COVID-19 pandemic) and the STS score (RQ 4). Results

suggested that after controlling for the covariates, supervisor support was only differentially associated with STS scores based on the level of perceived dosage of student trauma. When staff perceived student trauma to be at the lower end of the spectrum, supervisor support did not appear to have a differential association. However, as staff perceived their students to have experienced higher levels of trauma, higher supervisor support scores were associated with relatively lower STS scores.

Prior research supports the beneficial associations between supervisor support and STS (Borntrager et al., 2012; Hensel et al., 2015; Quinn et al., 2019) and other related constructs (e.g., Alkhateri et al., 2018; Klusmann et al., 2008). By using items from the Child Welfare Organization Culture Inventory, the current study also attempted to answer the call from Hensel and colleagues (2015)'s metanalysis to provide further empirical support for the relationship between the two constructs using more established measures. Although statistically significant in this study, researchers must reflect on whether small but significant results contribute to a substantial decrease in real-world symptoms or impairment. This study confirms the need for further investigation into the salience of supervisor support on STS symptoms. Schools and districts often work operate from tight budgets. Therefore, further research should clarify whether effective supervisor support is an important and economical area to invest their limited resources in to address STS.

Personal Factors

The third research question explored whether and the extent to which a set of personal factors (i.e., personal trauma history, perceived dosage, COVID-19 impact, and self-care score) predicted STS in the sample. Hypothesis 3 predicted a small to moderate association between the professional factors and STS scores, which was supported in this sample. The set of demographic

and experiential covariate variables and the professional set accounted for approximately 42% of the variance in STS score, and the demographic and experiential covariates only accounted approximated 11% of the variance (R^2 of covariates = 11%; R^2 of professional set = 31%). Each factor included in the model predicted a unique and significant amount of STS variance, which highlights that individuals' experiences and their perceptions of their environment are likely associated with how they deal with the direct (e.g., hearing directly about adverse events) and indirect (e.g., hearing through indirect means, working with trauma-impacted challenging behavior) exposure from their students. Consistent with previous studies, the personal set of factors appears to have an important association with STS symptoms.

Personal Trauma History

Personal trauma history scores in the current study were associated with a higher predicted STS score. Previous studies have reported mixed impacts of personal trauma history on STS-related symptoms, with some studies finding associations with STS (e.g., Bride et al., 2007; Caringi et al., 2015; Ivicic & Motta, 2017) and some studies not finding associations (e.g., Adams et al., 2008; Borntrager et al., 2012). One strength of this study was the use of items from previously validated measures (i.e., Trauma History Screen and Childhood Experiences Survey) that offered a comprehensive view of potentially traumatic or adverse experiences across the lifespan (i.e., high magnitude stressors and adverse childhood experiences). This approach captures a wide view of potentially stressful experiences, and it contributes to the STS field by providing evidence that previous adverse experiences may contribute to a vulnerability to STS symptoms. Hensel and colleagues (2015) posit that having a personal trauma history "enhances one's therapeutic skill while simultaneously conferring vulnerability" (p .87). Although personal trauma history is not changeable, individuals can engage in formal (e.g., therapy, group support)

or informal (e.g., process with family and friends) support in order to lessen the negative impact of past stressful experiences.

Perceived Dosage

The perception of student trauma as a salient factor in their work (i.e., their work affected by student trauma) was a significant predictor of STS in this study. Higher perceived dosage of working with student trauma showed associations with higher STS scores. This proxy variable for the actual level of trauma in the student population is meaningful because it provides insight into how the school staff in this study understand their role in relation to working with students who have experienced adverse experiences. The findings suggest the perception of school personnel's work being related to addressing student adversity is associated with higher levels of STS. Although Sprang and colleagues (2019) posit direct or indirect exposure as a salient predictor of STS, few studies, especially in the school setting, have examined the association explicitly. For example, Borntrager and colleagues (2012) descriptively reported that 13.7% of their participants reported their students were not or mildly traumatized, 32.3% were moderately traumatized, and 44.7% were severely or very severely traumatized. However, the researchers did not use this data as a predictor. Fleckman and colleagues (2022) posit that teachers may have a higher proportion of indirect exposure to trauma that may be "more incidental, less frequent, and limited in-depth" (p. 14). The field must continue to gain a better understanding of how school personnel experience indirect and direct exposure to student trauma in order to better capture the experience, to identify who is likely to experience STS, and to understand how to help ameliorate the effects.

COVID-19 Impact

The COVID-19 pandemic is a collective global stressor that is unprecedented in modern times. Like many stressors, individuals' responses and the degree of impact vary based on a variety of factors. Results from the current study suggest that the perceived impact of the COVID-19 pandemic on participants' emotions and mental health was a significant predictor of STS score. The study of the short- and long-term impacts of the COVID-19 is still in beginning stages. As of the writing of this dissertation study, the COVID-19 pandemic continues, but it has morphed and impacted students, staff, and schools variably across the three school years that it has touched (i.e., 2019-2020 through 2021-2022 academic years). In an examination of the impact on students, Schwartz and colleagues (2021) found that 25% of their student sample exceeded critical levels of stress, with females and older students being at highest risk. However, they noted overall that most of the students surveyed were not experiencing high levels of distress or impairment from the COVID-19 pandemic in the fall of 2020. They posited some differences may be attributable to pre-existing vulnerabilities (Schwartz et al., 2021). Brosig and associates (2022) documented needs expressed by families in a hospital-based school liaison program for families with a child suffering from heart disease. Some of these needs reported by families included meeting the educational needs of their children, concerns about mental health, and help with navigating the changing school context (Brosig et al., 2022).

