Perceived Stress From COVID-19 on High School Students with Previous Trauma in a Rural County in the Southeastern United States

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Department of Community Care and Counseling, Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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Abstract

The COVID-19 pandemic created historical trauma that will be felt for years to come. As the world begins sifting through the impacts, adolescents with previous trauma could be among the greatest sufferers. Rooted in trauma theory, this study aimed to examine the effects on high school students with previous trauma in a rural county in the southeastern United States. Variables such as previous mental health or counseling services, gender, socioeconomic status, race or ethnicity, and number of generations living in the home were all examined for those students having four or more ACEs. Through a quantitative design and with passive consent, high school students were asked to complete an online survey using demographic data, as well as the ACEs questionnaire and the PSS-10-C to evaluate perceived stress effects of the pandemic on students with previous trauma (Campo-Arias et al., 2020; Cohen et al., 1983; Felitti et al., 1998). Completed surveys totaled 446 but the sample was then narrowed to only include students with four or more ACEs (n=67). Although results for each hypothesis were not significant, there is more to explore in this topic of interest. With these results, the opportunity exists for further research with these variables to understand the impacts of the COVID-19 pandemic on students with previous trauma.

Keywords: trauma, COVID-19, perceived stress, high school students

Dedication

To Carter, Karen, and Lance, you all have seen me on my worst days and yet still continue to encourage me to make it to the finish line. I'm in awe of your intelligence, strength, perserverance, and love for others. Thank you for allowing me to take this journey because I know it took valuable time away from being a mom but you never complained. You guys are my everything and you will never fully understand just how loved you are! I hope this journey has taught you to never give up on your dreams because you can do anything you set your minds on. God has a unique and special plan for each of you and I pray that you will always follow His leading to make your own dreams come true!

To Mom and Dad… I never understood how much you loved me until I had children. I know watching your children suffer has never been easy. But you have been there for me for each up and down I have encountered! Mom, thank you for never letting me give up and always being my cheerleader! You will never know how much I needed it and how appreciated you are. Dad, thank you for always taking care of me, the kids, and ALL the things around the house! We couldn't make it without you both! You are truly a blessing and the best example of the parents that God wants us to be!

To Maria and Kyle, I'm so blessed to have you all in my life! Maria, you definitely add the laughter I need every day and I'm so thankful God made you my sister! Thank you for the encouragement, helping with the kids, and providing opportunities for them that have blessed us beyond measure. Jack and Walker, thank you for all the prayers! Your faith is contagious and I can't wait to see your prayers answered! You all have made the journey one with plenty of sunshine!

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This God dream was created from the depths of brokenness and brought to life by those around me who supported me through the struggles. To my Lord and Savior, Jesus Christ, I will never be worthy of your love. At times, I felt like you were all I had and somehow I knew that was enough. Thank you for allowing my pain to not to go to waste. I pray that you always guide my steps in helping others.

In the midst of pain, holding that hope of better days to come is a means of survival and so many people held that hope for me along the way. To my friends, you have cried with me, laughed with me, prayed for me, and encouraged me on this journey! I can never repay you all for what you have added to my life! Thank you for all the unique and individual roles you play in my life at just the right time!

Thank you to the faculty, staff, and students of Tuscola High School. I appreciate the time and effort you spent helping me through this process. We will continue to see the impact of COVID-19 and I will do my best to assist you in the journey ahead.

This has been a difficult journey through the dissertation process. I appreciate the assistance of my committee members during this challenge.

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Chapter One: Introduction

Overview

Beginning in December 2019, COVID-19 spread rapidly through China and internationally, resulting in illness, death, and various psychological consequences worldwide (Zhang et al., 2020). The pandemic affected the population in ways that cannot even be comprehended thus far. In a survey of rural Chinese adolescents with pre-pandemic maltreatment, Guo et al. (2020) found that the impact of COVID-19 exposure created stronger mental health issues. For high school students with previous trauma, the effects of the COVID-19 pandemic are unknown, as teachers, parents, and other educators struggle to understand student behaviors, reactions, and decisions. Students with previous trauma are more at-risk for developing mental health issues, behavior problems such as substance abuse, and poorer academic functioning (Connell et al., 2018). The psychological impacts from COVID-19 can be far greater for adolescents than adults because adolescents are more vulnerable to stress (Zhang et al., 2020).

Background

By March 2020, school closures and other social distance measures were in place across China and in 106 other countries to prevent rapid transmission of COVID-19 (Yang-feng et al., 2021). When education abruptly shifted to online learning due to shelter-in-place restrictions, there were ramifications on students' mental health, including increased loneliness, anxiety, and depression (Gazmararian et al., 2021). Stay-at-home mandates brought about challenges for adolescents, such as isolation from peers, uncertainties about the future, increased fear, and other mental health concerns (Cockerham et al., 2021).

The pandemic had a profound effect on families, many of whom experienced an increase in parental stress, social distancing concerns, and child abuse and neglect (Calvano et al., 2021). The impact of the stress has been exacerbated by social isolation and the inability to use familiar coping mechanisms, such as visiting with friends and family (Imran et al., 2020). Parenting behaviors were influenced by the psychological distress from COVID-19, as parents often became more emotionally withdrawn, critical, irritated, and less sensitive and supportive to their children (Janssen et al., 2020). Trying to provide for the family, issues with communication, and the distance-learning transition created stress for parents (Catalano et al., 2021). Stress from COVID-19 also caused some parents to worry about their own concerns, which ultimately affected the emotional well-being of children who are sensitive to the emotional state of the adults around them (Imran et al., 2020).

As the pandemic abruptly shut down the country to contain the virus, a wide range of stressors were introduced and exacerbated, such as economic insecurity, loss of social networks, and gaps in educational achievement (Gazmararian et al., 2021). Many institutions were caught off guard by the pandemic, with few guidelines in place to plan or deliver mental health services (Phelps & Sperry, 2020). Households struggled with various tasks of online learning. Students with disabilities, English language learners, and those from lower socio-economic groups struggled to access the internet or devices to use, which widened the educational gap (Catalano et al., 2021). Working parents as well as those trying to work from home struggled with the responsibility of continuing their children's education throughout the COVID-19 shut downs (Bhamani et al., 2020). Students struggled completing assignments due to lack of supervision by parents who were overwhelmed, unable to help, or unaware that students were not completing their work (Catalano et al., 2021).

Pre-pandemic schools not only provided academic learning, but also aided in development, socialization, and emotional and academic support from teachers, all of which are important for children's psychological well-being (Larsen et al., 2021). During the pandemic and the online learning that ensued, many of these key elements were missing from adolescents' lives. Because many students experienced heightened levels of anxiety and boredom during this time, behaviors and feelings associated with anxiety and boredom increased, such as overeating and sadness due to missing their usual activities, school, and friends (Ares et al., 2021). With online learning, teenagers suddenly lost the ability to attend sporting events, visit with family and friends, and build community in other ways, all of which are needed at this key developmental stage (Imran et al., 2020). Students with pre-existing traumatic experiences or unresolved grief were particularly vulnerable when considering post-disaster mental health (Saltzman et al., 2020). Now that students are back in traditional classrooms, the psychological effects of the pandemic are being felt.

Individuals can react to trauma in a variety of ways. Children respond to crises based on their prior exposure to emergency situations, their physical and mental health, and other family features such as culture or socio-economic status (Imran et al., 2020). In children, trauma could be misidentified as depression, attention deficit issues, oppositional defiant disorder, conduct issues, anxiety, separation anxiety, and reactive attachment disorder (Arbeau et al., 2017; Steele & Malchiodi, 2012). Because of exposure to trauma, maltreatment, or adversity, youth can meet the criteria for several diagnoses, although no specific diagnosis currently exists that is capable of adequately describing the impact of trauma (Arbeau et al., 2017). Those experiencing trauma have difficulty distinguishing between negative emotional states and negative emotions and bodily reactions, possibly due to greater avoidance and severity in the trauma response (Viana et

al., 2017; 2018). Negative coping skills include avoidance behaviors that impede adaptation and psychological stress, leading to feelings of helplessness or loss of control (Zhang et al., 2020). Those who have survived previous trauma and suffer from posttraumatic stress disorder (PTSD) symptoms are vulnerable to the psychological effects of the COVID-19 pandemic (Hamam et al., 2021). Trauma symptoms also include difficulty with attentiveness, concentration, completing tasks, learning new concepts, and engaging with peers (Arbeau et al., 2017; Cohen et al., 2012). Children and adolescents with complex trauma often exhibit cognitive difficulties such as concentration, perception, retrieving memories, time management, planning, and finishing tasks (Márquez-Aponte, 2020). Without training in the effects of trauma, educators could misread the cues of trauma symptoms or triggered behaviors due to stigmatizing traumatized students (Márquez-Aponte, 2020).

This study is established in trauma and developmental theories that consider the effects of adverse childhood experiences and specific variables in conjunction with a national pandemic. Trauma is a dangerous or distressing event that causes intense physical, emotional, and psychological reactions that can overwhelm a person's ability to cope (Márquez-Aponte, 2020). Understanding these responses allows educators to recognize the need for more trauma-informed care to meet the needs of students. By recognizing the impact of trauma and how it can affect student behavior, educators can work toward creating safe and supportive environments (Martin et al., 2017). Negative coping strategies such as avoidance can impede adaptation (Zhang et al., 2020), causing difficulties in academics. Understanding the perceived stress effects of the pandemic on those students with previous trauma can help educators better understand how to deal with the psychological consequences of COVID-19.

Problem Statement

Students with previous trauma can often be stigmatized or unnoticed because of the behaviors they exhibit in school (Márquez-Aponte, 2020). Identifying and recognizing this unique population allows for interventions to be put in place to mitigate the effects of both the perceived stress of the pandemic and previous trauma. In the past, trauma has been examined by using the ACEs survey to measure 10 types of abuse, neglect, and household challenges that can create biopsychosocial difficulties (Felitti et al., 1998; Scott et al., 2021a). These range from family dysfunction to abuse and have consequences of a lifetime of behavioral, mental, and physical issues (Harper, 2019). Adverse childhood experiences can lead to poor coping skills such as disengagement, which can be detrimental to adolescents' educational experiences (Webb et al., 2021). Students with ACEs externalize behaviors such as difficulties with perception and regulating emotions, impulses, and self-destructive behaviors (Márquez-Aponte, 2020).

Two of the greatest challenges for adolescents during the pandemic were maintaining academic focus and learning to develop a work ethic when engaging in online learning (Scott et al., 2021b). Students who have executive functioning skill challenges found online learning more difficult due to attention issues, limited impulse control, and frustration tolerance (Rider et al., 2021). To meet student needs, educators must think contextually and holistically about how events, experiences, and family systems shape development and skillsets in the classroom (Scott et al., 2021a). Since mood affects motivation, understanding the relationship between emotional well-being and academic motivation in light of the COVID-19 pandemic is crucial (Klootwijk et al., 2021). Trauma-informed educators can use a trauma lens to better understand behavioral symptoms in the classroom as an indication of possible underlying needs to implement intervention techniques (Scott et al., 2021a). The prolonged duration of the pandemic

necessitiates discerning the impact on adolescent development, functioning, and responses to chronic stress (Branje & Morris, 2021).

A gap exists in the literature regarding how the pandemic affected those students with previous trauma/ACEs, students' perceived stress, and specific demographic variables such as gender, ethnicity, and socioeconomic status (Felitti et al., 1998). The COVID-19 pandemic exacerbated risk factors associated with suicidal risk and ACEs, especially among those students living in poverty, with limited access to healthcare, food security, housing, and financial stability (Bledsoe et al., 2021). Examining previous trauma and the perceived stress of the pandemic shed light on students' experiences. A lack of knowledge regarding prior counseling, gender, race, socioeconomic status, and number of generations living in the home make it necessary to better understand how the COVID-19 pandemic affected the perceived stress of students with previous trauma.

Purpose Statement

The purpose of this research was to consider how the COVID-19 pandemic affected the perceived stress of students with previous trauma. The shift to online learning was a quick fix during the pandemic, but the long-term consequences must be further evaluated (Oltean, 2020). With economic implications, social distancing measures, increased pressure on families, and reduced access to support services, numerous pandemic-related mental health risks exist for adolescents (Fegert et al., 2020). During this time, students not only struggled with academics, but also with hardships at home. Evidence-based services such as trauma-informed policies and programs can improve mental health and help students deal with traumatic stress (Phelps & Sperry, 2020).

By utilizing the ACEs survey and the Perceived Stress Scale of COVID-19 (PSS-10-C), quantifiable data can be used to measure the relationship between ACEs and the perceived stress induced by the COVID-19 pandemic (Campo-Arias et al., 2020; Cohen et al., 1983; Felitti et al., 1998). The Trauma-Informed Care Implementation Resource Center provides a copy of the original Adverse Childhood Experiences-Questionnaire (ACE-Q), including 10 trauma screeners (Trauma Informed Care Implementation Resource Center, n.d.). A quantitative, correlational research study was designed to consider the significance of a relationship between the ACEs questionnaire and the PSS-10-C in a rural county in the Southeast United States. The independent variables were the ACE scores that consider various types of traumas, along with gender, ethnicity, who the student lives with and how many generations are in home, free and reduced lunch status, and mental health services prior to the COVID-19 pandemic.

The dependent variable in the study was the student's perceived stress level from the COVID-19 pandemic. Correlational research allowed this study to assess the relationship between students with previous trauma, socioeconomic variables, and pandemic-related stress levels. Understanding this relationship enables educators to gain valuable knowledge about the impact of the pandemic on adolescents. Variables to be considered include gender, cultural considerations, and socioeconomic status. The challenges that adolescents experience from sustained, multiple stressors and trauma can create short- and long-term well-being and mental health issues (Rider et al., 2021). Challenges generated from the perceived stress of the pandemic created issues for students with previous trauma. More information about the relationship between ACEs and perceived stress from the pandemic allows educators to create interventions, programs, and policies to help meet the needs of students (Felitti et al., 1998).

Significance of the Study

Considering the perceived stress of a national pandemic on students with previous trauma in a rural county in the southeastern United States will allow educators to identify specific groups that need more assistance, target specific interventions, and assess for mental health concerns. Schools play a critical role in the prevention, identification, and treatment of mental health disorders and other issues (Larson et al., 2017). With half of all mental health disorders manifesting themselves by age 14, it is important to have early recognition and treatment of the potential impacts of COVID-19 to help protect adolescents' future mental health, development, learning, and well-being (Rider et al., 2021). Another traumatic event, Hurricane Katrina, exposed the need for communities and schools to invest in public health infrastructures to meet the needs of those impacted by trauma (Phelps & Sperry, 2020). Previous work regarding the pandemic is just now emerging, with few studies considering the needs of students with previous trauma and their stress levels during the COVID-19 pandemic. More research is needed to better understand the short- and long-term consequences of the pandemic on the well-being and psychosocial adjustment of adolescents (Branje & Morris, 2021). Research is also needed to better understand the needs of students with existing mental health challenges, those exposed to domestic abuse during quarantine, and those families directly impacted by the COVID-19 pandemic (Gazmararian et al., 2021). Understanding the unique needs within this rural population, such as gender, ethinicity, socioeconomic status, and more will allow educators to target specific populations with the interventions they need for healing. The more knowledge educators have regarding the effects of the pandemic, the more programs, accommodations, and adjustments that can be made to help adolescents with academic and mental health issues. Since children are required to attend school and spend most of their time there, schools are a logical

place for students and parents to access services they need (Cohen et al., 2012). Because of the proximity that educators have with students, schools have become a critical partner in providing mental health services and resources to adolescents (Gazmararian et al., 2021). By improving students' responses to traumatic events, resilience can be fostered to reduce the negative effect of the event (Yang et al., 2020).

Research Questions

This quantitative study was established on available information about traumatic events and the perceived stress effects from the COVID-19 pandemic on various demographics in a rural county in the southeastern United States. Students with previous trauma or four or more ACEs and certain demographic variables in relation to perceived stress related to the COVID-19 pandemic were the primary focus of the study (Felitti et al., 1998). Considering mental health services prior to COVID-19, gender, race and ethnicity, socioecomic status, and number of generations living in the home can offer insight into the imact on certain groups within the sample population, which could result in more in-depth educational and mental health interventions by targeting specific issues within rural populations and educational gaps resulting from the pandemic. A quantitative study of the ACEs questionnaire, the PSS-10-C, and demographic information allowed for a better understanding of the perceived stress from COVID-19 on those with previous trauma compared to their peers with no trauma (Campo-Arias et al., 2020; Cohen et al., 1983; Felitti et al., 1998).

Several research questions within this correlational study considered high school students from a rural county in the southeastern United States.

RQ1: Do prior ACEs and gender have an affect on perceived stress levels from the COVID-19 pandemic on high school students?

RQ2: Is there a difference between race and students with previous ACEs in regards to their perceived stress from the COVID-19 pandemic?

RQ3: Do prior ACEs and socioeconomic status affect the way that high school students perceive stress from the COVID-19 pandemic?

Definitions of Terms

1. Adverse Childhood Experiences (ACEs) – Adverse childhood experiences refer to 10 specific traumatic experiences that occur in childhood, including five types of maltreatment such as physical abuse, sexual abuse, emotional abuse, emotional neglect, and physical neglect, as well as five types of household disruptions such as divorce, domestic violence, mental health issues, substance abuse, and incarceration of a family member (Afifi et al., 2020b; Felitti et al., 1998).
2. Perceived Stress Scale of COVID-19 (PSS-10-C) – This assessment was adapted from the original Perceived Stress Scale to measure the perceived stress from the COVID-19 pandemic (Campo-Arias et al., 2020; Campo-Arias et al., 2021; Chatterjee & Tankha, 2021; Cohen et al., 1983).
3. Post-Traumatic Stress Disorder (PTSD) – A diagnosis that results from exposure to an event or series of events that are overwhelmingly stressful, perceived as dangerous to self or others, and impede adequate response (Schiraldi, 2009).
4. Trauma – Exposure to actual or threatened death, serious injury, or sexual violence through experiencing, witnessing, repeating exposure to, or learning that the traumatic event has occurred to a close family member or friend (Briere & Scott, 2015).

5. Trauma-Informed Care or Practices – This approach delivers services to individuals who have experienced trauma in a manner that is sensitive to trauma and can minimize harm (Isobel, 2021).

Summary

To assess the needs of students after the COVID-19 pandemic, it is important to understand the significance of the perceived stress on those students with previous ACEs in a rural population (Felitti et al., 1998). Pre-existing vulnerabilities such as child victimization, socioeconomic disadvantage, or a history of psychopathology can amplify the impact of the COVID-19 pandemic on mental health (Danese & Smith, 2020). Without this understanding, educators and parents could struggle to find needed interventions and mental health resources or to advocate effectively for students' needs. Understanding how perceived stress from the pandemic influences high school students with previous trauma will assist those working with these students in finding effective coping strategies and techniques needed to combat the negative effects of trauma and the pandemic. The COVID-19 pandemic is a historical trauma that is still being lived and studied. This quantitative study aims to clarify the effects and degree of stress from the pandemic and confirm how high school students with previous ACEs are responding in a rural county in the southeastern United States.

Chapter Two: Literature Review

Overview

The recent past and ongoing historical trauma of the COVID-19 pandemic changed students, parents, and educators. The COVID-19 pandemic and social distancing could have serious mental health consequences, especially for those with previous childhood traumatic experiences (Seitz et al., 2020). Adolescents are prone to higher rates of anxiety, depression, and stress, which could lead to higher rates of alcohol or substance use (Jones et al., 2021). Effects from previous trauma could leave students more vulnerable to the social upheaval that the pandemic has created (Guo et al., 2020). Prior trauma exposure and subsequent PTSD symptoms can intensify vulnerability, drain resources, and affect coping capacity, making students more susceptible to stress (Hamam et al., 2021). Furthermore, students with previous trauma might be at greater risk for mental health issues, academic problems, and social integration hardships after the pandemic and upon the return to a traditional classroom setting.