Results among teachers portray a mixed picture of impairment so far. In a review of six studies available at the time across K-12 and university settings, researchers found a variety of prevalence rates: anxiety-–10 - 49.4%; depression- 15–.9 - 28.9%; and stress- 12–.6 - 50.6% (Olivia Silva et al., 2021). In October 2020, Pressley and colleagues (2021a) found that a majority of the teachers surveyed did not show an increase in anxiety in the first month of their return to in-person schooling, but they noted that stress and quality of communication within the

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school were significant predictors of teacher anxiety. Teacher burnout and stress at the beginning of the 2020-2021 school year were also associated with administrative support and anxiety related to COVID-19, current teaching demands, and communicating with parents (Pressley et al., 2021b). In a rare longitudinal data set from fall 2019 and 2020, researchers found lower levels of teacher work-related stress in fall 2020 (Herman et al., 2021). The identified significant predictors of work-related stress and staff well-being included reported student management self-efficacy and school-level influences (i.e., collegial school leadership and fair discipline practices) (Herman et al., 2021).

Fitzgerald and colleagues (2021) discussed unexpected positives from the pandemic (e.g., more time spent with family, greater focus on work-life balance, rapid increases in technology literacy), but they noted the potential for sources of stress, such as loss of structure and instruction due to school closures, increased rates of child abuse and family stress, and increased rates of mental health challenges. An essential factor that will be important to continue to monitor is the potential differential impact the pandemic has had on marginalized communities, including populations of color and economically marginalized populations (Fortuna et al., 2020; Liu et al., 2020; Watson et al., 2022). Some researchers framed the pandemic as a call to increase trauma-informed practices in schools (Crosby et al., 2020; Dewey Bergren et al., 2021), as well as advocate for more equitable practices at a systemic level for communities that have been marginalized (Fortuna et al., 2020; Liu et al., 2020). As will be noted in the Future Directions section, a more robust understanding of both this area of professional development need and the state of systemic practices that disproportionately impact students of color (e.g., discipline, special education qualifications, curriculum content) are important practices that need to be investigated more explicitly in regard to STS.

Self-care

In the current study, self-care showed associations with lower levels of predicted STS, and it may act as a protective factor. These results concur with theoretical and empirical evidence from previous research (Caringi et al., 2015; Klusmann et al., 2008 Kulkarni et al., 2013; Rankin, 2021). In a sample of pre-service educators, Miller and Flint-Stipp (2019) found that participants viewed self-care as helpful. However, participants also reported self-care can be difficult to practice, to incorporate into their lives, and to understand the wide-set of applicable practices in the construct of self-care. In the wake of increased stress and demand placed on schools during the COVID-19 pandemic, Urlick and colleagues (2021) proposed a framework for school leadership that advocated for greater crisis preparation and more focus on incorporating self-care practices during crisis situations in schools. Educators from pre-service to administrative levels would likely benefit from incorporating more intentional and effective self-care practices to bolster mental well-being, as well as allowing them to practice their job more effectively.

Researchers have also found that self-care acts as a protective factor in other helping professions (Butler et al., 2017). As the field continues to more clearly define and assess for effective self-care practices and domains operationally (Dorociak et al., 2017), leaders should be able to provide more targeted support for developing self-care practices. Although self-care appears to be a potentially important factor for school personnel, school leaders must take care not to place too much onus on individuals as responsible for ameliorating job-related stress or adverse effects. Leaders may see benefits from continually working to provide more systems-level support. As Benson (2017) describes, "teacher self-care is ultimately an individual solution to the systemic demand of teaching every child…" (Introduction, paragraph three). In the current study, although self-care had a statistically significant negative relationship with STS scores in

the full model (RQ 3), it did not moderate the relationship between any of the personal risk factors and STS score (RQ 4). This lack of moderation relationship was unexpected, and it may have resulted due to several factors. First, the data may reflect a true lack of moderation relationship for this sample. Alternatively, there may be measurement limitations, such as insufficient power to detect the relationship or insufficient measures for capturing the most impactful types of self-care. The field would likely benefit from more exploration into this relationship and understanding the most effective forms of self-care.

The observed relationship between self-care and STS in the current study concurs with findings from Salloum and colleagues (2015) in their sample of child welfare workers. Although individuals in their sample who endorsed higher levels of trauma-informed self-care displayed higher levels of compassion satisfaction and lower levels of burnout, the authors found no associations with secondary trauma (Salloum et al., 2015). These findings together suggest that, although self-care can be a helpful practice, it is not a strong enough intervention to adequately ameliorate the relationship between the risk factors measured in the current study and STS.

Implications

The current investigation aimed to examine a unique constellation of professional and personal factors based on participants self-reports on several surveys. The study was designed to (a) document the STS prevalence in a group of school staff, (b) provide information about salient risk and protective factors, and (c) document the impact of COVID-19 on school personnel. The results also contribute to the literature by identifying and considering which factors school and district leadership may benefit from being aware of and areas for which staff may benefit from extra support. Unexpectantly, many of the significant predictors of STS in the current study were within the personal rather than the professional realm. As such, these factors are likely more

difficult for leadership to address or intervene. Additionally, many of the personal predictors are relatively static and can be more difficult to help staff address. However, the results lend to some practical implications for the school setting. First and foremost, STS appears to be a relevant constellation of symptoms that may impact school personnel. While the exposure may be more indirect than other helping professions, a sizable proportion (i.e., 41%) of the staff in the sample met the nondiagnostic criteria for STS. In their model of indirect exposure to trauma for educators, Fleckman and colleagues (2022) caution that the impact of STS and burnout may lead to symptoms such as "difficulty maintaining routines, [using] negative coping behaviors, diminished satisfaction with job, and harm to relationships" (p. 9). In this regard, the current findings support the need for school and district leaders to continue educating themselves and their staff on STS, as well as help to ease potential effects.

In terms of professional factors, supervisor support appears to be an important buffer against STS symptoms. This buffering role appeared to be especially true when professionals perceive their work as more strongly related to working with students who have adverse experiences. It was also notable that professional role was not a significant predictor of STS, which suggests that both teaching (i.e., general education, special education, and paraprofessionals) and support (i.e., school psychologists, counselors, and social workers) staff may need support at comparable levels to address STS symptoms. However, the crisis team variable (i.e., used as a covariate) revealed that past or present experience on the crisis team were associated with higher STS scores. These individuals may have greater levels of direct and indirect exposure to student trauma, and they may need additional support to address the STS related symptoms. Trauma-informed practices professional development was not a significant predictor of STS in this sample; however, approximately 85% of study participants had received

some level of formal training. Future research should decipher whether greater variance in the sample would provide insight into this type of professional development having a differential influence on STS scores.

Personal factors were found to be more predictive of STS scores than the professional factors. Thus, current findings point to the benefit of school leadership considering how they can help staff address those factors. For example, increased levels of perceived dosage and total COVID-19 impact score showed associations with higher STS scores. In conjunction with the finding of the positive associations with effective supervisor support, supervisors should be aware of the perceptions of school staff in these two areas (i.e., dosage and COVID-19 impact) so they can provide support as necessary. Supervisors may provide important protective support to professionals who perceive their students to have higher dosages of student trauma. However, more clarity in the research is needed to illuminate what elements of effective supervisor support would ameliorate the potentially negative effects of student trauma on school staff. This explicit supervisor assistance around supporting students who have experienced trauma may help school personnel to be more effective in their work with students and may lead to displaying lower levels of STS related symptoms overall.

Prior research suggests that stress related to the COVID-19 pandemic develops and is maintained by a complex set of factors, such as separation from loved ones, more acute awareness of stressors students face at home, emotional distress, and increased workloads (Baker et al., 2021). While school leadership cannot address many of these factors directly, they can help by providing supports in the school setting and by helping teachers strengthen self-efficacy around their behavioral management and teaching effectiveness (Herman et al., 2021). Finally, leadership can continue to encourage staff in developing and attending to well-being practices,

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such as addressing the negative effects of past personal trauma/ adverse experiences and strengthening self-care practices. When leadership make staff well-being a priority and part of school culture in both their words and actions, it may in turn encourage individuals to prioritize their mental well-being. A greater emphasis on staff mental health will likely thus have positive influences on both staff and students.

Given their mental health and multi-tiered systems of support background, school psychologists and other support staff may be in a unique position to disseminate information about trauma-informed practices and secondary traumatic stress, as well as to provide direct support to other staff and students. Hatzichristou and colleagues (2020) advocate for social justice principles as fundamental to the practice of school psychology. They provide seven examples of practical applications of social justice principles in school psychology practice, including "providing counseling, consultation, and supervision to enhance personal and professional strengths; acting as advocates for the needs of vulnerable groups of students; providing education and in-service training to teachers, parents, students, and mental health professionals… and establishing cooperative partnerships with communities" (p. 72). This role in supporting trauma-informed practices and STS initiatives may be especially true in the era of the COVID-19 pandemic, even when support staff roles have been altered in response to the pandemic. In a study with Canadian school psychologists, almost all participants reported alterations to their roles in the beginning months of the pandemic (Ritchie et al., 2021). Some of the most common responses included spending less time spent on evaluations, mental health interventions, and report writing. In contrast, they reported more time spent on professional development and consultation activities (Ritchie et al., 2021). Academic, behavioral, and social-emotional consultation is germane to the role of school psychologists (NASP, 2020). As such,

school psychologists may be helpful in important areas for the implementation of trauma-informed practices of increasing other staff buy-in, self-efficacy in response to student trauma, and recognizing the potential risk for secondary trauma (Baker et al., 2020).

This knowledge about the potentially protective role supervisor support can have when staff perceive higher levels of trauma for their students may be important information for school and district leaders, especially in settings where there are high levels of actual or perceived student trauma (e.g., Borntrager et al., 2012; Caringi et al., 2015). Support from supervisors might help staff in multiple ways. High quality supportive supervisors may help school staff to support their students more effectively. Additionally, supervisor support may ameliorate the staff's' secondary traumatic stress related to working with populations of students who have undergone adverse experiences. Future research should continue to study and clarify the impact of supervisor support on STS, especially because it is a factor that school and district leadership may be able to explicitly target for improvement.

A strength of this study was gaining insight about STS with diverse participants in an urban school district with a high proportion of students of color living in poverty. Sixty-three percent of the current participants identified as white, which is much lower than the 92% of teachers in the state of Wisconsin. Similarly, 15% of participants identified as Latinx, in contrast to the 3% state-wide. According to the National Center for Education Statistics (2021), in the 2017-2018 school year, 79% of public school teachers in the United States identified as white and 9% identified as Hispanic. Additionally, approximately 94% of the student population in this study qualified for the economically disadvantaged category, 23% were identified as having a disability [versus 15% nationally according to the National Center for Education Statistics (2022)] and approximately 96% of students from the sample of schools identified as students of

color. As discussed in the Introduction to this study, potentially traumatic experiences, systematic racism, and living in poverty can leave children vulnerable to adverse impacts, such as higher discipline referrals, lower standardized test scores, delays in school progress, and delays in social-emotional development (Barnett, 2011; Blitz et al., 2016, Wade et al., 2016). Furthermore, Song and colleagues (2021) review research that provides evidence of the disproportionate negative impact of COVID-19 on various marginalized communities, such as students with disabilities, students from minoritized communities, culturally and linguistically diverse students, and students from families with low-income and economic marginalization. Given the confluence of these demographic factors (i.e., high rates of students experience economic disadvantage, students of color, students with identified disabilities) and the high levels of perceived student trauma dosage, the substantial percentage of the participants meeting criteria on the STSS (i.e., 41%) in the current study suggests the potential need for more effective support. The systematic nature of some of these challenges (i.e., systemic racism, challenges associated with living in poverty) suggests reform on a systems-wide level may be necessary to ameliorate some of these negative effects. Future research should better capture student trauma and investigate whether student-level characteristics impact STS level. This knowledge could help inform more effective training for school personnel, especially when there is a mismatch between staff and student characteristics and experiences.

Limitations

Although attempts were made to minimize errors and concerns with validity and generalizability, several improvements to the study could occur. STS was measured using a self-report questionnaire designed for a variety of helping professionals, and the measure is designed as a screener rather than indicative of STS. Additionally, the study design was cross-sectional in

nature, and therefore only captured symptoms at one given point in time. Consequently, the symptoms captured by the STSS may be related to other disorders or life circumstances (e.g., PTSD, depression, recency bias). A multi-modal assessment (e.g., clinical interviews, observations) would provide greater clarity regarding the symptoms and a more robust understanding of the impact that secondary stress has on participants.