Definition of Trauma

Trauma can be explained as events that interfere with a person's ability to cope with their emotions from the threat to one's safety (Phelps & Sperry, 2020). Previous trauma includes a variety of events or experiences in which a person feels threatened or is exposed to death or serious injury (Briere & Scott, 2020). The causes of trauma can differ greatly and include community trauma or large-scale disasters, war and cultural upheaval, interpersonal violence, domestic violence, maltreatment, abuse, and sexual assault (Levers, 2012). Two types of trauma include acute trauma, which involves an isolated event, and complex trauma, which include chronic episodes or multiple experiences that cause harm to one's physical or psychological safety (Márquez-Aponte, 2020). Complex trauma might include exposure to domestic violence

or repeated emotional, physical, or sexual child abuse. Childhood abuse can be linked to an increased risk of developing greater illness severity and other psychiatric conditions (Perez et al., 2017). Emotional abuse and neglect leaves victims predisposed to various diseases, post-traumatic stress disorder (PTSD), and other kinds of trauma (Banker et al., 2019). Both acute and complex trauma causes mental health issues as the individual involved tries to cope with the physical and psychological symptoms of the event (Márquez-Aponte, 2020). Abuse and neglect result in disturbed mood, cognitive distortions, posttraumatic stress, regulation issues, identity disturbance, and difficulties forming positive and lasting relationships (Briere & Scott, 2015). A connection could be made between repeated trauma exposure, such as child abuse and mental health issues, and various symptoms, including psychosis (Powers et al., 2016). The COVID-19 pandemic caused instability and worsened symptoms for those adolescents who have experienced complex trauma in the past (Márquez-Aponte, 2020).

Understanding the unique and complex issues that accompany childhood trauma is needed to recognize how the pandemic has affected this vulnerable population. For many children, a traumatic event is not necessarily a one-time incident that happened in the past; trauma factors, such as abuse, are gradual and if not addressed can change the physiology of a person (Stan et al., 2021). Childhood trauma leaves lasting physical and emotional vulnerabilities (Sapolsky, 2004). According to Briere and Scott (2015), childhood trauma showed a stronger relationship to psychosocial difficulties due to traumatic events occurring during key developmental stages. Trauma affects brain development, hormone management, disease resistance, and the body's response to stress, which can lead to later development of physical and psychiatric issues (Banker et al., 2019; Powers et al., 2016). In particular, childhood trauma comes at a fragile state of developing psychological and physiological systems; making it

difficult for children and adolescents to function cognitively, psychologically, socially, and emotionally (Cameranesi & Piotrowski, 2020). Changes in the limbic system, including the hippocampus and amygdala, affect adolescents' emotional regulation, as well as memory formation (Carrion et al., 2012; Márquez-Aponte, 2020). Trauma causes distress and physiological effects, resulting in irritability, sleep disturbance, self-destructive behavior, and attention or concentration issues (Briere & Scott, 2015). The neurobiology of complex trauma affects adolescents' cognition, emotional regulation, self-concept, and behavioral control, which in turn could affect how they learn (Márquez-Aponte, 2020). The hypothalamic-pituitary-adrenal axis is affected, as this part of the brain is responsible for responding to stress through hormones (Banker et al., 2019). The flight or fight response of the body sends a continuous release of adrenaline and cortisol, which affects the overall physical health of the victim with higher glucose levels, blood pressure, heart problems, and immune system issues (Márquez-Aponte, 2020).

Adolescents are developing their personal identities, social skills, cognitive abilities, and perspective-taking abilities, and previous trauma can affect the healthy development of these skills (Blaustein & Kinniburgh, 2019). Adolescence is a time of physical, emotional, and cognitive change, more abstract and long-term thinking, and risk-taking behavior to gain independence, but those who have experienced ACEs can be less successful at navigating these changes (Soleimanpour et al., 2017). The reaction to trauma can be influenced by the duration, intensity, and consequences of the traumatic event (Minkos & Gelbar, 2020; 2021). Symptoms of trauma exposure meets the criteria for other diagnoses, such as attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder (ODD), or attachment issues such as reactive attachment disorder (RAD) (Arbeau et al., 2017).

Understanding the connection between previous trauma and the impact of the COVID-19 pandemic on adolescents is critical.

Theoretical Framework

The theoretical framework used for this study is trauma theory, which is established in the understanding of the vast impact that trauma can have on the human mind and body (Cameranesi & Piotrowski, 2020). Trauma disrupts basic bodily processes, disturbs physiological homeostasis, and destabilizes psychological functions (Dent, 2020). Highly stressful events can overwhelm a person's ability to cope, which can result in neurobiological alterations and cause mental health symptoms (Cameranesi & Piotrowski, 2020). Contemporary trauma theory provides a paradigm shift from viewing victims as having poor functioning due to their own weakness to being survivors who are psychologically and physically injured and in need of healing (Goodman, 2017). Trauma theory is an understanding of the neuroscience behind trauma and a realization that recovery can take cognitive restructuring (Cameranesi & Piotrowski, 2020). Trauma theory provides a conceptual foundation for understanding the bio-psychosocial impact of trauma on brain functioning and the development of social and emotional skills (Goodman, 2017). A framework developed from simple concepts in trauma research guides recovery through techniques such as somatic experiencing, sensorimotor psychotherapy, and eye movement desensitization and reprocessing therapy (Dent, 2020). This theoretical framework allowed the study to focus on perceived pandemic stress on students with previous trauma to better understand their reactions.

Related Literature

One way to measure previous trauma is through a brief scale known as the Adverse Childhood Experiences (ACEs) assessment, which links exposure to brain and body diseases

(Felitti et al., 1998; Zarse et al., 2019). Typically, these experiences are divided into two categories that assess both child maltreatment and family challenges (Afifi et al., 2020a). ACEs include physical abuse, verbal abuse, sexual abuse, physical neglect, emotional neglect, an alcoholic parent, a parent who is a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and a parent's divorce (Zarse et al., 2019). Expanded ACEs have been considered in the investigation of the impact of a foster care placement or the involvement of a child protective organization (Afifi et al., 2020a). Around 45% of children in the United States have experienced at least one ACE (Bryant et al., 2020). The most common ACE for adolescents is the separation or divorce of a parent, followed by economic hardship (Henderson et al., 2020). Adolescents are at a higher risk than younger children for sexual abuse or assault, especially adolescent girls (Grasso et al., 2015; 2016).

ACEs scores have been correlated to health problems, as well as impacts to behavior and mental health (Afifi et al., 2020a; Fegert et al., 2020; Felitti et al., 1998; Kidman et al., 2019; Wolff et al., 2018). Adults with four or more ACEs have been shown to be the most prone to major health issues later in life and have lower socioeconomic status and educational attainment (Hege et al., 2020). Bomysoad and Francis (2020) found that the impact on mental health in adolescents increases as the exposure to ACEs increases. ACEs are associated with elevated risk of suicide, substance abuse, impulsive and risk-taking behaviors, and other mental health issues (Henderson et al., 2020; Wolff et al., 2018). A study by Wan et al. (2019) demonstrated that the effects of ACEs combined with a lack of social support could increase self-injurious behavior and suicide among adolescents. These behaviors could have increased as a result of the pandemic, which affected adolescents' ability to access needed social supports during school closures and government lockdowns.

Understanding trauma and how it impacts students can be assessed in a number of ways. Although there is a need to measure trauma, the ACEs item construction can lead to concerns about validity, reliability, and response interpretability (McLennan et al., 2020). Many studies on ACEs are small and are not population-based, creating challenges for evidence that can be validated (Steptoe et al., 2019). Numerous studies have considered predictive validity, but the 10 ACEs were not selected from measurement theory and testing and therefore need further research to strengthen validity (Mersky et al., 2017). Knowing a student's ACE score would not necessarily identify the severity of their needs or appropriate interventions (Eklund et al., 2018; Felitti et al., 1998). Additionally, quantifying the ACEs questionnaire does not take into consideration the impact of frequency, severity, or duration of the trauma or the developmental stage in which the event or events have occurred (Grasso et al., 2015; 2016). Examining other assessments along with the ACEs survey provides a bigger picture of how trauma effected the student's perceived stress. Previous studies with ACEs have used adult populations and further research is needed to consider assessing, addressing, and preventing ACEs in children and adolescents (Bethell et al., 2017).

Students with previous trauma or those with previous ACEs are more vulnerable to the psychological consequences of the COVID-19 pandemic (Fegert et al., 2020; Felitti et al., 1998; Guo et al., 2020; Henderson et al., 2020). Those who have previous ACEs are more likely to develop behavioral and mental health issues, but their ACE score could also increase because of COVID-19. During the pandemic, parents' increased stress and mental health issues could have affected adolescent ACEs scores if domestic violence or substance abuse was present in the home (Calvano et al., 2021). A crucial buffer and protective factor against trauma includes positive peer relationships, which individuals living in tumultuous households are lacking

(Moses & Villodas, 2017). With the social isolation of the pandemic, ACE scores could increase as students find themselves in more situations with their abusers, witnessing more domestic violence, or seeing their caregivers suffering from mental illness brought on or exacerbated by the pandemic (Bryant et al., 2020; Calvano et al., 2021; Fegert et al., 2020). Those with cumulative adverse experiences are already at risk for issues with social adjustment, risk-taking behaviors, and depression (Bomysoad & Francis, 2020; Moses & Villodas, 2017). Pandemic isolation has created unknown issues that will only be seen in years to come. ACE scores can be a way to identify at-risk students and promote resiliency and self-worth despite hardships such as financial challenges, parental conflicts, and exposure to violence (Phillips et al., 2019).

Students with Previous Trauma

Students with previous trauma or ACEs could experience various symptoms or have a diagnosis of PTSD with possible comorbid issues (Blaustein & Kinniburgh, 2019; Felitti et al., 1998). Levers (2012) stated that the diagnosis of PTSD is unique because the manner of causation stems from outside stressors and trauma exposure which meet several other diagnostic criteria. According to Briere and Scott (2015), symptoms of PTSD fall into four categories, including re-experiencing the traumatic event, avoidance of certain stimuli that are trauma related, numbing or negative cognitions, and hyperarousal or hyperactivity. Adolescents with multiple ACEs from early childhood, such as emotional abuse or a combination of having an impaired caregiver, physical abuse, or neglect, were more likely to experience PTSD symptoms (Grasso et al., 2015; 2016).

What teachers determine as disengagement or a lack of effort during online learning could be avoidance behaviors from previous traumatic stress. Blaustein and Kinniburgh (2019) stated that children and adolescents who have experienced previous trauma could have a difficult

time understanding what they are feeling, how to express it, and how to cope with their feelings. Some cultures experience more difficulty in recognizing and regulating emotions related to trauma (Thurston et al., 2018). Trauma can impact student health and education, increasing the likelihood of students having to repeat a grade in school, experiencing learning and behavioral issues, and engaging in sexual activity and pregnancy (Soleimanpour et al., 2017). Some students withdraw, become more agitated, and have difficulty with memory recall (Minkos & Gelbar, 2021; 2020). The avoidance of trauma-related stimuli include deflecting thoughts, feelings, memories, activities, people, or conversations that might create stress (Briere & Scott, 2015), resulting in some students avoiding online learning, conversations on camera, and completing homework that they do not understand. Avoidance becomes easier and over time, students get further and further behind.

An increase in depression and anxiety is often correlated with a greater likelihood of PTSD symptoms in adolescents (O'Sullivan et al., 2021). Because of prolonged stress during the pandemic, students could have experienced physical symptoms such as headaches, stomachaches and digestive issues, or low energy (Danese & Smith, 2020). Exposure to higher psychological stress can also cause greater risk of common diseases such as viral infections, asthma, dermatitis, urticaria, intestinal infectious diseases, and urinary tract infections (Nelson et al., 2020). As students make their way back into the classroom, educators must use active listening to better understand student physical and emotional concerns, help students gain a realistic perspective of the event, and support and facilitate the student sharing of behavioral and cognitive reactions (Kolski et al., 2014).

As adolescents learn to deal with the various consequences of a national pandemic, their coping skills affect how they respond, especially those dealing with previous trauma. Because

adolescents are at a crucial stage of development, they are more vulnerable to pandemic-related stressors (O'Sullivan et al., 2021). Pre-existing psychosocial factors such as abuse, socioeconomic disadvantages, and a history of mental health issues amplified the effects of the pandemic for adolescents (Danese & Smith, 2020; Henderson et al., 2020). Those with four or more ACEs could have significantly more mental health issues due to the effects of trauma (Felitti et al., 1998; Guo et al., 2020). Fear of the pandemic, loss of family and friends, and social distancing have also adversely affected the way adolescents dealt with the pandemic (Imran et al., 2020). Long-term child abuse is traumatic for children because of its unpredictable nature, which is similar to the unpredictable nature of a global pandemic (Stan et al., 2021). Schools must be prepared to identify and offer services to those students who have been affected by the psychological effects of the pandemic due to their previous trauma.

Effective coping skills can make difficult situations easier to manage and guard against mental health issues (Liang et al., 2020). However, adolescents are still developing their coping skills and lack the ability to manage the social and psychological distress caused by the pandemic (Hamdan-Mansour, 2021; Imran et al., 2020). With a lack of experience in handling difficult situations, needed coping skills are not developed and adolescents can experience long-term effects from the social isolation aspect of the COVID-19 pandemic (Laing et al., 2020). Adolescents need assistance as they work through the issues they faced during the pandemic. Those with previous trauma could have adapted in negative ways or developed various negative coping skills to deal with issues they have faced. Negative coping skills lead to more psychological issues such as depression, anxiety, and substance abuse (Liang et al., 2020; Zhang et al., 2020). Being able to adapt to situations using one's coping skills makes a positive outcome more likely (Truzoli et al., 2021). The social isolation and hardships faced during the pandemic

not only changed education, but personal issues at home as well. Therefore, adaptation is needed in various aspects of an adolescent's life to navigate the COVID-19 pandemic successfully. Having coping resources and protective factors in place allows individuals to reduce the negative psychological symptoms from stress originating from the pandemic (Truzoli et al., 2021).

Some individuals are more susceptible to developing mental health issues surrounding the social isolation, income disruption, and fear of the pandemic (Unützer et al., 2020). The social distancing caused by the COVID-19 pandemic generated widespread panic, anxiety, and depression (Chakraborty, 2020). Adolescents are more vulnerable to the effects of the pandemic as adolescents are more susceptible to stress than adults (Larsen et al., 2021; Zhang et al., 2020). Adolescents with previous maltreatment are more susceptible to mental health issues post pandemic due to their development, fragile self-esteem, and the importance of peer interaction to their lives (Guo et al., 2020). Previous research on outbreaks has shown negative psychological effects such as anger, confusion, and PTSD symptoms (Danese & Smith, 2020). Other prevalent mental health issues stemming from the pandemic include generalized anxiety disorder, insomnia, intrusive thoughts, and acute stress (Marroquín et al., 2020). The pandemic was unique in the 21st Century and fear of the unknown was prevalent among all age groups.

The COVID-19 virus impacted adolescent mental health with increases in depressive symptoms and anxiety (Magson et al., 2021). Adolescents with previous trauma or more severe trauma in childhood exhibit more severe symptoms because of the perceived risk of the pandemic (Kim et al., 2020). The most common mental health issue in adolescents is anxiety, which the pandemic increased exponentially (Qi et al., 2020). In addition to distraction, boredom, and loneliness, parents reported that their adolescent children spent increased time engaged with technology, slept more, and spent less time in physical activity during the

pandemic (Cockerham et al., 2021). Developmental changes and hormones made dealing with large scale stressors more difficult (Zhang et al., 2020). Concerns about violence, unemployment, and financial instability have been noted due to specific pandemic fears (Chakraborty, 2020). As students make their way back to the classroom, Marroquín et al. (2020) suggested that mental health resources are needed to mitigate the psychological effects of the COVID-19 pandemic and social distancing practices. Trying to eliminate educational gaps in learning placed stress on adolescents as they returned to a normal classroom setting (Fegert et al., 2020; O'Sullivan et al., 2021). Early ACEs lead to significant behavior problems later in life, and with the adversity of the pandemic, schools need to have interventions in place to combat mental health issues that arise (Choi et al., 2019; Felitti et al., 1998).

The pandemic and online learning have further isolated and challenged students' time management skills and academic motivation, as well as caused further manifestation of psychological symptoms (Scott et al., 2021; Taylor et al., 2020; Zhang et al., 2020). Jacobs (2016) explained that traumatic stress overwhelms a person's coping skills, resulting in emotional, physical, behavioral, and cognitive reactions. Avoiding schoolwork and living in denial of what needs to be done can be a defensive mechanism called under activation for those with previous trauma (Briere & Scott, 2015). Those with pre-existing mental health conditions are at greater risk for difficulties as they experience social isolation, times of uncertainty, lack of daily routines, and possible lack of services previously provided by the school (Jones et al., 2021). The pandemic could cause fear about contracting the illness, its effect on loved ones, financial abilities within the household, and sudden loss of community networks (Gazmararian et al., 2021). A lack of social support and previous psychological distress associated with childhood trauma, make those with childhood traumatic experiences more susceptible to the psychological

effects of COVID-19 (Seitz et al., 2020). Social support from family and friends helps mitigate the effects of trauma; therefore, the pandemic created issues that affected the social and relational aspects of trauma recovery (Briere & Scott, 2015; Saltzman et al., 2020). With more time at home during the pandemic, students could have witnessed more substance abuse or domestic violence, as well as spent more time at home with their abuser. Some children could be more prone to further mistreatment and exploitation (Imran et al., 2020). Although reports of abuse and neglect decreased during the pandemic, Google searches for how to report abuse increased (Bryant et al., 2020). If social isolation occurred in an abusive home, rates of child abuse and neglect could have increased (Imran et al., 2020). Time spent in social isolation and exposure to childhood traumatic experiences such as abuse and neglect can decrease stress sensitivity and therefore make students more vulnerable to stressful life events (Seitz et al., 2020). Having little to no ability to process emotional and social responses, students experienced numerous mental health symptoms as a result of the COVID-19 pandemic (Minkos & Gelbar, 2021; 2020). The psychological effects of the COVID-19 pandemic have affected the mental health of children and adolescents and limited their access to mental health resources (Henderson et al., 2020).

Social Isolation Creating Increased Trauma

The disruptions to education because of the COVID-19 pandemic have had far reaching consequences, as school systems were in unchartered territory (Kuhfeld et al., 2020). A return to in-person learning produced many fundamentals to consider in addressing students' educational and mental health needs. Caregivers reported concerns about students' wellbeing during online learning, but precautions were considered as students returned to schools (Limbers, 2021). Schools changed protocols to make students safer during the COVID-19 pandemic. For example,

Hyde (2020) stated that schools had to cancel or replace high-pandemic-risk activities such as chorus practice, where children and youth could be exposed, and instead provide online options.

Social isolation created by the COVID-19 pandemic left many students struggling with personal, social, emotional, and academic issues (Bhamani et al., 2020; Danese & Smith, 2020; Henderson et al., 2020; Hoekstra, 2020; Oltean, 2020). For adolescents with previous trauma, the social isolation of the pandemic created further trauma for those heavily dependent on peer interaction (Magson et al., 2021; O'Sullivan et al., 2021). School closures and community restrictions left students with little social contact with teachers, family, and friends, all of which affected family relationships (Henderson et al., 2020). A lack of routine reduced physical activity and engagement in academics, and also disrupted family routines (Melegari et al., 2021). Oltean (2020) explained that prolonged isolation could cause frustration, boredom, fear, and irrational thoughts. The emotional and social adjustment of some children and adolescents also made a difference in the way they handled loneliness, depression, anxiety, and attachment to caregivers (Wang et al., 2021). Pre-existing mental illness that coincided with the pandemic led to concerns about insomnia, anger and increased risk behaviors such as substance use (Esterwood & Saeed, 2020).

The lack of face-to-face contact with friends, teachers, and sometimes personal space at home led to an increase in school dropout rates, cases of violence against minors, and the exploitation of children (Oltean, 2020). Students with extroverted tendencies had a difficult time adjusting to the lack of social interaction necessitated by the pandemic (Smith et al., 2021). Those with introverted personalities had a more difficult time reintegrating into in-person learning. Because of stay-at-home orders and idle time, many adolescents sought connection in negative ways, leading to internet addiction and other poor behaviors (Jones et al., 2021). Some

working parents had to leave children alone for long periods of time, creating social isolation and possible deviant behaviors (Oltean, 2020). Without engagement in meaningful activities, students lost social, educational, and physical development opportunities (Bhamani et al., 2020). Social isolation during the pandemic caused students to experience loneliness and depression that may last up to nine years (Hertz & Barrios, 2021; 2020). Social distancing caused from COVID-19 allowed adolescents to be more indecisive and ambivalent, and to experience higher levels of anxiety and depression than they would have otherwise (Hoekstra, 2020).