To maximize confidence that the variables measured in the current study represented the chosen constructs (i.e., internal validity), this researcher attempted to find existing validated and reliable measures during the study design stage of the process. Although many established measures were used to produce the predictor variables, this author created items for some measures used as predictors in the current investigation (i.e., trauma-informed practices professional development, subjective COVID-19 impact). Given the mixed results in existing literature, more established measures could provide a clearer consensus on the salience of predictors. Other potential threats to internal validity include the historical confound of the COVID-19 pandemic and the possible self-selection bias of participants who elected to take the study. A potentially important threat to external validity in this survey study is the lack of measures designed for school personnel populations on the constructs under study. While the measures used in the study were largely designed for other helping professionals (e.g., psychologists, child well-fare workers), Fleckman and colleagues (2022) suggest there may be considerations unique to school personnel that are important to consider and capture in STS studies. Finally, the participants in this study represent a fairly diverse sample compared to typical demographics of staff and students, both nationally and regionally (i.e., using state-level data), as established above in the Implications section. Although the participants represent a relatively diverse subsection of the school personnel population, participants were limited to

those working in 30 schools in one urban district. Replication of this or similar studies with a more diverse sample of demographic characteristics (e.g., race, ethnicity, gender), settings (e.g., other urban settings, rural, suburban), and time periods (i.e., after the COVID-19 pandemic effects have lessened or subsided) will be important to generalize findings.

Future Directions

The convergence of evidence from the current and previous studies suggests the importance of future research aimed at furthering the understanding of STS in the school personnel population. Although the STS rate of 41% in the current study mirrors those found in some previous studies with STS in school personnel, the range of prevalence rates across studies suggests more work needs to be done in developing a school staff specific measure for STS, as advocated for by Fleckman and associates (2022). Researchers should continue to investigate whether current widely used measures (i.e., STSS and ProQOL) accurately capture the STS experience for school staff (Fleckman et al., 2022), which would provide more confidence in these estimates in the school staff population. Futhermore, future studies should incorporate qualitative or mixed method designs to capture a more nuanced and complete understanding of STS in schools.

Research to date on STS has yielded mixed results on predictive characteristics and experiences. Although the current study provided evidence for the importance of several factors (i.e., supervisor support, trauma history, perceived dosage, COVID-19 impact, and self-care practices), future research with school personnel should continue to examine the factors in this study as well as other factors that may be predictive of STS. For example, the failure of trauma-informed practices professional development and professional role to reach significance as predictors in this study may be due to a true lack of predictive association with STS score. In

other words, trauma-informed professional development or professional role may truly not be significantly and uniquely associated with a participant's predicted STS score. The current investigation documented the occurrence of trauma-informed practices professional development for participants, but data were not collected on the quality of the training, the content of the training, knowledge acquired, or practices used by participants. A more robust understanding of professional development received by participants could help identify continued areas of professional development need, especially in the context of the COVID-19 pandemic. Alternatively, this lack of statistical significance may be indicative of measurement issues (e.g., lack of established valid and reliable measure for trauma-informed professional development, small sample of support personnel). A more comprehensive understanding of stressors impacting their employees will better equip school and district leaders to help school personnel in working with their students.

As explored in the literature review, the field has yet to arrive at a consensus on the most important predictors of STS. The current study highlights the potential significance of personal factors in the prediction of STS scores. Future research should continue to use theoretical (e.g., Ludick & Figley, 2017) and empirical considerations when investigating other potential predictors. For example, in their theoretical Compassion Fatigue Resilience Model, Ludick and Figley (2017) identified "other life demands that may temporarily impede an individual's functioning" as 1 of the 13 factors important to investigate for STS. While this category could include a wide variety of disorders or experiences, individual factors, such as depression or other mental health disorders may be important to investigate. Depression has shown high correlations with burnout symptoms (Schonfeld & Bianchi, 2016), but there has been less investigation on the associations between STS and depression. Given the conceptual overlap and confusion between

related concepts, as discussed in the literature review, the field needs to continue to gain a better understanding of STS and how it has overlaps or differs from related constructs (e.g., burnout or similar symptoms in disorders such as PTSD, anxiety, or depression). Future studies may benefit from greater exploration of contextual factors. For example, the current study was situated in an urban setting with a high percentage of students identified as from economically-disadvantaged backgrounds. Examining other types of settings (i.e., rural, suburban) may shed light on contextual factors that may confer risk. As individuals and leaders within the field of education increase their understanding and meeting of school staff's emotional, physical, and professional needs, it is expected that students also will reap the benefits from their enhanced knowledge and capacities.

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Appendix A

Recruitment Materials

The director of Specialized Services sent the following information to be posted on their school listservs.

Greetings staff, I'm sharing the following (attached) survey with you all in the hopes you'll participate (on your own time). It's been approved through the District Research Department and the information gathered will assist us in our trauma-informed practices. Thank you!

Subject line: Earn a $15 gift card for survey participation!!

Good morning!

My name is Leigh Monahan, and I am currently a school psychology PhD student at the University of Wisconsin-Milwaukee. As a former teacher and school counselor, I understand how wonderful and stressful working with kids in schools can be! For my dissertation study I am hoping to gather information on **how working with students who have experienced trauma may impact you as an educator.**

In addition to contributing important information to the field, you will earn a **$15 gift card** for your participation in the **online survey** as a thank you for your time. The survey will take **approximately 15 minutes** to complete. Your participation is completely voluntary, and you can withdraw at anytime. The survey should be completed on your own time, and there are no negative consequences for not participating. Your responses will be anonymous, and your individual answers will never be shared. Your answers will be averaged with your colleagues in order to see patterns and trends, but the results will only be shared at the average level.

I hope you consider contributing your valuable perspective! Please don't hesitate to reach out to me with any questions you may have at k*******@uwm.edu [redacted for privacy]

To take this survey, you must be:
- At least 18 years old
- Employed as a **general education teacher, special education teacher, paraprofessional, school psychologist, school counselor, or school social worker at one of the identified schools in the [Name of] district.**

If you are interested in participating in my study and earning a $15 gift card, please click the link below.

[Active survey link was inserted here]

Best,

Leigh Monahan

Appendix B

Informed Consent to Participate in Research

Study title: Investigating Secondary Traumatic Stress in Urban School Personnel

Researcher[s]: K. Leigh Monahan, Ph.D. Student, University of Wisconsin-Milwaukee, Educational Psychology; Karen C. Stoiber, Ph.D., University of Wisconsin-Milwaukee, Educational Psychology

We're inviting you to take a survey for research. This survey is completely voluntary and should be completed on your own time. There are no negative consequences if you don't want to take it. If you start the survey, you can always change your mind and stop at any time.

What is the purpose of this study?
We want to understand how student trauma may affect you as an educator. We also want to learn more about what experiences may make educators more vulnerable to high levels of stress from working with students who have been exposed to potentially traumatic experiences.

What will I do?
This survey will ask questions about past experiences, your perception of student trauma, various supports in your life, and possible symptoms of working with students who have experienced trauma. It includes questions about previous personal trauma, but it will be collected anonymously and the information will never be shared with anyone on an individual level. The survey will take about 15 minutes.

Risks
- Some questions may be personal or upsetting. You can skip them or quit the survey at any time.
- Online data being hacked or intercepted: Anytime you share information online there are risks. We're using a secure system to collect this data, but we can't completely eliminate this risk.
- Breach of confidentiality: There is a chance your data could be seen by someone who shouldn't have access to it. We're minimizing this risk in the following ways:
    - Data is anonymous.
    - We'll ask for your work email address if you would like to receive the incentive, but your email address will be stored separately from your research data and it will not be able to be linked to you.
    - We'll store all electronic data on a password-protected, encrypted computer.

Possible benefits: Information about the needs and supports of the participants will be shared at the average level (i.e., your information will never be linked to you) with school and districts leaders. This will help them to better understand your experiences and needs. This information will also help society better understand them impact that student trauma may have on educators.

Estimated number of participants: 200 teaching (ex: general and special education teachers, paraprofessionals) and support (ex: school psychologists, counselors, and social workers) staff

How long will it take? Approximately 15 minutes

Costs: None

Compensation: $15 gift card

Future research: Your data won't be used or shared for any future research studies.

Confidentiality and Data Security
We'll collect the following identifying information for the research: email address and electronic signature separate from your research data. This information is necessary so that you can receive the gift card.

Where will data be stored? On the researchers' computers and on the servers for the online survey software (Qualtrics).

How long will it be kept? 1 year after the completion of the project

Who can see my data?
- We (the researchers) will have access to de-identified data. No names or other identifiable information will be collected with the data, but an email address and electronic signature will be collected separately for sending out the incentive. This is so we can analyze the data and conduct the study.
- Agencies that enforce legal and ethical guidelines, such as
  - The Institutional Review Board (IRB) at UWM
  - The Office for Human Research Protections (OHRP)
- We may share our findings in publications or presentations. If we do, the results will be aggregate (grouped) data, with no individual results.
- Information will be shared with school and district staff at the group level, with no individual results.

Questions about the research, complaints, or problems: Contact K. Leigh Monahan, K*******@uwm.edu or Karen Stoiber at K*******@uwm.edu

Questions about your rights as a research participant, complaints, or problems: Contact the UWM IRB (Institutional Review Board) at 414-662-3544 / irbinfo@uwm.edu.

Please print or save this screen if you want to be able to access the information later.
IRB #: 22.***
IRB Approval Date: October 15, 2021

Agreement to Participate

Your participation is completely voluntary, and you can withdraw at any time.

To take this survey, you must be:

- At least 18 years old
- Employed as a general education teacher, special education teacher, paraprofessional, school psychologist, school counselor, or school social worker at one of the identified schools in [district name]

If you meet these criteria and would like to take the survey, click the button below to start.

Appendix C

STS Informational Resource for Participants

Information about Secondary Traumatic Stress for Educators

What is Secondary Traumatic Stress?

Thank you for your help with this study! You are making an important contribution to the field by sharing your experiences.

This handout provides information about secondary traumatic stress (STS), how it may look, and resources available in the [City] area. STS is the "the natural, consequent behaviors and emotions resulting from knowledge about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or

suffering person" (Figley, 1999).

You work hard every day with your students! However, your work with students who have experienced trauma may be having an indirect impact on you. Additionally, answering questions about past trauma may be upsetting for some people.

This is a normal reaction, and there are things you can do to help address that distress. Please read this document for local

resources and more information on STS.

Possible Signs of STS

STS can impact people differently. Symptoms may include:

Cognitive
- Trouble with concentration, rigid thinking, preoccupation with trauma

Emotional
- Guilt, anger, numbness, sadness, mood swings

Behavioral
- Withdrawal, sleep disturbance, hypervigilance

Physical
- Heart rate changes, headaches, lethargy

If you are experiencing these or related symptoms, there are community resources available.

Perry, 2014;
U.S. Dept. of HHS, n.d.

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Key Mental Health Resources in the [City] Area

There are many resources available in the [City] area.

- If you are in danger of hurting yourself or others, immediately call **911** or the National Suicide Prevention Lifeline (800-273-8255/ TALK)

- Know the employee wellness resources that may be open to you through MPS, such as mental health counseling: [link inserted here]

- [City] Coalition for Children's Mental Health has an extensive list of local and

national resources: [link inserted here]

- The resources directory from Mental Health America of WI has a list of local providers: [link inserted here]

- For information and resources related to COVID-19, visit the Medical College of Wisconsin site: https://covid19.mcw.edu/

Attending to **self-care** in the areas of **physical** (sleep, food, movement), **psychological** (self-reflection, life balance), **emotional** (spend time with loved ones, cry,

laugh), and **workplace** (take breaks, set limits, use peer support) needs can contribute to your well-being and make you an even better educator! (Perry, 2014)
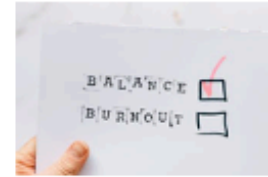
Want to Know More about STS?