The pandemic's effects on mental health were more detrimental for adolescents with previous trauma (Imran et al., 2020). Those with an ACE score of four or more are four times as likely to have depression (Jellinek & Swick, 2020). Previous ACEs increased vulnerability and triggered depressive symptoms (Felitti et al., 1998; Guo et al., 2020). Disease mitigation measures taken during the pandemic were severely traumatic for adolescents with preexisting psychiatric disorders (Imran et al., 2020). The social isolation of the pandemic eliminated activities that adolescents enjoyed and needed for mental health. Milestone events viewed as a rite of passage were canceled, including awards programs, proms, and graduations, which negatively affected students and their well-being (O'Sullivan et al., 2021). A significant decrease in positivity was seen during the pandemic, such as a decline in happiness, joy, and pride (Cockerham et al., 2021). Students with previous trauma needed social outlets, activities, and supports to aid in their coping skills. Positive peer interaction mitigated the effects of previous trauma and ACEs scores for adolescents (Moses & Villodas, 2017). With the pandemic limiting positive interaction, students struggled with their mental health needs. Social isolation prevented students from participating in sports, clubs, music and community events creating difficulties for those students left with idle time. Changes to routines, lack of social support, and increased

household tensions further affected adolescent wellbeing (Larsen et al., 2021). The COVID-19 pandemic disrupted students during essential developmental and educational milestones (Henderson et al., 2020).

The COVID-19 Pandemic and the School Setting

The COVID-19 virus has had disastrous effects on the country with the acceleration rate of infection and fatality risk (Gates, 2020). As government shutdowns occurred to ease the spread of the pandemic, schools abruptly shifted to online learning. This shift created issues for students, parents, and teachers as life became unfamiliar. The ways that teachers approached learning, practice, and assessments changed as the amount of time spent learning was likely reduced for students (Wyse et al., 2020). At the end of the 2019-2020 school year, over 55 million children and adolescents had missed weeks of in-person learning (Pattison et al., 2021). Therefore, the need to better understand the psychological needs of students with previous trauma is important so that the educators can work to bridge the educational gaps that exist as a result of the pandemic.

Moving to online learning was chaotic and unorganized, leaving students and parents confused and teachers distressed (Oltean, 2020). Students have reacted in a variety of ways based on their experiences and developmental abilities (Minkos & Gelbar, 2021; 2020). Online learning is a valuable tool but cannot replace the social engagement of a teacher and other students (Chamberlain et al., 2020). At school, students often have access to school counselors, case managers, school social workers, and mental health workers. During the pandemic, students lost access to services that they used previously or needed. An increase in psychological effects such as anxiety, stress, insomnia, confusion, boredom, and anger were seen in students trying to adapt to online learning (Al-Taweel et al., 2020; Matias et al., 2020). Those who experienced

more difficult issues with online learning reported more depressive symptoms (Magson et al., 2021).

Adolescents were particularly vulnerable to mental health issues during the COVID-19 pandemic due to the social isolation stemming from school closures (Hawes et al., 2021; O'Sullivan et al., 2021). Research is slowly emerging as parents and educators consider the specific ways that students were affected by the pandemic (Bryant et al., 2020). Online learning created poor mental and physical health for adolescents with fears fueled by the pandemic (Al-Taweel et al., 2020; Jones et al., 2021). Online learning created idle time from which teenagers lost physical education opportunities and replaced these activities with more screen time. This increased time spent on social media, smart devices, and overall screen time could cause an increased risk of mental health issues (Henderson et al., 2020). Student mental health suffered from the lack of routine and structure that came with the pandemic and shutdowns (Larsen et al., 2021; O'Sullivan, 2021). The routines that schools create allow students to experience peer interaction, become task-oriented, understand discipline, and learn socially-acceptable behaviors (Bhamani et al., 2020). Many adolescents experienced emotional instability, depression, impulsivity, and low self-esteem, as well as an increase in anxiety and depressive symptoms associated with the shelter-in-place confinement (Hawes et al., 2021; Lin, 2020). During the pandemic, low motivation towards academic studies and a lack of engagement in remote learning emerged, especially in males (Greenhow et al., 2020; Smith et al., 2021).

Educational Impact

The school environment has played an important role in creating better mental health and behavioral engagement for students (Quin et al., 2017). Schools have been a critical resource for students, offering peer interaction and academic mentors (Gazmararian et al., 2021). Children

with traumatic backgrounds rely on schools for emotional, social, and mental health supports (Phelps & Sperry, 2020). As students returned to traditional classrooms, it was imperative that schools consider the types of trauma that students have experienced and understand trauma-informed care. Recognizing factors that indicated trauma, such as involvement with Child Protective Services, numerous school enrollments, or time spent in foster care, will be important for schools to note. Risk factors that indicated trauma also included adolescents who have been involved in the juvenile justice system or psychiatric inpatients (Márquez-Aponte, 2020). Understanding risk factors could help schools recognize those students who need extra support as they transitioned back to a traditional classroom setting.

Online learning created various obstacles for parents, teachers, and students as they confronted the abrupt switch from in-person to online learning. The educational response in the United States and the United Kingdom saw challenges in trying to transfer learning to digital formats, and relied on parents to be the educators (Greenhow et al., 2020). The pandemic illustrated the inability of some parents to support their students for a variety of reasons (Oltean, 2020). During school closures, many working parents struggled to make remote learning work in their households (Kuhfeld et al., 2020). Parental involvement has also varied due to employment, social and economic factors, and family-related issues (Wyse et al., 2020). Parents who worked outside the home had to leave their students unattended and on their own to learn time management skills needed for online learning. With so many students at home and parents at work, many students spent too much time in front of screens. Parents' income levels, education levels, and digital media competency also contributed to their ability to help students with online learning and access to the needed technologies (Catalano et al., 2021; Kaden, 2020; Minkos & Gelbar, 2021; 2020). Not having access to the resources needed for online education widened the

existing gap in the field of education. With limited access to technology or internet, lower income families had to rely on other technology sources such as smart phones (Catalano et al., 2021). Additionally, students and parents struggled to understand new technology and learning platforms that assisted with online learning (Bhamani et al., 2020). Some districts required more time to facilitate online learning, secure logistics, distribute materials needed, and get technology devices to students, which caused delays in instruction (Minkos & Gelbar, 2021; 2020).

Parental coping and response to the emotional needs of children and adolescents affected how some adolescents responded to the pandemic (Wang et al., 2021). Increase in parental stress caused poor parental coping skills, which increased student behavioral issues (Calvano et al., 2021; O'Sullivan et al., 2021). Unemployment and new financial burdens caused increases in substance abuse and depression in parents, increasing adversity for students (Jellinek & Swick, 2020). Adolescents who witnessed their parents' stress brought on by the pandemic internalized their feelings (Henderson et al., 2020). Adolescents who grow up with healthy attachments have more confidence in their feelings, perceptions, problem-solving skills, and ability to find support for their problems (Márquez-Aponte, 2020). Emotional needs as well as physical needs such as exercise and nutrition affected students in a variety of ways. With the lack of access to meals eaten in the school cafeteria, poor nutrition was also a concern for some parents (Oltean, 2020). Teachers who were unfamiliar with online platforms created challenges for students. Looking at various faces on a screen instead of being in the same room created communication barriers to learning for both teachers and students. With students online, teachers had difficulty discerning and understanding emotional cues (Cameron-Standerford et al., 2020). Interactions had to change with online learning, and many teachers struggled to maintain communication with students (Johnson et al., 2021). Along with technology and learning needs, emotional needs have been

difficult to identify. Seeing students only virtually made it difficult to recognize and help those who were anxious, confused, and overwhelmed (Cameron-Standerford et al., 2020).

The switch to online learning platforms during the COVID-19 pandemic was difficult for many students. Students had difficulty adapting to a different culture of learning, which increased anxiety and brought about negative psychological impacts (Karaman et al., 2021). Learning to be self-directed in an online capacity called for students to self-assess, make decisions, and implement changes as needed (Carter et al., 2020), which was difficult for many students, as their routine and in-person schooling was abruptly interrupted. Sleep disturbances such as students going to bed later and sleeping later have also interfered with online learning (Gruber et al., 2020). Some adolescents had jobs essential to their family's income (Williams et al., 2021) and found themselves focusing on work rather than their education. Additionally, lack of parental support, issues with attachment, and other sociological and psychological issues affected online learning (Lin, 2020).

Students needed effective support to develop the self-motivation and time management skills required for online learning (Greenhow et al., 2020). During the pandemic, students dealt with increased stress due to various online learning techniques and platforms, changing or deciding future plans, and navigating school demands (Williams et al., 2021). Learning to be self-directed was confusing and mentally demanding for some students; however, developing self-regulated learning strategies assisted students with online learning (Carter et al., 2020). Deficits in academic achievement occured because the pandemic extended the period of online academic instruction (Kuhfeld et al., 2020). The loss of peer and adult interaction affected the development of the social and emotional skills needed for adulthood (Bhamani et al., 2020). Positive peer interaction contributes to sense of well-being, increased life satisfaction, and better

social adjustment (Moses & Villodas, 2017). More research is needed to better understand where students are academically and socially as they have moved back to in-person learning and normal routines.

As students made their way back to the classroom, teaching them resiliency helped them readjust after the life-altering pandemic. Resiliency is the ability to bounce back after challenging circumstances and successfully adapt to new life situations (Blaustein & Kinniburgh, 2019). This will be especially important for those who have experienced previous trauma (Márquez-Aponte, 2020). Understanding prior trauma, mental health disorders, and prior academic challenges can allow educators and families to access needed support and build coping skills (Rider et al., 2021). Building resiliency allows those with previous trauma to combat the effects of ACEs and depression (Elmore et al., 2020; Felitti et al., 1998). Resiliency is important as teenagers deal with the life changes and difficulties brought about by the pandemic (Zhang et al., 2020). Improved knowledge about the pandemic, moderate physical activity, and predictable daily routines ease stress and anxiety in adolescents during this time (Qi et al., 2020). Exercise influences self-esteem and can distract students from negative thoughts, improving overall stress levels (Matias et al., 2020). In a study conducted by Yang et al. (2020), resiliency and positive emotional regulation made a difference in the way high school students responded to psychological stress. Adolescents who spent time outdoors and in nature play strengthened their resilience to stressors during the pandemic (Jackson et al., 2021). Those with social supports such as friends, family, and loved ones were found to have greater resiliency to make it through difficult circumstances (Killgore et al., 2020).

Posttraumatic resiliency building includes examining perception of self after trauma, interpersonal networks of social support, and new possibilities in the future (Gentry et al., 2017).

Learning to manage stress and trauma aids adolescents in personal growth and confidence that could become a protective factor in dealing with future stressors (Fegert et al., 2020). Students with prior ACEs can have healthier outcomes with increased resiliency to lower maladaptive behaviors and mediate the effect of ACEs (Elmore et al., 2020; Felitti et al., 1998). Higher rates of resilience are associated with lower ACE scores and lower rates of negative health outcomes (Hall et al., 2021). Mindfulness-based interventions in schools could help create resiliency and positive coping skills as students readapt to the normal school day (Minkos & Gelbar, 2021; 2020). As students process this historical trauma, making and keeping connections for students during and after online learning is pivotal to their success.

Previous Trauma and Socio-demographics

Addressing the complexities of previous ACEs and the impact of COVID-19 required a multifaceted approach that considered demographic factors, geographic context, and cultural influences. ACEs can be seen across cultural and socioeconomic status; therefore, understanding what types of trauma are prevalent in the community is helpful to educators (Felitti et al., 1998). The sociodemographic makeup of the family, including race and ethnicity, age of parents, and household income affect ACEs scores (Afifi et al., 2020a). Family culture, community environment, and poverty could impact ACEs scores (Felitti et al., 1998; Steptoe et al., 2019). ACEs can differ with geographical, social, and cultural norms, with some co-occurring ACEs with more than one variable (Ho et al., 2019).

The culture of family interactions, discipline, and exposure to ACEs within family relationships affect students' ACEs scores (Choi et al., 2019; Felitti et al., 1998). ACE scores for children can also increase if their parents experienced violence in the past in addition to pandemic-related job loss and financial difficulties (Calvano et al., 2021). Parental ACEs were

shown to have an impact on parenting skills and practices, influencing health and behavior of children in the household (Hege et al., 2020). Other cultural issues such as community violence, perceived discrimination, and racism have been associated with ACEs and symptoms of PTSD (Elkins et al., 2019; Thurston et al., 2018). Rural Appalachian students needed interventions in place to provide educational access, support emotional regulation, and encourage coping skills (McFayden et al., 2021).

Gender

Gender could play a role in how individuals respond to and cope with the stressors associated with isolation and pandemic-related restrictions. Data from adolescent populations in Australia and Canada suggested that female adolescents reported more symptoms of stress, anxiety, and depression during the initial months of the COVID-19 pandemic compared to their male counterparts (Marie et al., 2022). In study by Kalia et al. (2020) considering perceived threats from COVID-19, gender was a significant predictor of anxiety levels, with women reporting higher levels of anxiety compared to men. A similar study in China found female adolescent students have experienced a greater psychological impact during the COVID-19 pandemic compared to males (Zhou et al., 2020). Females had a more difficult time dealing with depressive and somatic symptoms during times of social isolation (Hawes et al., 2021). Adolescent females also reported more worry about school continuation due to the pandemic than their counterparts (Marie et al., 2022).

Race, Ethnicity, and Geographic Location

Families that are white, non-Hispanic, and two-parent households are less likely to experience ACEs (Thurston et al., 2018). Race and ethnicity are factors when assessing the health impacts of trauma, but PTSD symptoms are more prevalent among whites (Elkins et al.,

2019). In the United States, approximately 61% of black non-Hispanic children, 51% of Hispanic children, and 40% of white non-Hispanic children have experienced at least one ACE (Bryant et al., 2020). Historical traumas and adverse childhood experiences have affected Native American adolescents, leading to PTSD symptoms, poly-drug use, and suicidal ideations for many (Brockie et al., 2015). Additionally, rural areas of the Appalachian mountains experience health and social issues such as obesity, substance abuse, heart disease, and mental health disorders, with higher ACEs reported in areas of increased social and economic stress (Felitti et al., 1998; Hege et al., 2020). The Appalachian culture often fosters a strong sense of family and a mistrust of outsiders (Shorter & Christian, 2020). Appalachia spreads across 13 states and more than 400 counties, with a geographical disparity of health and social challenges (Hege et al., 2020). Residents in Appalachian areas are more likely to experience higher rates of domestic violence, anxiety and depression, child abuse, and substance abuse than those in urban settings (Thomas & Brossoie, 2019). There is limited research that considers the disproportionate rates of adversity or the inequalities in ACE distribution among groups based on ethnicity, gender, and economic status (Mersky et al., 2021). A need also exists for better understanding of the long-term impact of ACEs on mental health outcome, alcohol abuse, and food insecurity in the Appalachian area (Hege et al., 2020).

Socioeconomic Status

Although trauma affects children and adolescents in all socioeconomic backgrounds, those with a lower socioeconomic status are at an increased likelihood of experiencing undesirable life events (Phelps & Sperry, 2020). Students living in poverty have adverse experiences that are exacerbated by the financial and family dysfunction due to pandemic-caused economic hardship (Choi et al., 2019). The adversity experienced by those from lower

socioeconomic status could weigh on caregivers, giving way to the possibility of more child maltreatment (Walsh et al., 2019). Communities and neighborhoods that experience increased levels of social and financial stress will likely have more ACEs to report (Hege et al., 2020). Low socioeconomic families saw disproportionate negative effects from the COVID-19 pandemic which exacerbated existing inequalities (Kang et al., 2022).

Disadvantaged families have faced adversity in addition to educational concerns during the pandemic, such as changes to employment and financial layoffs. COVID-19 changed the way that schools, businesses, churches, government agencies, and hospitals operate, resulting in loss of jobs and resources (Wyse et al., 2020). Vulnerable populations such as ethnic minorities and lower socioeconomic groups were impacted by higher rates of COVID-19 and mental health risks from the pandemic (Gazmararian et al., 2021). The disruption of in-person learning had multi-faceted and complex issues, especially for those who are disadvantaged (Gazmararian et al., 2021; Minkos & Gelbar, 2021; 2020). Educational gaps widened for students with disabilities, those with language barriers, and students from disadvantaged schools (Catalano et al., 2021). Students with disabilities such as ADHD found it more difficult to control impulses, understand directions from teachers, and navigate mood and behavioral changes (Melegari, 2021). Unemployment and financial hardship produced a rise in the student homeless population, which also affects academics (Bishop et al., 2021). Some students lived in areas that did not have technology resources or places with internet access (Al-Taweel et al., 2020). Students from disadvantaged communities were the most at-risk for educational disruptions caused by the COVID-19 pandemic (Catalano et al., 2021). Some schools provided paper packets, WiFi hotspots, digital devices, and learning materials for those students who needed more resources (Kaden, 2020). However, students in low-income families or rural areas were disproportionately

affected by the lack of access to devices, services, and support provided by schools and medical professionals (Bledsoe et al., 2021). In a study conducted by Lackova Rebicova et al. (2020), financial status and difficult parental communication led to higher ACEs scores. Socioeconomic status in early childhood is directly correlated to the risk of experiencing ACEs and maltreatment (Straatmann et al., 2020). However, a study by Houtepen et al. (2020) found no evidence that ACEs are lower in high socioeconomic families and suggested that interventions should target all socioeconomic levels. The differing conclusions drawn by these studies underscore the need for a better understanding of the relationship between ACEs and socioeconomic status. Adverse experiences can occur in families across the socioeconomic spectrum.

Educational Response

Because COVID-19 will have long-lasting effects on education, especially as students transition back to the normal classroom setting, educators must provide a safe environment to promote learning to mitigate those effects (Harper & Neubauer, 2021). Those with higher levels of childhood traumatic experiences can have higher degrees of PTSD symptoms from the COVID-19 pandemic (Seitz et al., 2020). Previous maltreatment and ACEs negatively impact student engagement in school, as well as educational outcomes (Felitti et al., 1998; Henderson et al., 2020). Students having four or more ACEs are seven times as likely to have attendance issues and aggression and over 30 times as likely to have learning or behavioral issues in the classroom (Jellinek & Swick, 2020; Stan et al., 2021). Students who previously experienced bullying or intense academic pressure and have fared better at home will suffer more intense issues as they return to the classroom (Danese & Smith, 2020).

A trauma-informed approach to education allows teachers, administrators, and faculty to reach students with an understanding of how trauma affects them (Harper & Neubauer, 2021).

This technique assists students with comorbid conditions. Responding with trauma-informed practices allows for individual and intergenerational healing through approaches that are culturally responsive and empowering (Elkins et al., 2019). Brewin et al. (2017) suggested that understanding trauma history as a risk factor rather than strictly viewing it as a requirement for treatment is beneficial so that diagnosis is not constrained. Knowledge of ACEs and trauma exposure informs interventions aimed at preventing adversity, risk of re-victimization, and development of serious internalizing and externalizing behavior problems (Felitti et al., 1998; Grasso et al., 2015; 2016). A psychosocial trauma is not always visible, making behaviors and other nonverbal cues important to identify and understand (Stan et al., 2021). By integrating knowledge of trauma into schools, policies, and procedures, practices can be implemented to best support students in becoming more successful (Minkos & Gelbar, 2021; 2020).

A trauma-informed approach considers the whole child and provides awareness regarding the pandemic's impact (Harper & Neubauer, 2021). Understanding that students have endured previous unrelated COVID traumas such as ACEs, bullying, and intergenerational issues allows educators to be watchful of other potential impacts on students (Felitti et al., 1998; Scott et al., 2021a). Schools and mental health agencies must be able to assess for pandemic-induced trauma to provide interventions that help mitigate the effects of various adverse childhood experiences (Bryant et al., 2020). Evidence-based interventions should be coordinated across services, expanded, and tailored to meet the needs of students who have numerous ACEs (Soleimanpour et al., 2017). Building relationships is extremely important in working with those with previous trauma (Gentry et al., 2017). Cultivating relationships, along with creating a safe environment, helps educators develop constructive interventions and helps students build resilience (Márquez-Aponte, 2020). Once a rapport is established, students are more likely to open up about concerns,

needs, or thoughts of self-harm. It is important to remember that suicide is the second leading cause of death for 15 to 19-year-olds (Hoekstra, 2020). Therefore, monitoring students for mental health concerns takes a joint effort by parents and educators alike.