If you would like to learn more about STS, the following resources are a good place to start.

- Treatment and Services Adaptation Center: https://traumaawareschools.org/secondaryStress

- Trauma-Sensitive Schools Training Package: https://safesupportivelearning.ed.gov/sites/default/files

/TSS_Building_Handout_2 secondary_trauma.pdf

- The National Child Traumatic Stress Network: https://www.nctsn.org/trauma-informed-care/secondary-traumatic-stress

- The Administration for Children and Families: https://www.acf.hhs.gov/trauma-toolkit/secondary-traumatic-stress

- The United States Department of Health and Human Services: https://www.childwelfare.gov/topics/management/workforce/workforcewellbeing/burnout/secondary/

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For any questions related to the study, please feel free to contact

K. Leigh Monahan at K********@uwm.edu

Appendix D

Study Survey

I.   **Demographic Questions** (11-12 items)
1. Are you over the age of 18? (Screening Question, required)
     i. Yes
     ii. No
2. What is your current role at your school? (Screening Question, required)
     a. Teacher (general)
     b. Teacher (special education)
     c. Paraprofessional
     d. School psychologist
     e. School counselor
     f. School social worker
     g. Other: (please specify)
3. What is the name of the school(s) you work at? (Screening Question, required)
     i. Multiple choice checkbox with the names of all 30 schools
     ii. I **_do not_** work at least part time at any of the listed
4. How old did you turn on your most recent birthday?
     a. (text box for entry)
5. Are you of Hispanic of Latino origin (including Cuban, Dominican, Mexican, Puerto Rican, South or Central American) regardless of race?
     a. Yes
     b. No
6. Which of the following best describes your racial group? Select all that apply
     a. Asian
     b. Black or African American
     c. Native American or Alaskan Native
     d. Native Hawaiian or other Pacific Islander
     e. Middle Eastern
     f. White or Caucasian
     g. Multiracial or biracial
     h. Other (please specify: _____)
7. What is your gender?
     a. Man
     b. Woman
     c. Another gender identity not listed here
8. What is your highest level of education
     a. High school diploma or GED
     b. Some college courses
     c. One year degree (e.g., technical college or child development)
     d. Two year college degree (associates degree)
     e. BA/BS degree
     f. MA/MS/ EdS degree

g. Ph.D./ Ed.D
9. Years of experience in role (including the current year)
   a. This is my first year
   b. Other (please specify: _____)
10. What type of school/ age of children do you currently work with? (check all that apply)
    a. Kindergarten through 5th grade (K-5)
    b. Kindergarten through 8th grade (K-8)
    c. Kindergarten through 12th grade (K-12)
    d. 6th through 8th grade (6-8)
    e. 9th-12th grade (9-12)
    f. 6th through 12th grade (6-12)
11. Do you now or have you in the past served on the district crisis team (i.e., the team that responds in the event of a student or staff death or other crisis)?
    a. I have never served on the district crisis team.
    b. I have served on the crisis team in the past.
    c. I currently serve on the crisis team.
       i. **If answer b or c → follow up question**
          1. How many years have you served on the district crisis team?
             a. Textbox entry

II.   **STS** *(criterion variable)*

All items from the Secondary Traumatic Stress Scale (STSS, Bride et al., 2007) (17 items)
    Likert-style scale: 1 = never, 2 = rarely, 3 = occasionally, 4 = often, 5 = very often

The following is a list of statements made by persons who have been impacted by their work with traumatized clients. Read each statement then indicate how frequently the statement was true for you in the **past seven (7) days**. This group of questions is meant to provide context, and it is not diagnostic.

12. I felt emotionally numb
13. My heart started pounding when I thought about my work with students
14. It seemed as if I was reliving the trauma(s) experienced by my student(s)
15. I had trouble sleeping
16. I felt discouraged about the future
17. Reminders of my work with clients upset me
18. I had little interest in being around others
19. I felt jumpy
20. I was less active than usual
21. I thought about my work with student when I didn't intend to
22. I had trouble concentrating
23. I avoided people, places, or things that reminded me of my work with students
24. I had disturbing dreams about my work with students
25. I wanted to avoid working with some students
26. I was easily annoyed
27. I expected something bad to happen

28. I noticed gaps in my memory about client sessions

Select items from the Professional Quality of Life Scale (ProQOL; Stamm, 2010) (3 items)
   Likert-style scale: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often

Consider each of the following questions about you and your current work situation. Select the frequency that honestly reflects how often you experienced these things in the **last 30 days.**

29. I find it difficult to separate my personal life from my life as an educator.
30. I think that I might have been affected by the traumatic stress of those I educate/ serve.
31. Because of my educating/ serving, I have felt "on edge" about various things.

III.   **Supervisor Support**

Select items from the Supervisor Support section of the Child Welfare Organization Culture Inventory (CWOCI, Westbrook et al., 2009) (6 items)
   Likert-style scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree

Please indicate how strongly you agree with the following statements

32. Supervisors are empathetic to the needs and feelings of staff
33. Quality work with and for students is regularly recognized, even if only informally
34. Supervisors recognize strengths and weaknesses among individual staff
35. Supervisors engage in culturally competent practice
36. Supervisors show a genuine concern for school personnel as professionals
37. Supervisors help school personnel when problems arise

Two author created items added to capture information more specific to student trauma impact (2 items)

38. Supervisors help school personnel support students who have experienced trauma
39. Supervisors help school personnel develop trauma-informed practices in their work with students.

IV.   **Peer/ Colleague Support**

Items from the Self-Care Assessment for Psychologists) (5 items)
   Rating scale with two anchor points 1 = Never through 7 = Almost always

Please use the following scale to indicate how often you have engaged in each activity during the current school year.

34. I cultivate professional relationships with my colleagues.
35. I avoid workplace isolation.
36. I share work-related stressors with trusted colleagues.

37. I share positive work experiences with colleagues.
38. I maintain a professional support system.

Two author created items added to capture information more specific to student trauma impact (2 items)

39. I share work-related stressors related to student trauma with trusted colleagues.
40. Colleagues help me address and cope with stressors related to student trauma.

V.   **Professional Development**

Author created item (1 item)

41. What type of professional development have you received regarding trauma-informed practices or working with traumatized students?
    a. None
    b. Personal research only (ex.: done on own time, independent research, reading; no formal training)
    c. 2- [District]/ DPI training modules only
    d. 3- [District]/ DPI training modules plus additional formal or informal training (ex.: additional workshops, trainings, classes, or independent research)

VI.   **Self Care**

Three of the five subscales from the Self-Care Assessment for Psychologists (Dorociak et al., 2017) (11 items)
Rating scale with two anchor points 1 = Never through 7 = Almost always

Please use the following scale to indicate how often you have engaged in each activity during the current school year.

Life Balance
42. I spend time with people whose company I enjoy.
43. I spend time with family or friends.
44. I seek out activities or people that are comforting to me.
45. I find ways to foster a sense of social connection and belonging in my life.

Cognitive Strategies
46. I try to be aware of my feelings and needs.
47. I monitor my feelings and reactions to clients.
48. I am mindful of triggers that increase professional stress.
49. I make a proactive effort to manage the challenges of my professional work.

Daily Balance
50. I take breaks throughout the workday.
51. I take some time for relaxation each day.

52. I avoid overcommitment to work responsibilities.

VII.   **Personal Trauma History**

The structure for this scale was modeled after Borntrager et al. 2012. Items were taken from the Trauma History Screen and the Childhood Experiences Survey.

All items from the Trauma History Screen (Carlson et al., 2011) (14 items)
The events below may or may not have happened to you. Indicate "Yes" if that kind of thing has happened to you or indicate "no" if that kind of thing has not happened to you.

53. A really bad car, boat, train, or airplane accident
54. A really bad accident at work or home
55. A hurricane, flood, earthquake, tornado, or fire
56. Hit or kicked hard enough to injure - as a child
57. Hit or kicked hard enough to injure - as an adult
58. Forced or made to have sexual contact - as a child
59. Forced or made to have sexual contact - as an adult
60. Attacked with a gun, knife, or weapon
61. During military service - seeing something horrible or being badly scared
62. Sudden death of close family or friend
63. Seeing someone die suddenly or get badly hurt or killed
64. Some other sudden event that made you feel very scared, helpless, or horrified
65. Sudden move or loss of home and possessions
66. Suddenly abandoned by spouse, partner, parent, or family

Select items from the Childhood Experiences Survey (Mersky et al., 2017) (14 items)

Anytime before the age of 18 (coded dichotomously, as indicated by bolded choices)

67. How often did a parent or adult in your home routinely ever swear at you, insult you, or put you down? Never, rarely, sometimes, **often or very often**
68. How often was there an adult in your household who routinely tried hard to make sure your basic needs were met? **Never, rarely, sometimes,** most of the time, or always
69. How often was there an adult in your household who made you feel safe and protected? **Never, rarely, sometimes,** most of the time, always
70. Did you live with anyone with anyone who was a problem drinker or alcoholic? **Yes** or no
    Did you live with anyone who used illegal street drugs or who abused prescription medications? Yes or no [either one = coded yes]
71. Did you live with anyone who was depressed, mentally ill, or suicidal? **Yes** or no
72. How often did your parents or adults in your home ever slap, hit, beat, kick, or physically hurt each other? Never, **once, or more than once**
73. Did you Live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility? **Yes** or no

74. Were your parents separated or divorced? **Yes,** no (parents were married), or no (parents were not married)
75. As a child, how often did your family experience serious financial problems? Never, rarely, sometimes, **often, or very often**
76. How often were you were you hungry because your family could not afford food? Never, rarely, sometimes, **often, or very often**
77. How often were you bullied or severely teased by other children or adolescents? Never, rarely, sometimes, **often, or very often**

78. To what extent have you addressed the experience or resolved distress related to the experiences previously reported?

1 (not at all)   2   3   4   5 (a lot)

79. In what ways have you addressed or processed the previously reported experiences? (check all that apply)
    a. I have not addressed the experience because I have not experienced impairment
    b. I have not addressed the experience, but I have experienced impairment
    c. Therapy or other mental health treatment
    d. Talking with trusted friends or family
    e. Obtained legal help
    f. Obtained help for health or physical impairment
    g. Other:

VIII.   **Perceived Dosage and Salience of Student Trauma**

The structure for this scale was modeled after Borntrager et al. 2012 and Cieslak et al., 2013a.
*(*3 items)

When thinking about potentially traumatic experiences of your students, please think of the list provided in the previous section.

80. What proportion of students that you directly work with in your current role do you believe have experienced traumatic or adverse childhood experiences (Please think about the types of experience from the personal trauma history questions)?
    a. None
    b. Less than half
    c. Approximately half
    d. More than half
    e. Almost all
81. Approximately how often do you hear about student trauma?
    a. Never
    b. Several times a year
    c. Once a month
    d. Several times a month

e. Once a week
f. Several times a week
g. Every day

82. How strongly do you agree that your work addresses issues related to student trauma?
   a. Strongly disagree
   b. Somewhat disagree
   c. Neither agree nor disagree
   d. Somewhat agree
   e. Strongly agree

IX. **COVID-19 Impact**

Author created items (2 items)

83. How much has the COVID-19 pandemic impacted your emotions or mental health during the current school year?
   a. Not at all
   b. A little
   c. Somewhat/ moderate amount
   d. A lot
   e. Very severely

84. How much has the COVID-19 pandemic impacted your emotions or mental health during the 2020-2021 school year?
   a. Not at all
   b. A little
   c. Somewhat/ moderate amount
   d. A lot
   e. Very severely

Appendix E

Multiple Regression Assumptions

The following presents data for visual inspection of the multiple regression assumptions of

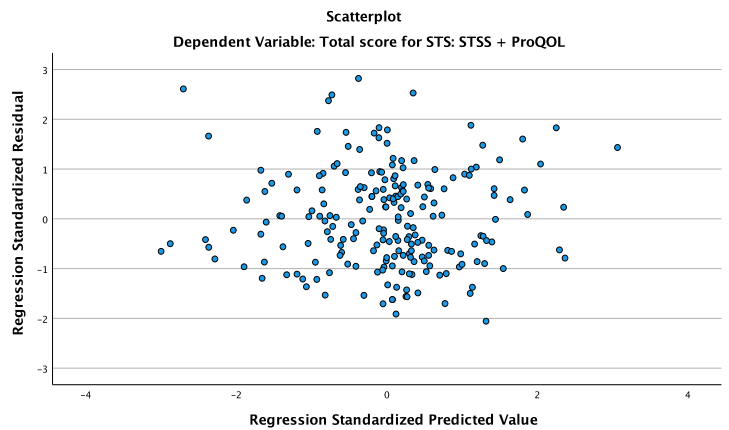normality and homoscedasticity. Please see methods section for discussion of multicollinearity.