Mental health concerns must be addressed as students return to classrooms. Institutions must recognize and mitigate the effects of mental health issues during the pandemic and as students return to school (Al-Taweel et al., 2020). The psychosocial effects of the pandemic must be understood to provide insights to parents, teachers, and administrators, as well as to create adequate support for students (O'Sullivan et al., 2021). Those students with prior mental health issues have been adversely affected by the pandemic and struggle with readjusting to the new normal (Hertz & Barrios, 2021; 2020). Mental health agencies were overwhelmed with long waiting lists and disparities in services provided (Danese & Smith, 2020; Henderson et al., 2020). School counselors have been a critical piece in meeting the mental health needs of students as schools shifted back to in-person learning but they must be prepared (Karaman et al., 2021; Pincus et al., 2020). School counselors are trained to meet the academic, social, and emotional needs of students but are also responsible for other indirect services that take time away from students. Some school districts asked that guidance and mental health counseling services be increased as students make their way back to in-person learning to combat issues related to the pandemic (Henderson et al., 2020; Pattison et al., 2021). Ensuring that counselors are available by eliminating non-counselor-related duties allows student resources to be available for combating issues related to COVID-initiated online learning (Pincus et al., 2020). School counselors can help students develop and implement coping strategies, recognize and implement stress management skills, and learn relaxation techniques to refocus (Kolski et al., 2014). Psychoeducation is a valuable tool to teach students about the effects of trauma, symptoms of

depression and PTSD, and how to build effective coping skills (Gentry et al., 2017). Helping students learn to self-regulate and decrease stress levels minimizes the effects of ACEs (Felitti et al., 1998; Thurston et al., 2018). Normalizing their experiences with stress during the pandemic and talking about normal responses such as irritability, low self-esteem, and detachment allows students to process what has happened (Danese & Smith, 2020). The school day offered the predictability and consistency that students need to feel safe and supported (Minkos & Gelbar, 2021; 2020). Educators can also modify learning environments to adjust length of lessons, provide routines, reduce behavioral concerns, and review simple rules in ensuring safety and respect (Scott et al., 2021a).

One way for teachers, school administration, and school counselors to recognize students who have been adversely affected by the pandemic is through a screening process. The Multi-Tiered System of Supports (or MTSS framework) that some school systems use helps to identify at-risk students and provides interventions to offer necessary support (Hertz & Barrios, 2021; 2020). With this process, educators work together to differentiate instruction and begin to bridge the educational gaps seen after the pandemic. Tier 1 level of supports include social and emotional supports provided to all students to optimize learning and incorporate healthy coping skills (Minkos & Gelbar, 2021; 2020). The MTSS framework helps schools balance limited resources and targeted interventions to meet the needs of the students (Scott et al., 2021a). Instructional differentiation must be expanded to identify students needing additional support after the pandemic (Kuhfeld et al., 2020). It is imperative that institutions have systems of support, the development of programs, and interventions in place for students with previous ACEs (Bomysoad & Francis, 2020; Felitti et al., 1998).

The reaction to the pandemic is unique to each student because of their environment, personal factors, and exposure to previous trauma (Minkos & Gelbar, 2021; 2020). Understanding ACEs and how trauma effects students is imperative as educators build knowledge, gain research, prioritize funding, and make policies (Felitti et al., 1998; Hege et al., 2020). Schools and mental health agencies must address student needs resulting from increased adversity and missed time building key resiliency skills throughout the school year (Bryant et al., 2020). Because all students have experienced this large-scale event, interventions must include all student populations to minimize the effects of the pandemic (Danese & Smith, 2020). After Hurricane Katrina, it took nearly two years for students to recover academically; therefore, the pandemic effects will be longstanding, with stress on teachers and students to make up for lost time (Kufeld et al., 2020). Encouraging parents and students to advocate for their needs is critical.

Teaching and reviewing behavioral and academic expectations as students returned to in-school settings have been key (Minkos & Gelbar, 2021; 2020). Building teacher and parent relationships, improving communication, and providing resources such as counseling helped to alleviate symptoms brought on by the pandemic and previous trauma (Chamberlain et al., 2020; Pattison et al., 2021). Social support and seeking out help or suggestions from others have eased behavioral, cognitive, and emotional responses for students (Karaman et al., 2021). It is essential students and parents understand that school engagement is crucial for positive outcomes later in life, as well as better quality of life, physical health, and social advantage (Moses & Villodas, 2017). In response to these challenges, it was important for communities, schools, and policymakers to prioritize initiatives that promoted digital literacy, provided access to technology

and internet connectivity, supported social and emotional learning, and fostered meaningful connections and relationships both online and offline (Fegert et al., 2020).

Students with previous trauma must be considered as they often experience increases in depressive and anxiety symptoms during adolescence (Arbeau et al., 2017). Poor coping skills from previous trauma could have left them avoiding schoolwork and anything that added stress to an already difficult situation. A stable environment builds resiliency and mitigates the impact of ACEs (Elmore et al., 2020; Felitti et al., 1998), and schools provided that stable environment. Longitudinal effects from the pandemic affected responses to stress and mental health, which required future interventions to help mitigate (Gazmararian et al., 2021). The developmental experience of adolescence and their ability to successfully transition into adulthood, the cost to society, and their productivity levels are affected if the impact of ACEs is not addressed (Felitti et al., 1998; Soleimanpour et al., 2017). The cost to society can take a financial toll on healthcare systems due to the short- and long-term consequences of exposure to adversity in childhood and the heightened risk of stress-related health disorders (Nelson et al., 2020). Parents and educators can model positive coping skills, self-regulation, and reinforce protective factors that can strengthen resilience (Rider et al., 2021). By understanding the effects on students with previous trauma, educators and mental health providers can implement strategies that treat the whole child's physical, emotional, social, and educational needs during this post-pandemic recovery period.

Summary

A review of the research has suggested that the COVID-19 pandemic impacted academic instruction and resulted in both short-term and long-term effects in this arena (Minkos & Gelbar, 2021; 2020). The effects of the pandemic on adolescent mental health are a concern as students

experienced changes in routine, social isolation, and vulnerability (Imran et al., 2020). The psychosocial effects of the pandemic, such as its economic impact, contact restrictions, and parental stress, threaten the mental health of children and adolescents (Fegert et al., 2020). Parental stress increased significantly, leaving children to witness more domestic violence and an increase in verbal emotional abuse (Calvano et al., 2021). The COVID-19 pandemic will continue to cause trauma for individuals, especially marginalized groups and many children, possibly causing more ACEs (Felitti et al., 1998; Stan et al., 2021). Adolescents with a history of ACEs could be more susceptible to the psychological, social, and economic challenges posed by the pandemic, making early intervention and support essential. Educational and mental health impacts on adolescents are still being determined throughout much of the country and need to be addressed.

A gap in the research exists when considering high school students who have experienced previous trauma and how the pandemic affected their perceived stress. Gaps in research also exist in examining adolescents and their reaction to the pandemic based on prior ACEs and socioeconomic variables. Adolescents are particularly vulnerable to the effects of traumatic experiences and stressors due to their ongoing developmental processes and heightened susceptibility to mental health issues. By examining demographic variables within a rural population in southeastern United States, such as gender, race and ethnicity, socioeconomic status, mental health services before COVID-19, and generations living in the home, educators have a better understanding of the stress effects of COVID-19. With an increased risk of parental mental illness, domestic violence, and child maltreatment, the pandemic impacted children and adolescents in negative ways (Fegert et al., 2020). With higher pandemic-related stress, parental outcomes are poorer, resulting in higher ACEs (Felitti et al., 1998; Calvano et al., 2021). For

those with previous trauma and existing mental health issues, increased challenges exist because of the pandemic (Fegert et al., 2020). Pre-existing ACEs could predict adolescent mental health outcomes; however, additional research is needed to consider the relationship between adverse childhood experiences and mental health consequences during the COVID-19 pandemic (Guo et al., 2020). Children who have experienced poverty and multiple ACEs can face significant challenges making them particularly vulnerable and needing help to cope with the trauma (Choi et al., 2020). Adolescents from marginalized communities can be disproportionately affected by both ACEs and the pandemic, highlighting the need for interventions that address systemic barriers and promote health equity. This study explores the impact of previous trauma in high school students in a rural county in the southeastern United States with various demographic variables and this group's perceived stress resulting from the pandemic.

Chapter Three: Methods

Overview

As students made their way back to the traditional classroom settings, there was a need to better understand the perceived stress of high school students. The pandemic and distancing measures took away connections and social supports, leaving loneliness and isolation in their wake, along with concerns about physical and mental well-being (Saltzman et al., 2020). Previous research suggested that the pandemic, along with the social distancing used to limit the spread of the virus, was considered a traumatic event (Seitz et al., 2021). Government shutdowns left many school systems turning to online learning to make up for time missed in the classroom. One population affected by the social isolation and educational gaps caused by the pandemic were students with previous trauma (Henderson et al., 2020). Seitz et al. (2021) suggested that those with childhood traumatic experiences were more likely to develop greater post-traumatic stress syndrome (PTSD) symptoms because of the pandemic.

Because of the enduring and lasting effects of psychological impact, the effects of the pandemic on adolescents must be further evaluated to better understand the physical and mental health outcomes (Jones et al., 2021). In order to address these needs in adolescents, it was imperative to understand students' responses to and emotions towards the pandemic (Imran et al., 2020). The inability to make meaning of a traumatic experience, understand one's thoughts and emotions, and convey those to others caused trauma-related problems (Yalch et al., 2019). Helping adolescents make sense of the pandemic and their experience empowered them to cope with their emotions and regulate their reactions. Waselewski et al. (2020) explained that a better understanding of youth coping skills during this significant, life-changing event ensured that their needs are being appropriately and effectively addressed to support this population. The

purpose of this study was to determine if the number of adverse childhood experiences and specific variables are related to higher perceived stress related to the pandemic in high school students in a rural county in the southeastern United States. An opportunity to build resiliency and reduce anxiety among adolescents was needed to lessen the negative effects of poor physical and mental health outcomes (Jones et al., 2021). ACEs have been shown to have a correlation to profound and lasting effects on both physical and mental health, with greater exposure associated with an increased risk of adverse health outcomes (Bomysoad & Francis, 2020; Felitti et al., 1998). The psychosocial stressor of the COVID-19 pandemic and its impact on adolescents' mental and physical health, well-being, and life functioning represented a need to understand and mitigate the adverse effects of the pandemic (Agorastos et al., 2022). Understanding how the pandemic affected the stress of students with prior trauma provides insight for future research. Educators can also learn how to lessen these negative effects of the pandemic and recognize students' current and future needs.

Design

Survey research is designed to provide a description of a certain population with a specific focus that needs to be addressed (Heppner et al., 2016). Survey design can give a quantitative description of trends, attitudes, or opinions of a sample size (Creswell & Creswell, 2018). This study examined previous trauma through the Adverse Childhood Experiences (ACEs) questionnaire, which has been used for goals in facilitating educational programs regarding health and trauma, understanding the effects of trauma, and mitigating stress related to trauma (Bethell et al., 2017; Felitti et al., 1998). Previous reviews considered evidence of the long-term effects of ACEs and an increasing number of studies that have used methods to identify how ACEs affect health (Hughes et al., 2017). However, the presence of ACEs does not

guarantee negative outcomes or the presence of trauma (Eklund et al., 2018). ACEs consider maltreatment and other stressors equivalently whether or not the child perceived the event as traumatic, such as a parent's amicable divorce compared to a divorce with conflict (Beal et al., 2018; 2019).

To allow students to self-report previous trauma, the ACEs questionnaire was used from the Trauma-Informed Care Implementation Resource Center (Felitti et al., 1998). The Trauma-Informed Care Implementation Resource Center uses the ACEs assessment as a validated tool to measure the impact of trauma (Trauma-Informed Care Implementation Resource Center, n.d.). The ACEs questionnaire consists of 10 traumas falling under three categories, including abuse, neglect, and household dysfunction, that pertain to the respondent's first 18 years of life (Tsehay et al., 2020). Caregivers and adolescents report ACEs differently; therefore, this study allowed students to self-report (Purewal et al., 2016b). The ACEs test is simple to score, with a higher number indicating those who are most at-risk for poor outcomes (Lacey & Minnis, 2020).

In order to better understand the effects of the pandemic on those with previous trauma, another assessment was used in conjunction with the ACEs questionnaire (Felitti et al., 1998). When considering how the pandemic has affected students, the Pandemic-Related Perceived Stress Scale of COVID-19 (PSS-10-C) survey was used (Campo-Arias et al., 2020; Cohen et al., 1983). The PSS-10-C has been used to measure the perceived stress from the COVID-19 pandemic (Chatterjee & Tankha, 2021). Adapted from the original Perceived Stress Scale after the global COVID-19 pandemic, this test has shown to be a valid and reliable tool (Campo-Arias et al., 2021). Like the ACEs questionnaire, the PSS-10-C allowed quantifiable data to be used in the study. The PSS-10-C is comprised of 10 items with a Likert scale response from never to always, with a higher score indicating more stress (Marcén-Román et al., 2021).

In order to determine the relationship between two surveys, this study analyzed variables to get specific statistical results such as who, what, and how (Apuke, 2017). This study sought to determine if higher ACEs (Felitti et al., 1998) correlated with higher perceived pandemic-related stress in high school students with various demographic variables in a rural county in the southeastern United States. This comparison was determined from examining the two scales, considering the statistical significance, and considering variables such as gender, ethnicity, socioeconomic status, who the student lives with, and mental health services before COVID-19. The statistical results provided insight on how much trauma high school students have experienced, as well as their perceived stress levels from the COVID-19 pandemic. A correlational study of two assessments looked for a significant positive association between the two pieces of information (Creswell & Creswell, 2018).

This design created a theoretical framework for understanding the relationship between the effects of perceived stress for high school students who have previous trauma. A theoretical framework that help explain contextual factors and their association with psychological well-being can increase knowledge about human behavior and contribute to the development of programs and policies (Gore-Felton, 2005). Trauma theory is established in the understanding of the pervasive impact of trauma on the physiological and psychological functions of the body (Dent, 2020). Trauma theory has also suggested that when effective treatments are used, symptoms can be reduced (Yalch et al., 2019). Symptoms occur because the person is impacted by the event or series of events in a way that overwhelms their ability to integrate the emotional experience (Dent, 2020). In trauma theory, the emotion stemming from the trauma can be less important than the survivor's ability to put the emotion into words and convey the emotion to others (Yalch et al., 2019). Helping students convey how the pandemic affected their stress

levels can help students build coping skills and manage trauma. Therefore, understanding the effects of perceived pandemic-related stress on high school students with previous trauma can allow mental health professionals, educators, parents, and others to manage and possibly reduce the symptoms of trauma in this population.

A correlational analysis considered variables that can be quantified and examined the relationship between those variables (Rockinson-Szapkiw, n.d.). The correlational design of the survey research allowed the measurement of various parts of the sample through statistical procedures to make inferences about the relationship between the variables (Harris, 1998). As previous trauma and the perceived stress effects of the pandemic are considered, the relationship between the two were then used to better understand how one is affected by the other. The descriptive information from the quantifiable data helped to answer questions about the relationship between the variables (Creswell & Creswell, 2018). A public health emergency such as the pandemic affected students because of their limited understanding of the event and their limited coping skills, causing both physical and mental health issues (Imran et al., 2020). By analyzing groups of people, those who have been exposed to an event and those who have not, inferences about cause and effect can be made (Harris, 1998). In this case, those who have been exposed to trauma and those who do not have trauma have experienced the pandemic in different capacities.

For this correlational study, the population of interest was high school students who experienced previous trauma based on an ACEs (Felitti et al., 1998) score of four or more. In this study, an ACEs score of four or more was used to represent students with previous trauma. This marker was determined based on previously cited studies that indicate persons with a score of four or more ACEs can demonstrate an increase in learning issues, physical and mental health

issues, categorized in a lower socioeconomic status, and lower educational attainment (Felitti et al., 1998; Guo et al., 2020; Hege et al., 2020; Jellinek & Swick, 2020; Stan et al., 2021). Previously cited studies have used an ACEs score of four or more to represent a threshold of previous trauma and represent those who are more at risk for physical or mental health issues (Hege et al., 2020; Jellinek & Swick, 2020; Stan et al., 2021). Because of the trauma the students experienced, information was then gathered about the dependent variable to better understand the level of perceived stress from the pandemic. The dependent variable was the perceived stress level of students from the COVID-19 pandemic based on the results of the two surveys. The independent variable was the ACEs students have had, along with demographic variables to observe correlations between the dependent and independent variables. Correlation statistics are used to assess the strength of the relationship between two measures (Hays, 2017). In this study, previous trauma and the perceived stress of the pandemic was assessed to determine the significance of the relationship. With quantitative research, the theory lies in interrelated constructs formed into a hypothesis to specify the strength between variables (Creswell & Creswell, 2018). This study drew conclusions about the perceived stress effects of the pandemic on high school students with previous trauma in a rural area and used the data to better understand the strength of the relationship.

Research Questions

To assess high school students with previous trauma and their response to COVID-19, several research questions were considered in this study. Different variables were analyzed to better understand relationships between high school students and their perceived stress from the pandemic.

RQ1: Do prior ACEs and gender have an affect on the perceived stress levels from the COVID-19 pandemic on high school students?

RQ2: Is there a difference between race and students with previous ACEs in regards to their perceived stress from the COVID-19 pandemic?

RQ3: Do prior ACEs and socioeconomic status affect the way that high school students perceive stress from the COVID-19 pandemic?

Hypotheses

The hypotheses for the study were the following:

H1: Perceived stress levels from the COVID-19 pandemic will be higher among high school students in a rural county in the southeastern United States with four or more ACEs and prior counseling experience than those with four or more ACEs and no prior counseling experience.

H0: There will no difference in the perceived stress levels from the COVID-19 pandemic among high school students in a rural county in the southeastern United States with four or more ACEs and prior counseling experience than those with four or more ACEs and no prior counseling experience.

H2: Perceived stress levels from the COVID-19 pandemic will be higher among female high school students in a rural county in the southeastern United States with four or more ACEs than male high school students with four or more ACEs.

H0: There will be no difference in the perceived stress levels from the COVID-19 pandemic between male and female high school students in a rural county in the southeastern United States with four or more ACEs.

H3: Perceived stress levels from the COVID-19 pandemic will be higher among non-white high school students in a rural county in the southeastern United Sates with four or more ACEs than white students in a rural county in the southeastern United Sates with four or more ACEs.

H0: Ethnicity makes no difference in the perceived stress levels from the COVID-19 pandemic among high school students in a rural county in the southeastern United States with four or more ACEs.

H4: High school students in a rural county in the southeastern United States with higher socioeconomic status and four or more ACEs will have less perceived stress from the COVID-19 pandemic than those high school students in a rural county in the southeastern United States with lower socioeconomics and four or more ACEs.

H0: Socioeconomic status does not make a difference in the perceived stress levels from the COVID-19 pandemic for high school students in a rural county in the southeastern United States.

H5: High school students in a rural county in the southeastern United States who have four or more ACEs and are living with multi-generations in the home will have higher perceived stress from the COVID-19 pandemic than those high school students in a rural county in the southeastern United States having four or more ACEs and living with only two generations in the home.

H0: There is no difference in the perceived stress levels from COVID-19 for high school students in a rural county in the southeastern United States who have four or more ACEs and are living with multi-generations in the home than high school students in a rural

county in the southeastern United States with four or more ACEs and living with only two generations.

Participants and Setting

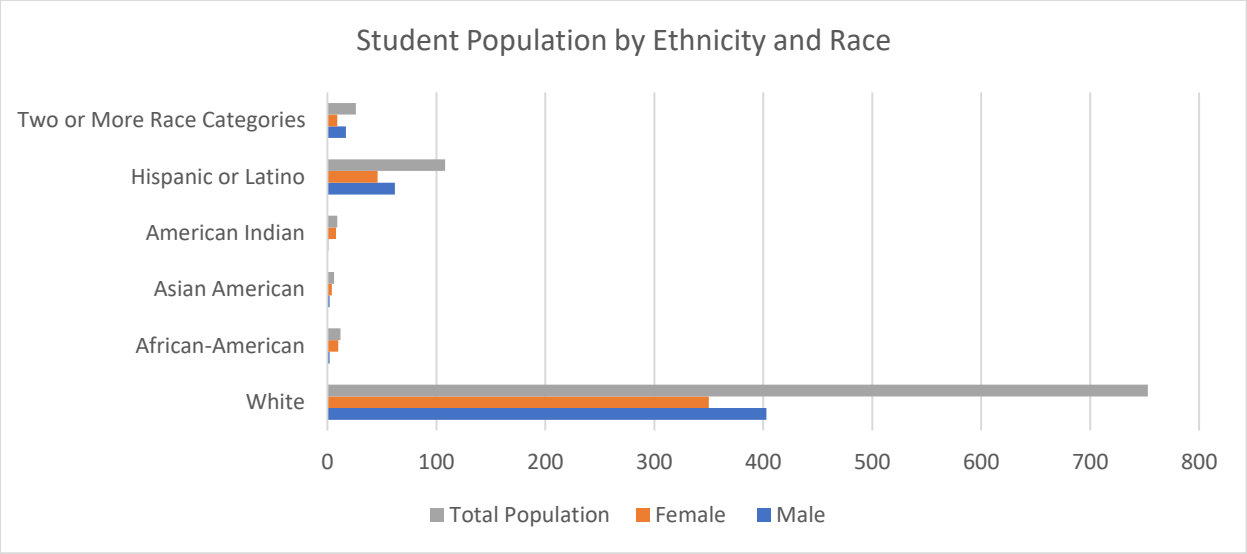
Public high school students in a rural county in the southeastern United States participated in the survey. The school serves approximately 900 students. As a traditional high school, the classes are set on a block schedule where students take four classes in the fall semester and four different classes in the spring semester. The high school is located in a mountainous county near the Great Smoky Mountains National Park and the Blue Ridge Parkway, making the area a popular tourist destination. The rural area borders the Eastern Band of Cherokee Indian Reservation, giving residents insight into the Native American traditions as well as Appalachian culture. With a population of approximately 63,000, the largest employers at the time of the study were a local paper mill, the local hospital and healthcare system, and the school system (Haywood County Government, n.d.). The school system consisted of eight elementary schools, three middle schools, a K-9 charter school, two traditional high schools, an alternative high school, and an early college located at the local community college campus, all serving approximately 7,000 students total (Haywood County Schools, n.d.a).

Participants were both male and female students in ninth through twelfth grade at one of the traditional public high school options in the county. The student population was approximately 82% white and 1% each of African American, Asian American, and American Indian. Approximately 12% of the student population were of Hispanic or Latino ethnicity and 3% identified with two or more race categories (Figure 1). Approximately 41% of the students at the high school level and 49% of students in the county school system qualified for free or reduced lunch based on federal guidelines. Without invading the privacy of others, knowing the

percentage that qualified for free and reduced lunch gave a picture of the socioeconomic status of the families of participants (Patten, 2017). The average income for the county in 2019 was $51,659, with 88% of the population having a high school diploma and 26% having a bachelor's degree or higher (United States Census Bureau, 2019).

Figure 1

Student Population by Ethnicity and Race



Note. Student Population by Ethnicity. Adapted from North Carolina PowerSchool.

In order to increase the response rate, the entire student population at the school was asked to participate. Gore-Felton (2005) explained that when the sample size increases, it can help bolster the statistical power and increase the ability to generalize about the larger population. Making the study accessible to all students and on a voluntary basis helped to reduce bias. Quantitative studies allow the research to determine the participants and make inferences about the larger group using very small samples (Mohajan, 2020). Structured questionnaires allow for the collection of data or an enumeration of a selected population (Rahi, 2017). Smith and Little (2018) stated that increased sample size does not always remedy a lack of strong

measurement, strong theories, or effective experimental control over error variance. Survey research chooses samples from large and small populations to discover relative incidence and interrelations (Mohajan, 2020). To make the research more robust and to generate a wider range of insights, collecting 100 questionnaires or more provided a more extended study (Rowley, 2014). In order for the sample size to represent the population of interest, the sample size should typically be at least 250-300 participants (Heppner et al., 2016). With a confidence level of 95% and a margin of error of 5% for a population of 914, the sample size should be at least 271 (Qualtrics XM Blog, n.d.).

Instrumentation

The original ACEs study was conducted from 1995-1997, and the data set is still being evaluated (Centers for Disease Control and Prevention, n.d.; Felitti et al., 1998). This innovative research considered the links between experiences of abuse, neglect, and household dysfunction with the future physical health of participants (Cronholm et al., 2015). ACEs include physical abuse, verbal abuse, sexual abuse, physical neglect, emotional neglect, an alcoholic parent, a parent who is a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and a parent's divorce (Centers for Disease Control and Prevention, n.d.; Felitti et al., 1998). Bomysoad and Francis (2020) stated that multiple ACE exposures can have an exponential effect on mental health. The threshold for significantly higher negative health outcomes is typically four or more ACEs (Murphy et al., 2013; 2014).

ACEs scores are correlated with health problems, substance abuse, and behavioral issues (Bomysoad & Francis, 2020; Felitti et al., 1998; Kidman et al., 2019). Research has demonstrated that ACEs are prevalent and consequential, but there is a lack of consensus on how ACEs should be measured (Choi et al., 2020). The validity of measures of childhood adversity is

limited because of underreporting by caregivers or the underdetection by agencies (Reuben et al., 2016). Various measures have been adapted from the original ACEs. In a study of Malawian adolescents, the ACE International Questionnaire (ACE-IQ) was found to be appropriate to use with adolescents in low-income settings (Kidman et al., 2019). The Chinese ACE-IQ was found to have sufficient scale reliability, good content validity, and semantic equivalence with young adults (Ho et al., 2019). Evidence has linked ACEs to adult health issues primarily from studies that measured childhood adversity according to an adult's recollection, which can challenge validity (Greeson et al., 2014; Reuben et al., 2016). Test-retest reliability as well as predictive validity have been studied on the ACEs as well as expanded ACEs to highlight the importance of understanding their effect on mental health (Karatekin & Hill, 2019). A study in Germany highlighted the importance of considering ACEs as a risk factor for mental health problems during times of crisis such as the COVID-19 pandemic (Clemens et al., 2022). A study by Doom et al. (2021) also found that higher levels of adverse childhood experiences (ACEs) were associated with higher levels of depressive symptoms during the pandemic.

Koita et al. (2018) stated that there are no validated tools to measure ACEs in childhood. Validating an age-appropriate ACEs screening tool could possibly lead to an integration of a universal screening tool (Purewal et al., 2016a). More research needs to be completed on ACEs (Felitti et al., 1998) questionnaires to show validity and reliability with adolescents. When considering information about testing and validity, ranges from no documentation to extensive cognitive testing vary widely (Bethell et al., 2017). This study considered the ACEs questionnaire along with the Perceived Stress Scale of COVID-19 (PSS-10-C) to get a better understanding of adolescent needs after the pandemic. These two assessments considered how rural adolescents with previous trauma were affected when considering the perceived stress of

the pandemic. Bethell et al. (2017) explained that even if children have not been exposed to ACEs, using the ACEs as an assessment can be a valuable educational tool to engage, educate, and learn resilience.

In order to measure the effects of the pandemic, another survey was used with students. The Pandemic-Related Perceived Stress Scale of COVID-19 (PSS-10-C) considers stress levels within the last seven days as they pertain to the COVID-19 pandemic (Campo-Arias et al., 2021; Marcén-Román, 2021; Sánchez-Ballester, 2021). The instrument has been adapted from the Perceived Stress Scale (PSS-10) to consider specific items for COVID-19 (Cohen et al., 1983; Cortez et al., 2020). This perception of stress is measured on an ordinal scale, and interval level estimates allow the examination of the effects of perceived stress in various contexts (Medvedev et al., 2019). Ordinal scales provide an order of rank or a better understanding of magnitude of some type of variable the individual is experiencing (Hays, 2017). The PSS-10 and PSS-10-C allow for a better understanding of the magnitude at which the individual has perceived stress (Medvedev et al., 2019).

The original Perceived Stress Scale (PSS) was created to measure the degree to which people view or value life situations as stressful (Sánchez-Ballester, 2021). The PSS has been a worldwide assessment to consider the degree of stress that people felt was unpredictable, out-of-control, or present in overloaded situations (She et al., 2021). The PSS-10 has been widely used, including over 11,000 citations by 2016, with cross-cultural validity with over 25 different translations (Medvedev et al., 2019). The psychometric properties of the PSS have been verified in multiple countries, with validation found across cultures (She et al., 2021). This assessment has also been found to have good reliability, concurrent validity, and sensitivity (Bermejo-Martins et al., 2021). A previous study with college students observed correlations between the

Patient Health Questionnaire-9(PHQ-9), the Perceived Stress Scale-10 (PSS-10), and the Self-Rating Anxiety Scale (SAS) to shed light on the complex interaction of stress, anxiety and depression in response to the pandemic (Zheng et al., 2022). The PSS-10 provided valuable insights into group-level trends and patterns of perceived stress among student teachers during COVID-19 (Nielsen, 2023).

The adaptation of the PSS-10-C was found to have high internal consistency when assessing stress directly related to COVID-19 (Cohen et al., 1983; Pedrozo-Pupo et al., 2020). Internal consistency is important as it considers the degree to which the items in the instrument act in the same way (Creswell & Creswell, 2018). With COVID-19, there was a need to develop an effective tool such as the PSS-10-C to measure pandemic stress for targeted interventions (Chatterjee & Tankha, 2021). In a study with students from a Columbian university, the PSS-10-C was found to be both valid and reliable (Campo-Arias et al., 2021). A study by Marcén-Román et al. (2021) using 252 students in health sciences programs found internal consistency with the PSS-10-C. A study with undergraduate students used the PSS-10-C and found reliability to measure psychological and perceived stress effects from COVID-19 (Luo et al., 2021). This assessment allowed a quantifiable score to be used to measure outcomes of the pandemic's effect on students. The PSS-10-C is comprised of 10 items on a Likert scale, with a higher score indicating higher stress levels related to the pandemic (Marcén-Román et al., 2021). Each of the 10 items offer five response options ranging from "never" to "always," with items 1, 2, 3, 6, 9, and 10 scored from 0 to 4 and items 4, 5, 7, and 8 scored from 4 to 0 (Rodríguez-Roca et al., 2021). It is important to have assessments that measure the functional outcomes of the pandemic to manage mental health symptoms (Cortez et al., 2020). Those with a score of ≥25 were considered to have high perceived stress from COVID-19 (Rodríguez-Roca et al., 2021). By

utilizing modified scales derived from established assessments, research can effectively gauge the psychological impact of COVID-19 on students and educators can develop targeted interventions to alleviate stress and support mental well-being.

With quantitative hypothesis testing, the study must decide if the data is suitable for parametric analysis (Spencer et al., 2017). The quantitative data from both assessments was analyzed to better understand the relationship between previous trauma and the effects of the COVID-19 pandemic. Once both surveys had quantifiable data to examine, the study used independent samples t-tests to compare groups. In this study, the scores from the ACEs (Felitti et al., 1998) test and the scores from the PSS-10-C (Campo-Arias et al., 2021; Cohen et al., 1983) were compared to determine if there was statistical significance between the two. The independent variables of ACEs were broken down into subcategories of zero or no ACEs, one to three ACEs, and four or more ACEs. Student responses to the PSS-10 were then used to categorize their perceived stress levels. Independent sample t-tests were used to determine a quantitative effect of ACE scores on students' perceived stress levels. These scores were then analyzed with the demographic variables to establish correlations within various groups in the sample.

Procedures

After obtaining Institutional Review Board (IRB) approval through Liberty University (Appendix A), a presentation was made to the local school board to obtain permission for research. The County School Board Policy Code 5230 encourages agencies or individuals to conduct research that considers student achievement and the effectiveness of the school system (School Board Policies, n.d.). This correlational study can be used to provide insight into how the pandemic affected stress levels for students with previous trauma and provide possible

insight into student achievement as well as effectiveness of the school system in regards to the response of the pandemic. Once permission was granted from the School Board (Appendix B), the study and research design was then presented to the administration of the high school. Once full permission was granted, the school faculty was made aware of the research being conducted and the benefits of gathering this information.

An informational flyer, the main advertising form, was distributed to parents at freshmen orientation, at schedule pickup, at a presentation made at Open House, and shared on social media (Appendix C). A parental opt-out form was made available through parent email and Google Classroom (Appendix D). Each student received a flyer in their homeroom as well with the homeroom teacher reviewing with students. The school website also advertised the research, the parental opt-out form, and informational fliers for parents and students were made available in the front office and Counseling Center. The informational flyer and parental opt-out form was presented to students through their Google Classroom and homeroom classes, outlining the need for research to better understand how the pandemic affected students, especially those with previous trauma. The flyer and opt-out form explained that no identifying information would be collected, and the data gathered would only be for purposes of understanding and training to allow administrators, teachers, and counselors to better understand how students have been affected by the pandemic. Students were informed in homerooms that the research was anonymous and no identifying information would be collected. Students were provided with access to the online survey through Google Forms. If parents did not wish for their student to participate, they were asked to notify through email by the date listed on the flyer and parental opt-out form.

The flyer and parental opt-out form outlined procedures and reasons behind the research. Instructions were clear so that students and parents felt safe to participate, knowing the study was voluntary and that opting out was possible (Creswell & Creswell, 2018). Parents were notified in the parental opt-out form that they could request to view all questions from the two surveys to be aware of the content before allowing their student(s) to participate. This complied with the County School Board Policy Code 4720, which states that parents have the right to review any student surveys that pertain to sensitive information and the school system will protect student privacy and identification (School Board Policies, n.d.). Parents were given three weeks to notify by email if they did not wish their student(s) to participate.

Once the date passed for parents to exempt their student from the research, a link with the survey was sent to student emails via Google Classroom. Students were once again given information regarding the research participation on the first page of the survey (Appendix E). The online Google Form was made available to each student through the Google Classroom designed specifically for each grade-level cohort. Two questionnaires were used in the Google Form, the ACEs questionnaire (Felitti et al., 1998) and the Pandemic-Related Perceived Stress Scale of COVID-19 (Campo-Arias et al., 2021; Cohen et al., 1983). The ACEs questionnaire can be seen in Appendix F and the Pandemic-Related Perceived Stress Scale of COVID-19 in Appendix G. In using Google Form, answers to survey questions were kept confidential and secure. No identifiable questions were presented, but students were asked to provide their grade level, gender, ethnicity, free and reduced lunch eligibility, and mental health services experience prior to COVID-19 for the purpose of comparing group data (Appendix H). By design, the Google Form allowed for only one response per participant. The surveys were completed anonymously through Google Form. Although students used their school emails to access the

survey, email addresses were not collected upon submission, and therefore, information was unidentifiable. Patten (2017) stated that when questionnaires are anonymous, the subjects are encouraged to be more honest with their answers.

When planning research, respecting the potential site of research as well as considering the ethical, legal, and cultural issues that it included is important (Creswell & Creswell, 2018). Since human behavior is ever-changing, scientific research in the counseling field is needed to increase knowledge with accurate, reliable, and usable information (Heppner et al., 2016). Great care must be taken to follow ethical procedures and produce viable information that will be beneficial to the field. Ethical issues can arise when working with minors, and therefore, parents will be notified and given ample time to opt out of the study if needed. Potential participants must be able to understand the process of the study, have received complete information about the content, and comprehend the procedures (Heppner et al., 2016). Privacy of the individuals in the sample was protected and confidentiality maintained without the presence of identification questions. Participants were treated ethically by respecting their autonomy and protecting them from harm (Cilliers & Viljoen, 2021).

Data Analysis

Data collection through internet-based surveys can hold several advantages, including more accessibility, fewer time constraints, and greater means of conversion into statistical software (Heppner et al., 2016). The information obtained through quantitative surveys allows observation and produces information to be measured numerically (Creswell & Creswell, 2018). Surveys or questionnaires provide results that can be tabulated or scored, which allows data to be easily analyzed (Patten, 2017). A demographic survey took place at the beginning of the questionnaire to gather data such as gender, grade, age, free and reduced lunch qualification,

living arrangements, ethnicity, and mental health services before COVID-19. This data was gathered to determine if there were similarities or differences in the demographic data related to the topic. The data collected in this study from the ACEs (Felitti et al., 1998) questionnaire and the PSS-10-C (Campo-Arias et al., 2021; Cohen et al., 1983) was acquired through an online survey in Google Form. The Google Form was made available through the Google Classroom created for each grade level cohort at the high school. The Google Classroom was accessed through various media sources such as student-issued Chromebooks, laptops, or phones.

The surveys were considered cross-sectional, as the data was collected at one point in time (Creswell & Creswell, 2018). Although students used their school emails to log in to the secure Google account, student identity remained anonymous. Therefore, student anonymity was secure through Google Form, as no personal information was collected during the survey. Google Form allowed the collection of data from remote locations and enabled students who were off campus taking classes at the local community college to complete the survey. After the date passed when parents were able to opt out, a link to the survey was sent to student emails via Google Form. An email address was provided for parents and students to contact their local school counselor for support with resource numbers and further contact information if the survey created any emotional concerns.

Quantifying methods to measure childhood adversity was important to aid in gathering data and monitoring this public health problem (Ujhelyi Nagy et al., 2019). Variables from the survey that were considered to determine similarities and differences among groups included prior mental health experience, ethnicity and race, free and reduced lunch qualification, gender, and generations living in the home. The data from the Google Form was exported into an Excel spreadsheet and stored securely. Data from the survey was imported from Google Form into

Microsoft Excel. Data was then imported into the Statistical Package for the Social Sciences (SPSS) for analysis and descriptive statistics to summarize demographic data (Wickramasinghe et al., 2019). Descriptive statistics such as frequencies, group means, and standard deviations are commonly reported (Creswell & Creswell, 2018). This type of descriptive analysis allowed the study to discern differences or similarities in gender, grade level, or other demographic data that show perceived stress of the pandemic. Incorporating cultural backgrounds helped in understanding if particular ethno-cultural groups are particularly at-risk of ACEs (Felitti et al., 1998; Wickramasinghe et al., 2019). The data analysis should report all significant findings and reflect the statistical tests so that these are not underreported (Creswell & Creswell, 2018). Correlational research explains phenomena by collecting numerical data and provides an evaluation of the strength of the relationship among variables (Mohajan, 2020). A correlation coefficient suggested the degree of the linear relationship between the variables (Heppner et al., 2016).

By understanding the relationship between previous trauma and the perceived stress effects of the pandemic, educators can identify ways that students have been affected and begin conversations about how to bridge the educational gap that occurred during the pandemic. The research not only examined the interaction between two variables, but also the interaction between the predictors (Heppner et al., 2016). Reporting the effect size is important in school counseling as it allowed the comparison of research studies and the credibility of the findings (Sink & Stroh, 2006). Research and clinical experience have given insight into ways to treat the effects of trauma (Dent, 2020). A better understanding of the how the pandemic has affected stress levels of those with trauma offers insight into ways to help students. This data is important to administrators, counselors, teachers, and other faculty working with students. Sharing data

with stakeholders encourages understanding about procedures and the significance of results (Creswell & Creswell, 2018). Great care was taken to analyze data, report all positive and contrary findings, and supply copies of the information to stakeholders (Creswell & Creswell, 2018). Ethical guidelines for conducting research online were considered, as this differs from traditional research (Cilliers & Viljoen, 2021). The results should be conveyed in a manner that is straightforward in basic descriptive information regarding the findings (Heppner et al., 2016). In communicating results, detailed procedures should be emphasized, unbiased language should be used, and duplicate publications should not be utilized (Creswell & Creswell, 2018). The reaction to the COVID-19 pandemic has been individualized based on the student's circumstances, such as environmental variables, coping skills, and exposure to previous trauma (Minkos & Gelbar, 2021; 2020). With prior maltreatment experiences, the impact of COVID-19 exposure on mental health could be stronger (Guo et al., 2020). Quality research yields an understanding of the impact of the COVID-19 pandemic on rural adolescents in order to reduce negative outcomes such as suicide, behavior problems, and emotional distress (Jones et al., 2021). Without recognizing and addressing the effects of trauma, those who are exposed can experience years of avoidable suffering (Dent, 2020). This quantitative study gathered information on the stressful impact of the pandemic on high school students with previous trauma in relation to previous counseling experience, gender, race and ethnicity, socioeconomic status, and number of generations in the home.

Chapter Four: Findings

Overview

The purpose of this research was to consider the impact of specific predictor variables on stress effects of the COVID-19 pandemic on high school students with previous trauma in a rural county in the southeastern United States. These variables included prior mental health counseling, gender, race/ethnicity, free and reduced lunch qualification, and number of generations living in the home. Upon examining the independent variables, the study concluded that an independent-samples t-test would determine if there was a statistically significant difference between those who had and had not received previous mental health services, male and female students, white and nonwhite students, students who qualify for free and reduced lunch and those who do not, and students living with one generation in the home versus those with multiple generations living in the home. The sample was narrowed down by looking at students who had four or more ACEs (Felitti et al., 1998). All independent variables were translated into nominal values and analyzed separately based on the hypothesis tested. The dependent variable for all hypotheses was the perceived stress levels from the COVID-19 pandemic or scores on the PSS-10-C (Campo-Arias et al., 2020, Cohen et al., 1983). This study aimed to close the gap in the literature by discerning if other factors in addition to previous trauma affected perceived stress from the COVID-19 pandemic.