Research Question 2- Professional Factors
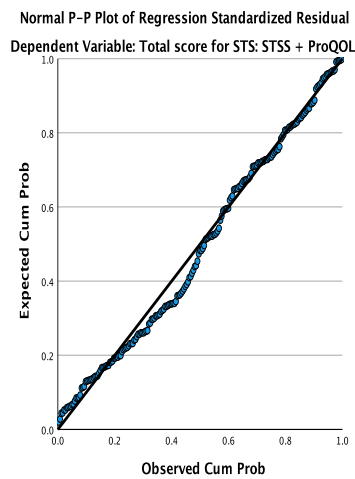
a) Standard multiple regression
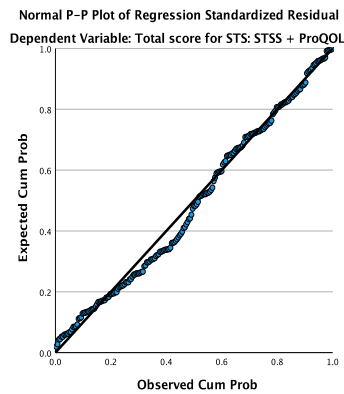
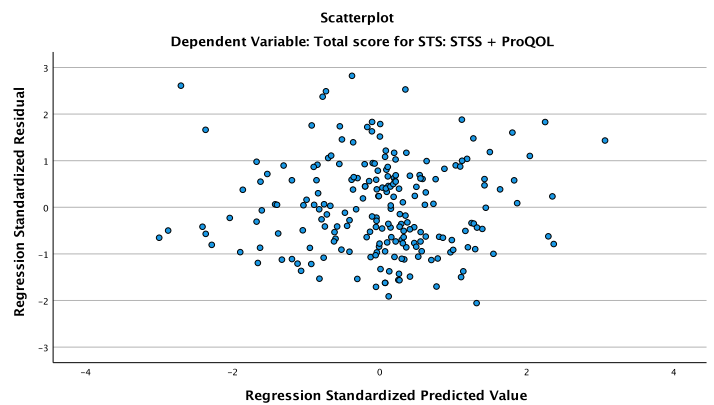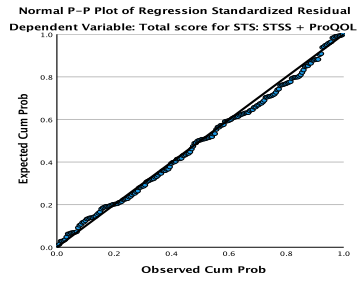| Normality	Homoscedasticity

b) Hierarchical multiple regression

Normality	Homoscedasticity

Research Question 3- Personal factors

a) Standard multiple regression

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b) Hierarchical multiple regression
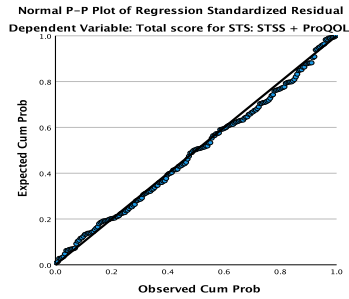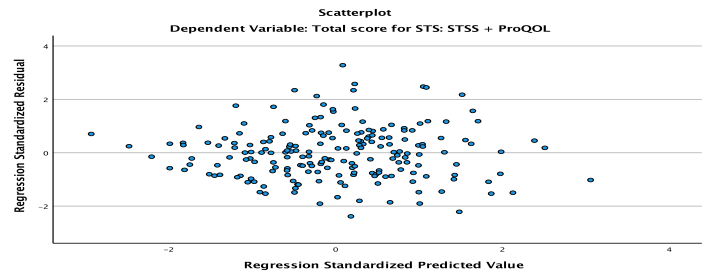
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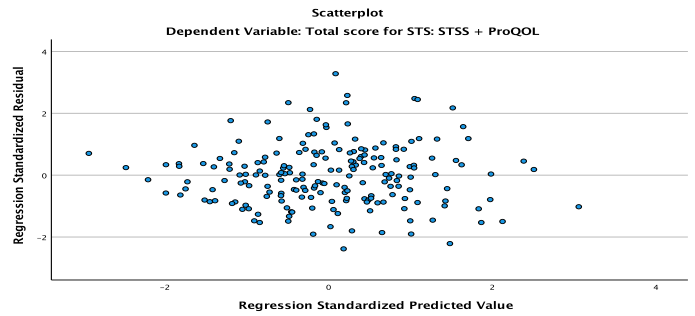
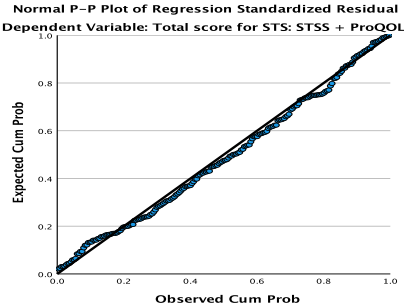**Research Question 4- Moderation analyses**

a) Significant moderation interaction

<div style="display:flex; justify-content:space-between;">
Normality
Homoscedasticity
</div>

Normal P–P Plot of Regression Standardized Residual
Dependent Variable: Total score for STS: STSS + ProQOL

Scatterplot
Dependent Variable: Total score for STS: STSS + ProQOL