Descriptive Statistics

All students at a high school in a rural county in the southeastern United States were asked to participate in an online survey through Google Form. Students were given a link to the survey in their cohort's Google Classroom. The survey asked students to complete a series of demographic questions, along with the ACEs questionnaire (Felitti et al., 1998) and the PSS-10-

C (Campo-Arias et al., 2020, Cohen et al., 1983). Demographic information included students' grade level, gender, and race/ethnicity. The survey also requested students to report their qualification status for the free and reduced lunch program, whom they lived with, and how many generations were living in their home. Students were told they did not have to participate in the study and could withdraw from the survey at any time without penalty. However, questions in the survey were set to required in the Google Form. In Google Form, when a question is set to required, the student cannot move forward to the next question without submitting an answer, which effectively eliminates the ability to skip questions. Those students who did not exit the survey went on to answer each question as it was required in order to move from question to question. The use of this form setting may have made students feel forced to complete the survey or answer questions they could have felt uncomfortable answering.

Out of 914 students in the high school, 446 surveys were completed, giving a response rate of 49%. With those surveys, the student population in the sample was comprised of 218 (48.9%) males and 228 (51.1%) females. Each grade level was represented with 150 (33.6%) freshmen, 115 (25.8%) sophomores, 110 (24.7%) juniors, and 71 (15.9%) seniors. Race and ethnicity categories were used based on available PowerSchool options for students when they register in the school system. For the survey, 349 (78.3%) students were white, seven (1.6%) students were black or African American, 13 (2.9%) students were American Indian or Alaskan Native, three (0.7%) students were Asian, two (0.4%) students were Native Hawaiian/Other Pacific Islander, 40 (9.0%) students were Hispanic or Latino, and 32 (7.2%) students identified as two or more race categories.

In order to better understand the environments in which students lived, demographic questions were used such as with whom the student lived and how many generations lived within

the student's home. Within the sample, 348 (78%) students lived with biological parents, 33 (7.4%) lived with a legal guardian/adoptive parent, nine (2%) lived with a family member, 12 (2.7%) lived with grandparents, 11 (2.5%) lived with both parent and grandparent, 32 (7.2%) lived with multiple responses, and one student (0.2%) lived with someone other than those mentioned above. When looking at the number of generations living in the household, the research determined that 363 (78%) students lived with two generations, 68 (15.2%) students lived with three generations, and 15 (3.4%) students lived with four generations.

Prior knowledge of students' qualification for the federal free and reduced lunch program and if counseling was utilized prior to the COVID-19 epidemic could offer insight about the students' socioeconomic status and access to resources. The free and reduced lunch program is determined by a sliding income scale which is based on the number of individuals in the household. According to the sample, 183 (41%) students qualified for the free and reduced lunch program and 263 (59%) students did not qualify. Students were also asked about prior counseling experience before the COVID-19 pandemic. In the sample, 101 (22.6%) students stated that they had received prior mental health services or counseling experience before the pandemic and 345 (77.4%) had not. Demographic data can be seen in Table 1.

Table 1

Characteristics of Survey Respondents (N=446)

Student Demographics	n	%
Grade Level		
Freshmen	150	33.6%
Sophomores	115	25.8%
Juniors	110	24.7%
Seniors	71	15.9%
Sex		
Female	228	51.1%
Male	218	48.9%
Race/Ethnicity		
White	349	78.3%
Black or African American	7	1.6%
American Indian or Alaskan Native	13	2.9%
Asian	3	0.7%
Native Hawaiian/Other Pacific Islander	2	0.4%
Hispanic or Latino	40	9.0%
Two or more race categories	32	7.2%
Living Arrangements		
Biological parent(s)	348	78%
Legal guardian/adoptive parent	33	7.4%
Family Member	9	2.0%
Other	1	0.2%
Grandparent(s)	12	2.7%
Parent/Grandparent	11	2.5%
Multiple Responses	32	7.2%
No. of Generations Living in the Home (Including the Student)		
2 Generations	363	78%
3 Generations	68	15.2%
4 Generations	15	3.4%
Qualifies for Free and Reduced Lunch		
Yes	183	41%
No	263	59%
Received Previous Counseling or Mental Health Services Prior to Pandemic		
Yes	101	22.6%
No	345	77.4%

Data from the ACEs scores indicated that 379 (85%) students had an ACE total of zero to three, and 67 (15%) students reported an ACEs score of four or more (Felitti et al., 1998). When looking at individual ACEs scores, 195 (43.7%) students did not have any ACEs. Considering those with ACEs, 116 (26%) students had one ACE, 48 (10.8%) students had two ACEs, 20 (4.5%) students had three ACEs, 19 (4.3%) students had four ACEs, 14 (3.1%) students had five ACEs, 12 (2.7%) students had six ACEs, 10 (2.2%) students had seven ACEs, seven (1.6%) students had eight ACEs, and five (1.1%) students had nine ACEs. The ACEs results for students are listed in Table 2.

Table 2

ACEs Results for Survey Respondents (N=446)

Student ACE Scores	n	%
ACEs Scores in Groups		
0-3	379	85%
4 or more	67	15%
Individual ACEs Scores		
0 ACEs	195	43.7%
1 ACE	116	26%
2 ACEs	48	10.8%
3 ACEs	20	4.5%
4 ACEs	19	4.3%
5 ACEs	14	3.1%
6 ACEs	12	2.7%
7 ACEs	10	2.2%
8 ACEs	7	1.6%
9 ACEs	5	1.1%
ACE Questions		
While you were growing up, during your first 18 years of life:		
Did a parent or other adult in the household often or very often… Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt?	71	15.9%

Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?	36	8.1%
Did an adult or person at least five years older than you ever… Touch or fondle you or have you touch their body in a sexual way? or Attempt or actually have oral, anal, or vaginal intercourse with you?	22	4.9%
Did you often or very often feel that… No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?	73	16.4%
Did you often or very often feel that… You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	20	4.5%
Were your parents ever separated or divorced?	209	46.9%
Was your mother or stepmother: Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit at least a few minutes or threatened with a gun or knife?	22	4.9%
Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?	74	16.6%
Was a household member depressed or mentally ill, or did a household member attempt suicide?	83	18.6%

Did a household member go to prison?	51	11.4%

The most common ACE among respondents was parental separation or divorce, with 209 (46.9%) students reporting this ACE (Felitti et al., 1998). The second most common ACE was a household member who suffered from depression, mental illness, or suicide attempts, totaling 83 (18.6%) students. When asked if a parent or an adult made them feel they might be physically hurt, 71 (15.9%) students reported this ACE. Those students who reported a parent or adult who physically injured or left marks totaled 36 (8.1%). Students who reported being sexually fondled or abused totaled 22 (4.9%), and those students who did not feel loved or supported totaled 73 (16.4%). Those who were neglected in some way regarding access to food, clothes, or medical care totaled 20 (4.5%) students. A mother or stepmother who threatened or abused was reported by 22 (4.9%) students. Students living with a parent or adult with substance abuse issues totaled 74 (16.6%), and students with a household member who went to prison totaled 51 (11.4%). In regards to the total ACE scores for students in the sample, the mean of total ACE scores was 1.482 with a standard deviation of 2.084 (M = 1.482, SD = 2.084).

The Perceived Stress Scale of COVID-19 (Campo-Arias et al., 2020, Cohen et al., 1983) includes 10 questions with five response options. The responses on questions 1, 2, 3, 6, 9 and 10 are scored from zero to four, and questions 4, 5, 7 and 8 are reversed scored as they are scored from four to zero (Campo-Arias et al., 2020, Campo-Arias et al., 2021, Cohen et al., 1983). When students were asked if they anticipated something serious happening unexpectedly with the epidemic, the majority of students (34.3%) selected never with the average of that question being 1.27 (M=1.27, SD=1.148). Students who felt they were unable to control the important things in their life because of the epidemic averaged 1.24, with the majority (41%) selecting

never (M=1.24, SD=1.297). Those students who felt nervous or stressed about the pandemic averaged 1.52, with the majority (34.5%) saying never and the next highest (23.3%) saying occasionally (M=1.52, SD=1.393). When students were asked if they felt confident in their ability to handle their personal problems related to the pandemic, the majority (24%) of students selected occasionally, with the average being 1.8 (SD ± 1.387). Students who felt optimistic that things were going well with the epidemic averaged 2.10, with the majority (29.8%) stating they occasionally felt that way (SD ± 1.298). Those who felt unable to cope with the things they had to do to monitor for possible infection averaged .78, with the majority (57.2%) saying never (SD ± 1.085). Students who felt as if they could control the difficulties that appeared as a result of the infection averaged 2.01, with the majority (22.6%) saying they occasionally felt that way (SD ± 1.417). When students were asked if they felt that they had everything under control in relation to the pandemic, the average was 1.96, with the majority (22.2%) stating that they occasionally felt that way (SD ± 1.409). Students who were upset that things related to the epidemic were out of their control averaged 1.37, with the majority (37.9%) never feeling that way (SD ± 1.315). Those who felt that difficulties were increasing in the days of the epidemic and that they were unable to overcome them averaged .96, with the majority (50.2%) never feeling that way (SD ± 1.173). PSS-10-C scores for students are listed in Table 3.

Table 3

Perceived Stress Scale of COVID-19 Responses for Survey Respondents (N=446)

Student PSS-10-C Scores	Never	Hardly Ever	Occasionally	Almost Always	Always	Mean	SD
PSS-10-C Statements							
I have felt as if something serious was going to happen unexpectedly with the epidemic.	0	1	2	3	4	1.27	1.148
I have felt that I am unable to control the important things in my life because of the epidemic.	0	1	2	3	4	1.24	1.297
I have felt nervous and stressed about the epidemic.	0	1	2	3	4	1.52	1.393
I have been confident about my ability to handle my personal problems related to the epidemic.	4	3	2	1	0	1.80	1.387
I have felt optimistic that things are going well with the epidemic.	4	3	2	1	0	2.10	1.298
I have felt unable to cope with the things I have to do to monitor for a possible infection.	0	1	2	3	4	.78	1.085
I have felt that I can control the difficulties that could appear in my life as a result of the infection.	4	3	2	1	0	2.01	1.417
I have felt that I have everything under control in relation to the epidemic.	4	3	2	1	0	1.96	1.409
I have been upset that things related to the epidemic are out of my control.	0	1	2	3	4	1.37	1.315

I have felt that the difficulties are increasing in these days of the epidemic and I feel unable to overcome them.	0	1	2	3	4	.96	1.173

Note. Descriptive statistics for the PSS-10-C in this sample are recorded above in Table 3 (Campo-Arias et al., 2020, Cohen et al., 1983).

Results

Students and parents were made aware of the research through announcements and flyers handed out at Freshmen Orientation and student homerooms, Schedule Pick-up, and Open House. Parents were informed that if they did not wish their student to participate that they should contact the school by email; however, no parents reached out with concerns. One student reached out stating they would not participate in the study. Parents and students were also told that students could decide not to participate at any time during the survey. Furthermore, if a student decided not to answer any questions, they could withdraw from participation at any time without penalty. The questions in the survey in Google Form required students to answer each question in order to move on to the next and complete the survey, which as noted previously could have caused some students to fill portions of the survey they would otherwise have skipped. The survey was deployed to 914 students. Google Form offers no record of how many students started the survey, felt they could not participate, or withdrew from participation. There were 446 students who filled out the survey completely, giving a response rate of 48.8%. The sample was coded in SPSS to only look at the sample size that had four or more ACEs (Felitti et al., 1998). Students who had four or more ACEs totaled 67 (15%) of the total sample. An independent-samples t-test addressed the hypotheses and considered statistical significance. Warner (2013) explained that this test is appropriate when comparing groups between subjects.

In regards to the independent-samples t-test, several assumptions must be met. First, the research examined one dependent variable of COVID-19-related perceived stress, which was measured on a continuous scale with a Likert-scale scoring order. Another assumption was met with independent variables broken down into two categorical groups. There were two categorical groups for each hypothesis, including prior mental health services and no mental health services, male and female, white students and non-white students, those who qualify for free and reduced lunch and those who do not, and those living with two generations in the home versus those living with three or more generations. An independent-samples t-test requires an assumption of the independence of observations within two groups, which was met when there were no students who could be in both groups. With each of the two groups mentioned above, students could only be in one of the two groups, for example either male or female, therefore meeting the assumption of independence of observations. The data was screened for outliers on both ACEs four or more and the PSS-10-C (Campo-Arias et al., 2020, Cohen et al., 1983; Felitti et al., 1998). Although a boxplot of ACEs (Figure 2) and of the PSS-10-C (Figure 3) showed evidence of outliers, the study allowed outliers to remain in the sample. These outliers add understanding of the trauma the students experienced and their perceived stress from COVID-19. Perceived stress scale scores were tested for normality using the Shapiro-Wilk test for each variable. The assumption of homogeneity of variances was tested for each hypothesis using Levene's test of equality of variances. A boxplot for ACE scores total are shown in Figure 2. The descriptive statistics for Figure 2 are listed in Table 4. Figure 3 displays a boxplot for PSS-10-C scores and the descriptive statistics for Figure 3 are listed in Table 5.

Figure 2

Boxplot for ACEs Total

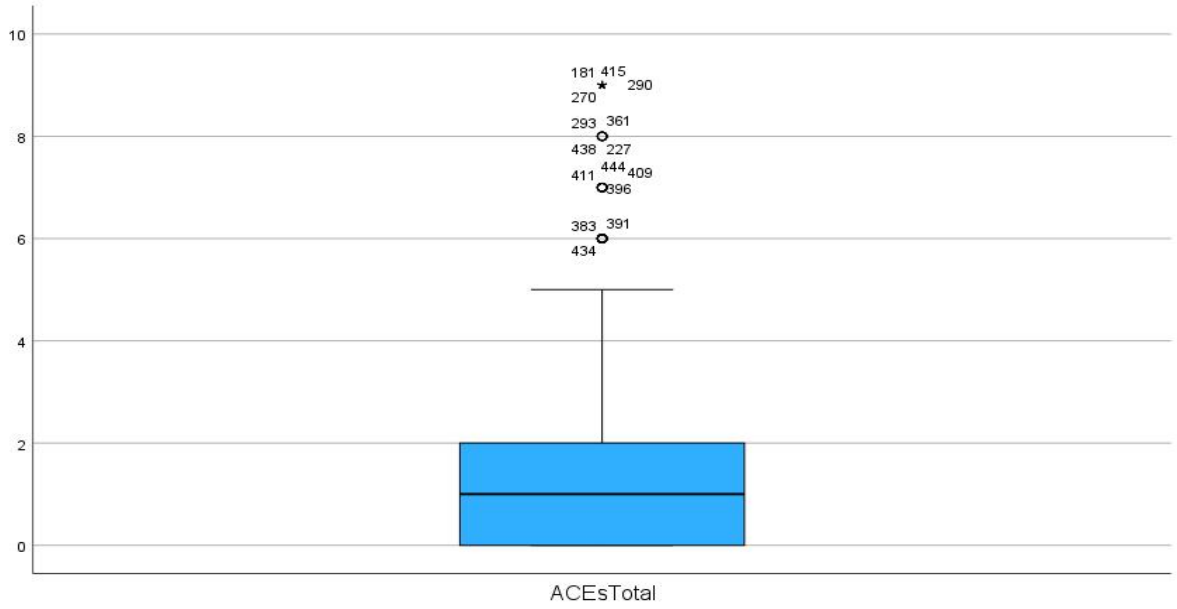


Table 4

Descriptive Statistics for Figure 2

Variable	n	M	SD
ACEs	446	1.48	2.087

Figure 3

Boxplot for PSS-10-C Scores

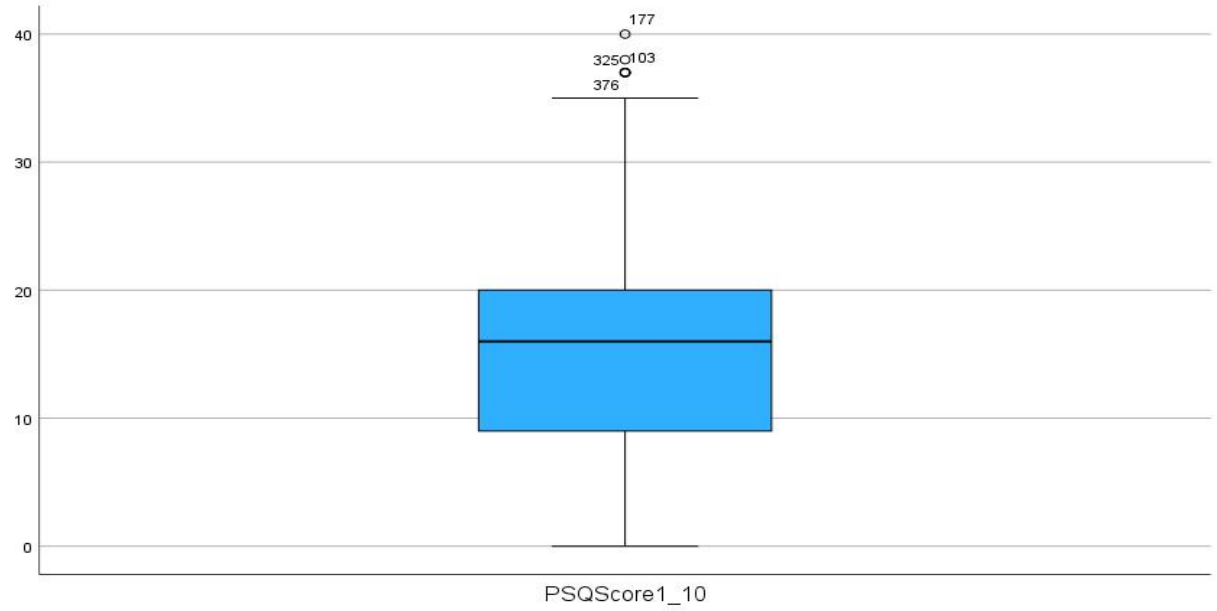


Table 5

Descriptive Statistics for Figure 3

Variable	n	M	SD
PSS-10-C Scores	446	15.02	8.5

Hypotheses

H1: Perceived stress levels from the COVID-19 pandemic will be higher among high school students in a rural county in the southeastern United States with four or more ACEs and prior counseling experience than those with four or more ACEs and no prior counseling experience.

H0: There will be no difference in the perceived stress levels from the COVID-19 pandemic among high school students in a rural county in the southeastern United States with

four or more ACEs and prior counseling experience than those with four or more ACEs and no prior counseling experience.

This independent-samples t-test compares students with four or more ACEs and their PSS-10-C scores (*N=67*) with the two independent samples consisting of students with counseling experience prior to COVID-19 and those without prior counseling experience (Campo-Arias et al., 2020, Cohen et al., 1983; Felitti et al., 1998). The continuous variable of the Perceived Stress Score was the dependent variable and the independent variable was categorical containing two groups of students: students who received prior mental health services and students who did not. Out of the sample with four or more ACEs, 32 (48%) students had previous mental health or counseling experience prior to COVID-19 and 35 (52%) students did not. The PSS-10-C scores were normally distributed both for those who had not received prior mental health services (p = .183) and for those who had (p = .801), as assessed by Shapiro-Wilk's test (p < .05). There was homogeneity of variances for those with previous mental health services and those without, as assessed by Levene's test for equality of variances (p = .071). The mean difference for those who had previous mental health services was .535 (95% CI, -4.51 to 3.44) higher than those without previous services. Those who received prior mental health services or counseling experience before COVID-19 (22.63) scored slightly higher on the perceived stress scale than those who had not received services (22.09).

The sample of students limits the validity of the survey results; therefore, the effect size was investigated further. The effect size for this hypothesis was considered in relation to Cohen's d to evaluate the strength of the difference between the two groups (Panzarella et al., 2021, Warner, 2013). Cohen (1988) recommended .2, .5, and .8 as small, medium, and large effects for Cohen's d. The result of this hypothesis was a Cohen's d of d = .066, indicating a very small

effect size. The effect size calculation is influenced by the research question and the research design, with this case being the Cohen's d from the independent-samples t-test (Lakens, 2013). There was no statistically significant difference ($t(67) = -.269$, $p = .79$) in the perceived stress of COVID-19 for those who had received previous mental health services and those who did not. Therefore, the result fails to reject the null hypothesis in finding that there is no statistically significant difference in the perceived stress levels from the COVID-19 pandemic among high school students in a rural county in the southeastern United States with four or more ACEs and prior counseling experience than those with four or more ACEs and no prior counseling experience. Previous mental health services data can be seen in Table 6.

Table 6

Descriptive Statistics for Previous Mental Health Services (N=67)

Previous Mental Health Services	Frequency	%	M	SD
Yes	35	52.2	22.63	8.782
No	32	47.8	22.09	7.368

H2: Perceived stress levels from the COVID-19 pandemic will be higher among female high school students in a rural county in the southeastern United States with four or more ACEs than male high school students with four or more ACEs.

H0: There will be no difference in the perceived stress levels from the COVID-19 pandemic between male and female high school students in a rural county in the southeastern United States with four or more ACEs.

An independent-samples t-test was used for the second hypothesis with the continuous dependent variable being the Perceived Stress Score. Among students with four or more ACEs and the PSS-10-C scores, independent variables or gender differences of males and females were considered for this hypothesis (Campo-Arias et al., 2020, Cohen et al., 1983; Felitti et al., 1998).

In this sample, 24 (35.8%) students were male and 43 (64.2%) students were female. PSS-10-C scores were normally distributed for both males (p = .899) and females (p = .187) as assessed by Shapiro-Wilk's test (p < .05). The two groups of males and females were evaluated and the data met the assumption of homogeneity of variances as assessed by Levene's test for equality of variances (p = .237). The mean difference for females on the PSS-10-C was 2.464 (95% CI, -6.562 to 1.634) higher than males. Females with four or more ACEs scored higher (23.26) on the PSS-10-C than males with four or more ACEs (20.79).

In regards to this hypothesis, Cohen's d is reported at d =.306, which estimates between a small and medium effect size in regards to PSS-10-C scores among males and females with four or more ACEs (Lakens, 2013). There was no statistically significant difference (p =.23) in the perceived stress of COVID-19 for males and females, t(67) = 1.201, p = .234. Although the mean score for males and females was different on the PSS-10-C, it was not significant enough to show a difference in how males and females with four or more ACEs in a rural county in the southeastern United States responded to the PSS-10-C. Therefore, the data fails to reject the null hypothesis. The demographic data for gender can be seen in Table 7.

Table 7

Descriptive Statistics for Gender (N=67)

Gender	Frequency	%	M	SD
Male	24	35.8	20.79	7.712
Female	43	64.2	23.26	8.235

H3: Perceived stress levels from the COVID-19 pandemic will be higher among non-white high school students in a rural county in the southeastern United Sates with four or more ACEs than white students in a rural county in the southeastern United Sates with four or more ACEs.

H0: Ethnicity and race makes no difference in the perceived stress levels from the COVID-19 pandemic among high school students in a rural county in the southeastern United States with four or more ACEs.

The hypothesis considered students who scored four or more on ACEs in addition to ethnicity and race, defined as white and non-white students (Felitti et al., 1998). The race/ethnicity categories included in the data were American Indian, black or African American, Native Hawaiian/Other Pacific Islander, Asian, white, Hispanic/Latino and Two or more race categories. It is important to note that 47 (70%) students in the sample are white and 20 (30%) students are non-white. The PSS-10-C scores were normally distributed for both white students (p = .416) and non-white students (p = .719) as assessed by Shapiro-Wilk's test ($p < .05$). In regards to white students and non-white students, the data met the assumption of homogeneity of variances as assessed by Levene's test for equality of variances ($p = .637$). The mean score for white students on the PSS-10-C (Campo-Arias et al., 2020, Cohen et al., 1983) was 21.38 and the mean score for non-white students was 24.70. The mean difference with non-white students was 3.317 (95% CI, -7.580 to .946) higher than white students. The study used a t-test to determine significance, $t(67) = 1.554$, $p = .125$. With a p value of .125, it was determined that the mean of the PSS-10-C scores was not statistically significant between the groups and therefore fails to reject the null hypothesis. Race and ethnicity demographic data is shown in Table 8.

Table 8

Descriptive Statistics for Race/Ethnicity (N=67)

Race/Ethnicity	Frequency	%	M	SD
White	47	70	21.38	7.798
Non-white	20	30	24.70	8.455

H4: High school students in a rural county in the southeastern United States with higher socioeconomic status and four or more ACEs will have less perceived stress from the COVID-19 pandemic than those high school students in a rural county in the southeastern United States with lower socioeconomics and four or more ACEs.

H0: Socioeconomic status does not make a difference in the perceived stress levels from the COVID-19 pandemic for high school students in a rural county in the southeastern United States.

Socioeconomic status was determined by assessing the qualification of the federal free and reduced lunch program. This program considers the total income for all members of the household to determine eligibility. An independent samples t-test was conducted with the continuous variable of the perceived stress scale. The sample with four or more ACEs was considered, as well as the independent samples of those who qualified for free and reduced lunch and those who did not (Felitti et al., 1998). Upon comparing these two groups, 42 (63%) students qualified for free and reduced lunch and 25 (37%) students did not qualify. PSS-10-C (Campo-Arias et al., 2020, Cohen et al., 1983) scores were normally distributed for both those who qualified for the free and reduced lunch program ($p = .588$) and those who did not ($p = .462$) as assessed by Shapiro-Wilk's test ($p < .05$). Using Levene's test for equality of variances, homogeneity of variances was met for students who qualified for free and reduced lunch and those who did not ($p = .576$). The mean difference on the PSS-10-C for those who qualified for free and reduced lunch was 3.211 (95% CI, -.819 to 7.242) higher than those who did not qualify. The mean score for those who qualified for free and reduced lunch was 23.57 on the PSS-10-C and those who did not qualify had a mean score of 20.36. Cohen's d for this hypothesis was reported as $d = .402$, estimating a small to medium effect size when considering

students with four or more ACEs and their free and reduced qualification (Lakens, 2013). Results from an independent t-test indicated that there was no statistically significant difference in the PSS-10-C score for those who qualified for free and reduced lunch and those who did not $t(67) = 1.591$, $p = .116$. Therefore, qualification of the federal free and reduced lunch program did not make a statistically significant difference in the perceived stress scores for students with four or more ACEs in a rural county in the southeastern United States. This data fails to refect the null hypothesis. Deographic data for free and reduced lunch qualifications are shown in Table 9.

Table 9

Descriptive Statistics for Free and Reduced Lunch Qualifiers (N=67)

Qualify for Free and Reduced Lunch Program	Frequency	%	M	SD
Yes	42	63	23.57	8.046
No	25	37	20.36	7.889

H5: High school students in a rural county in the southeastern United States who have four or more ACEs and are living with multi-generations in the home will have higher perceived stress from the COVID-19 pandemic than those high school students in a rural county in the southeastern United States having four or more ACEs and living with only two generations.

H0: There is no difference in the perceived stress levels from COVID-19 for high school students in a rural county in the southeastern United States who have four or more ACEs and are living with multi-generations in the home than high school students in a rural county in the southeastern United States with four or more ACEs and living with only two generations.

Students living in multigenerational homes and those living with only two generations are considered in this hypothesis using an independent samples t-test. The continuous variable was the perceived stress scale and the sample was represented by those students with four or more

ACEs (Felitti et al., 1998). In this sample, 52 (78%) students lived with two generations in the home and 15 (22%) students lived with three or more generations within the home. PSS-10-C scores were normally distributed for students who lived with two generations ($p < .312$) and also showed a normal distribution for those who lived with three or more generations ($p = .876$) in the home as assessed by Shapiro-Wilk's test ($p < .05$). The homogeneity of variances was assessed and met using Levene's test for equality of variances ($p = .641$). The mean difference on the PSS-10-C for those with four or more ACEs and who lived with two generations in the home was .653 (95% CI, -4.111 to 5.416) higher than those who lived with three or more generations. The mean score for those living with two generations in the home was 22.52 on the PSS-10-C (Campo-Arias et al., 2020, Cohen et al., 1983), and those living with three or more generations had a mean score of 21.87. The effect size of this hypothesis was considered using Cohen's d and was found to be very small with $d = .08$ (Lakens, 2013). Concerning this hypothesis, the independent samples t-test showed there was no statistically significant difference ($p = .785$) in PSS-10-C scores of students with four or more ACEs living in a home with two generations and those living with three or more generations. Therefore, the number of generations living in the home made no difference in scores on the PSS-10-C for students with four or more ACEs in a rural county in the southeastern United States. The data failed to reject the null hypothesis. Demographic data for the number of generations living in the home are shown in Table 10.

Table 10

Descriptive Statistics for Generations Living in the Home (N=67)

Generations Living in the Home	Frequency	%	M	SD
2 Generations	52	78	22.52	7.860
3 or More Generations	15	22	21.87	9.078

Chapter Five: Conclusions

Overview

This study was designed to better understand the impacts of perceived stress from the COVID-19 pandemic on high school students with previous trauma. To fill in gaps in the research, high school students were asked to complete an online survey to help determine if identified independent variables affected their reaction to stress caused from COVID-19. The ACEs Questionnaire and the PSS-10-C instruments were used to evaluate the effects of previous trauma on high school students' perceived stress from the COVID-19 pandemic in a rural county in the southeastern United States (Campo-Arias et al., 2020; Cohen et al., 1983; Felitti et al., 1998). Independent variables such as prior mental health care or counseling experience, gender, race and ethnicity, socioeconomic status, and the number of generations living in the home were each considered. The implications of the study will be discussed, along with limitations and recommendations for future research. In this chapter, each hypothesis will be stated and results for each reviewed in light of current literature, relevant studies, and applicable theories.

Discussion

As the COVID-19 pandemic affected education, research was needed to better understand the potential profound effects on high school students. Research has shown that the psychological effects of the pandemic can be exacerbated for adolescents who are more vulnerable to the negative effects of stress (Zhang et al., 2020). Observing students during the COVID-19 pandemic brought forth many questions about consequences and potential impacts of the pandemic on education. How an adolescent responds to the pandemic can be characterized by their prior exposure to emergency situations, socioeconomic background, familial characteristics, and cultural background (Imran et al., 2020).

When looking at the sample overall, students with four or more ACEs (M = 22.37) scored higher on the PSS-10-C than students with zero to three ACEs (13.72) (Campo-Arias et al., 2020, Cohen et al., 1983; Felitti et al., 1998). Previous studies have indicated that the COVID-19 pandemic created more psychological issues for students with previous ACEs (Fegert et al., 2020; Guo et al., 2020; Henderson et al., 2020). This study supports previous research studies in showing clear evidence of higher perceived stress levels in those with four or more ACEs.

This research was conducted in an effort to determine the importance of each variable on the outcome of perceived stress from the COVID-19 pandemic. The study included parameters to narrow the sample to only include students who had four or more ACEs to account for previous trauma for variable comparison (Felitti et al., 1998). A review of the literature suggested that adolescents with previous trauma, existing mental health issues, or low socioeconomic status can be profoundly affected by the COVID-19 pandemic (Fegert et al., 2020). The pandemic likely increased the risk of ACEs for some children, and ACEs can have lasting physical and mental health impacts (Afifi et al., 2020a; Bryant et al., 2020; Fegert et al., 2020; Kidman et al., 2019; Wolff et al., 2018). Therefore, this study sought to determine if those with four or more ACEs, along with the variables chosen were more affected by perceived stress from the COVID-19 pandemic.

A correlational analysis was used to examine each set of variables to determine if a statistically significant relationship between the variable sets existed. Sets considered for correlational analysis included perceived stress and previous counseling or mental health services, perceived stress and gender, perceived stress and race/ethnicity, perceived stress and socioeconomic status, and perceived stress and the number of generations living in the home. An independent samples t-test was conducted and data results were analyzed using SPSS software.

Details of each hypothesis analysis were outlined in chapter four. Students who did not have four or more ACEs were eliminated, thus making the sample size too low. Because online Google Form questions were required, some students may have felt that they needed to answer the entire survey. Although results of the study were determined to be insignificant, further research or different research methods could yield significant results. Results of this quantitative study suggested several findings that were further examined by each hypothesis.

H1: Perceived stress levels from the COVID-19 pandemic will be higher among high school students in a rural county in the southeastern United States with four or more ACEs and prior counseling experience than those with four or more ACEs and no prior counseling experience.

H0: There will be no difference in the perceived stress levels from the COVID-19 pandemic among high school students in a rural county in the southeastern United States with four or more ACEs and prior counseling experience than those with four or more ACEs and no prior counseling experience.

The first hypothesis assumed that if students with previous trauma had received counseling or mental health services prior to the COVID-19 pandemic, their perceived stress would be higher than those without prior mental health services. Prior research suggested that as ACEs increase, the impact of adolescent mental health also increases (Bomysoad & Francis, 2020). Through a systematic examination and meta-analysis of ACE scores with current mental health conditions, Bomysoad and Francis (2020) found that adolescents between the ages of 12-17 with four or more ACEs had a greater likelihood of depression or anxiety. Other studies also showed that those with four or more ACEs had significant physical and mental health issues as adults, as well as lower socioeconomic status (Guo et al., 2020; Hege et al., 2020). A

multivariable linear regression study by Guo et al. (2020) used the ACEs questionnaire in an online survey with questions about COVID-19 to assess PTSD symptoms and anxiety. It was found that higher ACEs correlated with higher post traumatic stress and anxiety (Guo et al., 2020).

The null hypothesis was supported by the evidence indicating that there was no significant difference in the perceived stress levels from the COVID-19 pandemic for those with previous counseling or mental health services (22.63) than those without (22.09). This study suggested that those with four or more ACEs and previous counseling or mental health services were not affected significantly by the perceived stress of the pandemic, which contradicts studies cited previously. According to Klootwijk et al. (2021), some studies found that there was a decrease in mental health issues and increases in mood during COVID-19 lockdowns due to a decrease in workload, bullying, and performance pressure. In this study, the PSS-10-C asked students to answer questions about the COVID-19 pandemic and its relationship to them. The insignificant results of this hypothesis would support the null hypothesis, which states that there is no difference in perceived stress for those who have had previous counseling and those who have not. This study found those with previous mental health counseling and those without had no significant difference in the PSS-10-C scores, contradicting previous studies cited.

H2: Perceived stress levels from the COVID-19 pandemic will be higher among female high school students in a rural county in the southeastern United States with four or more ACEs than male high school students with four or more ACEs.

H0: There will be no difference in the perceived stress levels from the COVID-19 pandemic between male and female high school students in a rural county in the southeastern United States with four or more ACEs.

The study aimed to explore the difference between males and females in relation to their perceived stress regarding COVID-19. Previous research suggested that although anxiety and depression increased among adolescents, females had a particularly difficult time with depressive symptoms during the social isolation of the pandemic (Hawes et al., 2021). In a study with two longitudinal investigations of 451 adolescents and young adults, Hawes et al. (2021) used the Children's Depression Inventory (CDI), the Screen for child anxiety-related disorder (SCARED), and a pandemic experiences survey to examine symptoms stemming from the COVID-19 pandemic. These findings suggested that females experienced an increase in depression, somatic symptoms, and mental health symptoms during the pandemic (Hawes et al., 2021). Females have been shown to have more COVID-19 related concerns and internalized mental health symptoms (Marie et al., 2022). A study by Lahav (2020) with a sample total of 793 participants considered those with previous trauma (81.3%) and symptoms related to the COVID-19 pandemic. The Brief Symptom Inventory-18 scale, a modified version of the PTSD Checklist, and a Trauma History Screen were used to measure trauma exposure and symptoms related to stress from COVID-19. This study supported previous COVID-19 studies with adults, which stated that during the COVID-19 pandemic, females experienced a higher degree of psychological distress than males and were found to have an elevated risk for depression and anxiety.

Findings of the current study contradicted previous research and suggested no significant difference in the perceived stress from the COVID-19 pandemic in males and females. This study found that although females (23.26) scored an average of three points higher than males (20.79) on the perceived stress scale, results were not significant. Therefore, the results support the null hypothesis that there was not a significant difference between the PSS-10-C scores for female and male students.

H3: Perceived stress levels from the COVID-19 pandemic will be higher among non-white high school students in a rural county in the southeastern United Sates with four or more ACEs than white students in a rural county in the southeastern United Sates with four or more ACEs.

H0: Ethnicity and race makes no difference in the perceived stress levels from the COVID-19 pandemic among high school students with four or more ACEs in a rural county in the southeastern United States.

This hypothesis considered students with four or more ACEs and previous trauma in relation to race and ethnicity. Steptoe et al. (2019) suggested that further research is needed to understand the effects of culture, ethnicity, and gender on outcomes of ACEs. A consideration of the National Comorbidity Survey Adolescent Supplmental (NCS-A) from 2001 to 2004, along with a recent sample from the previous respondents, gave more insight into race and ethnicity with ACEs (Elkins et al., 2019). This study indicated that race and ethnicity can impact the association between ACEs and PTSD symptoms in the United States. A review of the literature by Pumariega et al. (2022) found that African Americans still suffer historical trauma from racial discrimination, which contributes to health inequalities, mistrust of the government, and higher risk of dying from the COVID-19 pandemic. Pumariega et al. stated that epidemiological and clinical studies haved suggested a higher rate of psychosis in African Americans when compared to other groups, possibly related to chronic and traumatic stress. Other studies found higher rates of psychopathology and lower rates of academic performance among minority children who have experienced trauma (Elkins et al., 2019).

When considering ethnicity and race in this study, the lack of student diversity within the current study did not allow for reliable data about how the pandemic affected students with

previous trauma in particular ethnicities or races. This study focused on a small rural area in the Appalachian Mountains, made up of farmland, small towns, and access to the Blue Ridge Parkway and Great Smoky Mountains National Park. The population of the rural county is lacking in diversity and economic advantage, which shows in the overall socioeconomic, racial, and ethnic makeup of the school system. White students, who composed 70% of the study population, scored an average of 21.38 on the PSS-10-C scale (Campo-Arias et al., 2020, Cohen et al., 1983). Non-white students scored an average of 24.70 and their scores were not evenly distributed. Using these results, the study disaggregated the categories further by examining each ethnicity and race designation. Although insignificant, results showed white students and black or African American students had the biggest margin between scores on the PSS-10-C, with black or African American students (31.00) scoring an average of almost 10 points higher than white students (21.38). The studies cited above were further supported by the results of this study, which revealed higher scores on the PSS-10-C for black or African-American students than white students.

H4: High school students in a rural county in the southeastern United States with higher socioeconomic status and four or more ACEs will have less perceived stress from the COVID-19 pandemic than those high school students in a rural county in the southeastern United States with lower socioeconomics and four or more ACEs.

H0: Socioeconomic status does not make a difference in the perceived stress levels from the COVID-19 pandemic for high school students in a rural county in the southeastern United States.

This hypothesis measured socioeconomic status using the student qualification for free and reduced lunch status. The federal guidelines for eligibility of the Free and Reduced Lunch

Program are based on the number of individuals in the household and the household income (United States Department of Agriculture, n.d.). Economic issues during the pandemic such as unemployment, decrease in income, and unmanageable debts can be correlated with increased rates of mental illness and substance abuse (Fegert et al., 2020). Previous studies showed that financial status as well as socioeconomic status in early childhood can impact the risk of experiencing ACEs (Lackova Rebicova et al, 2020; Straatmann et al., 2020). A study by Straatmann et al. (2020) examined surveys using a causal mediation analysis of socioeconomic status and found a relationship between disadvantaged socioeconomic status and ACEs. The study explored the role of ACEs and social inequalities with validated measures and different dimensions of socioeconomic variables such as maternal education (Straatmann et al., 2020). Effects of the pandemic can be exacerbated for adolescents by pre-existing issues such as mental health, socioeconomic disadvantage, and victimization, exposing evident inequalities that exist (Danese & Smith, 2020; Henderson et al., 2020).

This study found no significant difference in PSS-10-C scores for those who qualified for free and reduced lunch (23.57) and those who did not (20.36), although those students who qualified scored higher (Campo-Arias et al., 2020, Cohen et al., 1983). Therefore, the current study contradicts prior research that suggested socioeconomic status might make a difference in ACEs and perceived stress from the COVID-19 pandemic. One prior study encouraged entities to have interventions that target a wide range of socioeconomic levels and other factors (Houtepen et al., 2020). As educators consider the impact of COVID-19 and socioeconomic status, it is in the best interest of students to provide support to all levels of socioeconomic categories.

H5: High school students in a rural county in the southeastern United States who have four or more ACEs and are living with multi-generations in the home will have higher perceived stress from the COVID-19 pandemic than those high school students in a rural county in the southeastern United States having four or more ACEs and living with only two generations.

H0: There is no difference in the perceived stress levels from COVID-19 for high school students in a rural county in the southeastern United States who have four or more ACEs and are living with multi-generations in the home than high school students in a rural county in the southeastern United States with four or more ACEs and living with only two generations.

Demographic data revealed numerous students within the sample population that are cared for by grandparents or within multigenerational homes. Therefore, the study examined the impact of multiple generations living in one home on stress perception. According to Dunfee et al. (2021), grandparent caregivers could reflect lower socioeconomic status and are more prevalent in the Appalachia area. Dunfee et al. compared two rural counties in Kentucky, where 57% of co-resident grandparents have formal responsibility of grandchildren (Dunfee et al., 2021). Data collection included interviews and surveys recognizing unique cultural differences in the way grandparents care for grandchildren (Dunfee et al., 2021). The rural area selected for this study in the southestern United States was considered because of a higher ACE occurrence due to increased social and economic stress, higher rates of domestic violence, anxiety, depression, child abuse, and substance abuse in the Appalachian Mountains region (Hege et al., 2020; Thomas & Brossoie, 2019).

This hypothesis considered whether students living with multi-generations in a household had higher perceived stress from the COVID-19 pandemic than those with only two generations. In the sample, 78% lived with only two generations in the home, while those living with three or

more generations in the home equaled 22%. Those with only two generations in the home scored 22.52 on their perceived stress scores, while those with three or more generations in the home scored 21.87, suggesting that those with three or more generations in the home had less perceived stress than those with only two generations in the home. Results from this hypothesis were found to be insignificant and therefore, contradict previous studies.

Implications

The implications of this study contributed to the body of knowledge as education stakeholders move forward in caring for adolescents after the pandemic. Although the null hypothesis was proven with each hypothesis, implications suggest the need to better understand COVID-19 effects on adolescents with previous trauma still exists. High school students with previous trauma perceived stress in different ways. Those with previous counseling or mental health experience scored slightly higher on the PSS-10-C than those without previous services. Two things could account for this. Although previous counseling or mental health services could indicate a previous trauma or a need for services in the past, the long-term effects of COVID-19 could take months to fully understand (Esterwood & Saeed, 2020). Another possible implication concerning the acceptance of the null hypothesis could relate to students having previous counseling or mental health services and using strategies they learned to deal with stress during the pandemic. Use of previous mental health services could suggest that the students with previous trauma were better equipped with coping skills or resources. However, Esterwood & Saeed (2020) suggested that the COVID-19 pandemic will affect each individual differently.

This study found that females scored slightly higher on the PSS-10-C than males. This suggests that females had more perceived stress but both males and females with previous trauma could have had a difficult time processing their emotions and stress during the pandemic.

Non-white students scored slightly higher than white students, although results proved insignificant. African American students with previous trauma who scored higher on the PSS-10-C could have a myriad of reasons affecting their score, including systemic racism, lack of services, and isolation in a rural community predominately inhabited by a white population. Considering socioeconomic factors and generations in the home, the study focused on the rural Appalachian area to examine if these factors indicated a need for interventions targeting this unique culture. These variables were also found to be insignificant. Implications of socioeconomic status and perceived stress could suggest that these students have had adversity in the past, which lead to resiliency in the way that they perceived the stress from the pandemic. The insignificant results comparing students living in multi-generational homes to those living with only two generations imply that students have household support to manage perceived stress from the pandemic (Gilligan et al., 2020). A secondary implication could be that students living in multi-generational homes have experienced previous trauma relating to low socio-economic status or negative familial circumstances. Therefore, future research could consider resiliency in relation to this variable as well as other variables considered in the study.

Identifying ACEs in students can serve as a screener for previous trauma and can serve to better understand possible chronic physical illness as well as mental health issues (Harper, 2019). Although, each hypothesis in this study was proved as not statistically significant, it does not diminish the need to understand those students with previous trauma and the profound effects of the COVID-19 pandemic. These hypotheses and results from this study propose that interventions need to target all students, regardless of previous trauma, gender, race, or socioeconomic status, when offering help for the effects of the COVID-19 pandemic. The results of this study impact the field of counseling by recognizing that students of all genders,

socioeconomic status, race and ethnicity, etc., have been impacted by the COVID-19 pandemic in various ways regardless of who they live with. The theoretical and practical implications of trauma theory consider development, attachment, and resiliency in order to provide safe environments for students to learn, heal, and see positive outcomes in education. Trauma-informed classrooms are necessary to meet the needs of students struggling with previous trauma and bridge the educational, emotional, and socal gaps created by the pandemic. Therefore, educators and mental health stakeholders must work together to provide interventions and academic supports that help all students get back on track after the academic, social, and emotional learning gaps caused by the effects of COVID-19.

A Christian worldview based on these implications leads the study to consider other ways to find interventions for adolescents dealing with the stress of COVID-19. When comfort is needed, many people turn to faith and spiritual connections. One study found a significant role of spiritual connection in reducing stress levels associated with the COVID-19 pandemic (Algahtani et al., 2022). The COVID-19 pandemic continues to produce traumatic stress which can affect one's coping capabilities (Kira et al., 2023). Therefore, having the ability to rely on one's faith allows for more effective coping skills. For students to grow after trauma, they need to recognize existential truths such as positive self-efficacy and resiliency during uncertain times (Mistur et al., 2022). In education, school counselors can educate and encourage students to find effective coping skills to deal with the stress of the pandemic and other trauma. School counselors can pray that students find their spiritual connection in order to deal with the stressors at home, school, and throughout society.

Limitations

All students who participated in the study were from the same geographical area in a rural county in the southeastern United States, and therefore are not a reflection of the entire population of the United States. This geographical area represents students in a subculture with unique characteristics found in the Appalachian rural mountain area. Although inferences can be made from the results, this sample is specific and limited in scope, causing a threat to the external validity of the study as the findings cannot be generalized to other high school students. The survey was conducted after students returned to school with few pandemic safety precautions. The school environment was closer to a traditional pre-pandemic experience and the lack of caution and safety protocols could have skewed student responses to questions about perceived stress related to the COVID-19 pandemic. Students could have had less stress or immediate issues related to the pandemic when they filled out the survey.

Data was collected through an online survey in Google Forms and deployed through each students' Google Classroom platform. Students received information about the study and were told that they could withdraw from participation at any time without penalty and exit the survey. The survey was deployed to 914 students, with 446 students participating and each grade level (9-12) represented. The larger sample size of students who completed the survey exceeded the needed range of 250-300 participants to represent the population of interest (Heppner et al., 2016). However, once the sample was narrowed to include only those with four or more ACEs, the "n" was insufficient for the study. Narrowing the sample was necessary to only include those with four or more ACEs as this represented students with prior trauma as determined in previously cited studies. This study informed students and parents that the survey was voluntary and that students could choose not to participate in the survey at any time with no penalty. If a

student decided not to participate, he/she could exit the survey at any time. The 446 students completed the survey in a default setting that automatically required each question in Google Form. This error may have caused some students to feel they had to complete the entire survey, leading to a threat to the internal validity of the study.

Delimitations included only using one high school in the rural area to gain information. After speaking with the county superintendent, it was decided that only one of two high schools would be used with passive consent. Demographic data was examined to find possible implications for this rural population, which provided a bigger picture of this sample. Limitations were also examined in relation to the variables considered. Each grade level was represented. However, mostly 9th graders responded to the online survey. Gender was equally represented within the sample, with 51.1% female and 48.9% male students responding. Race and ethnicity reflected the unequal representation of minorities within the sample, with 78.3% of form responses from white students. Students were also asked with whom they lived and the number of generations living in the home. Results indicated 78% lived with a biological parent or only one generation in the home. These demographic questions showed limitations of the sample size in comparison to a larger population. Once the study narrowed down the sample to only consider those with four or more ACEs, the sample size became significantly smaller to only include 67 students. This delimitation affected the scope of the research and prevented the study from considering the needs of the greater population. The intent of the study was to learn more about specific variables in relation to previous trauma and perceived stress from the pandemic. However, the scope of the sample size and the required questions on the Google Form limited the results and threatened the internal validity of the study.

Recommendations for Future Research

As more information emerges about the COVID-19 pandemic, the effects of online learning and social isolation are still being examined. Further research is needed to better understand how adolescent social development, mental health, and education have been impacted by the pandemic. Research on evolving mental health care is also needed to help stakeholders plan for and meet the needs of students (Henderson et al., 2020). The lack of in-person learning during critical years of development could create overwhelming learning gaps. Continued research findings support teachers and educators as they work with students who are lacking in content areas.

The theoretical framework for this study was established in trauma theory, with the understanding that students with previous trauma can have difficulty processing future trauma. Trauma theory and research open up ways to interrupt tragic cycles that effect individuals, groups, and generations (Dent, 2020). Although this study considered students with previous trauma and demographic variables, results were not significant. The data indicated a wide score range between white students and black or African American students on the PSS-10-C (Campo-Arias et al., 2020, Cohen et al., 1983). This result implied further research could provide more detailed data concerning ethnicity and race as they pertain to the pandemic. Race and ethnicity affect the way students responded due to other traumas, systemic racism, and culture responses. This could also be further examined by assessing the COVID-19 pandemic. Students will need continued emotional and academic support to be successful in coping with the aftermath. Effects of the pandemic need to be continually analyzed to better understand how students were impacted.

This small rural area with little diversity and the small sample size did not yield significant results; however, there is much to learn from the COVID-19 pandemic and its impact on adolescents in the area. Students with previous trauma can have lingering effects that shape how they cope with future difficulties. Previous studies have indicated that race, ethnicity, and socioeconomic status could have already been factors disproportionately impacted by COVID-19, thereby further influencing the mental health status in adolescents (Cockerham et al., 2021; Gazmararian et al., 2021). This study attempted to learn more about specific variables that influenced how adolescents responded to perceived stress from the COVID-19 pandemic. As with this study, exploration of the impact of COVID-19 on adolescents must be continued. Increasing resiliency and helping adolescents learn techniques to lessen trauma can support them through future issues. With the right tools, educators can begin to repair the gaps in education, and mental health experts can begin to broaden their understanding of the impact that the COVID-19 pandemic had on adolescents, especially those with previous trauma.

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Appendix A

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

August 8, 2022

Kari Russell
Robert Pincus

Re: IRB Approval - IRB-FY21-22-906 Perceived Stress Effects of COVID-19 Pandemic on High School Students with Previous Trauma in a Rural County in Southeastern United States

Dear Kari Russell, Robert Pincus,

We are pleased to inform you that your study has been approved by the Liberty University Institutional Review Board (IRB). This approval is extended to you for one year from the following date: August 8, 2022. If you need to make changes to the methodology as it pertains to human subjects, you must submit a modification to the IRB. Modifications can be completed through your Cayuse IRB account.

Your study falls under the expedited review category (45 CFR 46.110), which is applicable to specific, minimal risk studies and minor changes to approved studies for the following reason(s):

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

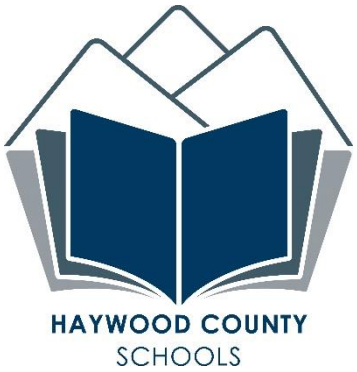
Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

Appendix B



Haywood County Schools

[redacted]

August 8, 2022

Dear Kari Russell,

Your doctoral research study through Liberty University has been approved in Haywood County Schools. Please let me know if you want or need additional information. Do not hesitate to call me if you have any questions.

Sincerely

[redacted]

Dr. Bill Nolte

Superintendent

Appendix C

Research Participants Needed

Perceived Stress Effects of COVID-19 Pandemic on High School Students with Previous Trauma in a Rural County in Southeastern United States

Research Criteria

- [redacted] Schools high school student at one of the four public schoolsNinth through Twelfth Grade Student

Research Purpose

The purpose of this research is to consider the stressful effects of the COVID-19 pandemic on high school students with previous adverse childhood experiences. This data will allow educators to make informed decisions about programs, materials needed, and services performed within the school system. Understanding stress effects will allow educators to serve students in various capacities to improve educational gaps resulting from the pandemic.

Study Procedures

Students must be in ninth through twelfth grade at one of the public high schools in the county in order to be eligible to participate. Participants, if willing, will be asked to complete a short survey and will be sent a link to his or her school email through the students' Google Classroom. It should take approximately 10 minutes to complete the survey. Participation will be completely anonymous, and no personal, identifying information will be collected from your student(s).

Research Benefits

There are no direct benefits to your child for participating in this research project. However, the indirect benefits outweigh the potential risks for participating. The results will be helpful in informing educational stakeholders on the perceived stress effects related to the COVID-19 pandemic on students with previous trauma.

Participation

Participation in this study is voluntary and anonymous. All students will be asked to take the online survey. If you do not wish your student(s) to participate in this study, please inform Kari Russell at [redacted] before Friday, September 16th, 2022. If you allow your student(s) to participate in the study, the student can decide not to participate and the student is free not to answer any question or to withdraw from participation at any time without penalty.

After September 20th, 2022, your student(s) will be sent a link to their email with the online survey through their Google Classroom account.

Kari Russell a doctoral candidate in the Community Care & Counseling program at Liberty University, is conducting this study.

Please contact Kari Russell at [redacted] for more information.

Appendix D

Parental Opt-Out Information Form

Title of the Project: Perceived Stress Effects from the COVID-19 Pandemic on High School Students with Previous Trauma in a Rural County in Southeastern United States
Principal Investigator: Kari Russell, BSW, M.A.Ed., NBCT, Doctoral Candidate, Liberty University

Invitation to be Part of a Research Study

Your student is invited to participate in a research study. Participants must be in the 9th, 10th, 11th, or 12th grade in the [redacted]. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to allow your student to take part in this research project.

What is the study about and why are we doing it?

The purpose of the study is to better understand the perceived stress effects of the COVID-19 pandemic on students with previous trauma. This data will allow educators to make informed decisions about programs, materials needed, and services performed within the school system. Understanding stress effects will allow educators to serve students in various capacities to improve educational gaps resulting from the pandemic.

What will participants be asked to do in this study?

If you agree to allow your student or if you agree (if you are 18 years of age or older) to participate in this study, I will ask him/her/you to do the following:

1. Complete a short (approximately 10 minute) survey through Google Form. Survey responses will be anonymous.

How could participants or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include a better understanding of the perceived stress effects from the COVID-19 pandemic on high school students, especially those with previous trauma. Other benefits to the study include insights for educators in determining interventions, programs, and accommodations related to the effects of the pandemic on students.

What risks might participants experience from being in this study?

Although foreseeable risks to participating in this study are minimal, which means they are equal to the risks you or your student would encounter in everyday life, the researcher wants parents and students to notify the researcher with any concerns that arise. Students will be asked about previous trauma. Again, answers are completely anonymous. Questions are available for parental review upon request before participating. After completing the survey, if you or your student feel the need to discuss issues related to the student's social, emotional, or academic wellbeing, please contact [redacted].

How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher and faculty committee at Liberty University will have access to the records. Data collected as part of this study may be shared for use in future research studies or with other researchers.

- Participant responses will be anonymous.
- Data will be stored on a password-locked computer and may be used in future presentations. After 3 years, all electronic records will be deleted.

How will participants be compensated for being part of the study?

Participants will not be compensated for participating in this study.

What conflicts of interest exist in this study?

The researcher serves as a School Counselor at [redacted]. To limit potential or perceived conflicts, the study will be anonymous, so the researcher will not know who participated. This disclosure is made so that you can decide if this relationship will affect your willingness to allow your student to participate in this study. No action will be taken against an individual based on her or his decision to allow his or her student to participate in this study.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether or not to participate or allow your student to participate will not affect your or his/her current or future relations with Liberty University or Hayward County Schools. If you decide to participate or allow your student to participate, he/she/you is free to not answer any question or withdraw at any time prior to submitting the survey without affecting those relationships.

What should be done if a participant wishes to withdraw from the study?

If you choose to withdraw your student from the study or your student chooses to withdraw, please have the student exit the survey and close their internet browser. You or your student's responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Kari Russell. You may ask any questions you have now. Any questions in the survey are available for parental review upon request. If you have questions later, **you are encouraged** to contact Kari Russell at [redacted] or at [redacted] You may also contact the researcher's faculty sponsor, Robert Pincus at [redacted].

Whom do you contact if you have questions about rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Parental Opt-Out

If you would prefer that your child NOT PARTICIPATE in this study, please sign this document and return it to the researcher via email [redacted] by Friday, September 16th, 2022.

_____

Printed Child's/Student's Name

_____

Parent's Name

_____

Parent's Signature Date

Appendix E

Perceived Stress Effects of COVID-19 Pandemic on High School Students with Previous Trauma in a Rural County in Southeastern United States

Kari Russell ([redacted] is conducting research as part of the requirements for an Ed.D. in Community Care and Counseling at Liberty University.

The purpose of this research is to consider the stressful effects of the COVID-19 pandemic on high school students with previous adverse childhood experiences. This data will allow educators to make informed decisions about programs, materials needed, and services performed within the school system. Understanding stress effects will allow educators to serve students in various capacities to improve educational gaps resulting from the pandemic.

This survey should take less than 10 minutes to complete. Participation will be completely ANONYMOUS, and no personal or identifying information will be collected! The student can decide not to participate or to withdraw from participation at any time without penalty.

Appendix F

The Adverse Childhood Experieces Questionaire (ACE-Q) from TraumaInformedCare.chcs.org

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household often or very often… Swear at you, insult you, put you down, or humiliate you? or Act in a way that made you afraid that you might be physically hurt?
   - Yes
   - No
2. Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?
   - Yes
   - No
3. Did an adult or person at least 5 years older than you ever… Touch or fondle you or have you touch their body in a sexual way? or Attempt or actually have oral, anal, or vaginal intercourse with you?
   - Yes
   - No
4. Did you often or very often feel that … No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?
   - Yes
   - No
5. Did you often or very often feel that … You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
   - Yes
   - No
6. Were your parents ever separated or divorced?
   - Yes
   - No
7. Was your mother or stepmother: Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit at least a few minutes or threatened with a gun or knife?
   - Yes
   - No
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
   - Yes

- No

9. Was a household member depressed or mentally ill, or did a household member attempt suicide?
    - Yes
    - No
10. Did a household member go to prison?
    - Yes
    - No

Adapted from: http://www.acestudy.org/files/ACE_Score_Calculator.pdf, 092406RA4CR

Appendix G

The Pandemic-Related Stress Scale of COVID-19 (PSS-10-C)

During the last 7 days…	**Never**	**Hardly Ever**	**Occasionally**	**Almost Always**	**Always**
I have felt as if something serious was going to happen unexpectedly with the epidemic.	0	1	2	3	4
I have felt that I am unable to control the important things in my life because of the epidemic.	0	1	2	3	4
I have felt nervous or stressed about the epidemic.	0	1	2	3	4
I have been confident about my ability to handle my personal problems related to the epidemic.	4	3	2	1	0
I have felt optimistic that things are going well with the epidemic.	4	3	2	1	0
I have felt unable to cope with the things I have to do to monitor for a possible infection.	0	1	2	3	4
I have felt that I can control the difficulties that could appear in my life as a result of the infection.	4	3	2	1	0
I have felt that I have everything under control in relation to the epidemic.	4	3	2	1	0
I have been upset that things related to the epidemic are out of my control.	0	1	2	3	4
I have felt that the difficulties are increasing in these days of the epidemic and I feel unable to overcome them.	0	1	2	3	4

Appendix G obtained from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7680058/

Appendix H

Demographic Questions

Grade Level
Grade 9
Grade 10
Grade 11
Grade 12

Gender
Male
Female

Race/Ethnicity
American Indian or Alaska Native
Asian
Black or African American
Native Hawaiian/Other Pacific Islander
White
Hispanic / Latino
Two or More Race Categories

Who do you live with?
Biological Parent(s)
Legal Guardian / Adoptive Parent
Grandparent(s)
Family Member
Friend
Foster Placement
Other

How many generations live in your household (including you)?
2 Generations
3 Generations
4 Generations

Do you qualify for Free & Reduced Lunch?
Yes
No

Did you receive any previous mental health services or counseling experience before COVID-19 pandemic began?
Yes
No