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## Influencing Well-being: A Study of Childhood Risk Factors as Predictive Indicators for Future Mental Health Difficulties

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**Influencing Well-being: A Study of Childhood Risk Factors as Predictive Indicators for  
Future Mental Health Difficulties**

by

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A Dissertation Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
DOCTOR OF EDUCATION

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## Abstract

Previous literature demonstrates common childhood characteristics of adults with mental health problems and children with internalizing and externalizing behavior challenges (Fatori et al., 2013; Jaffee et al., 2002; Koegel et al., 1995; Morrissey et al., 2014). Still, little research exists having associated school-based internalizing and externalizing behavior screening scores with the risk factors described in the literature (i.e., low socioeconomic status, office discipline referrals, homelessness, low academic achievement, low attendance rates, and ethnicity- and gender-based issues). This quantitative correlational study aimed to estimate the predictive value the childhood risk factors had on the results of the Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE) of elementary-aged students through a regression analysis of secondary data. The secondary data were taken from an urban school district in the Midwest. Guided by the life course theory and the age-graded theory of social control, this study explored the predictive value of several indicators. The findings show that the psychosocial risk factors pulled from the research hold predictive value when combined into a composite score with 45-60% accuracy and with 50-65% accuracy when the risk factors are considered individually. The results hold potential for identifying students who are at-risk for mental health difficulties before severe problems exist, allowing for the provision of early, targeted school- and community-based intervention in the areas of social, emotional, and behavioral wellness for students to reduce the likelihood of future mental health problems. The results, implications for schools, and recommendations for future research are discussed.

*Keywords:* mental health, mental illness, predictive indicators, risk factors, social-emotional screening, school-based, internalizing behaviors, externalizing behaviors, SRSS-IE

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## **Dedication**

This dissertation is dedicated to my loving and patient husband, C.J., who is always the voice of reason and big dreams. Thank you for challenging me to dream beyond the constraints I put on myself and for continually helping me gain a sense of the journey and my contribution to it. For my children, Baleigh and Noah, you never doubted nor second-guessed this decision, but filled me with confidence to stay the course and believe in myself. You are my world. Mom and Dad, your love and support, which often came in form of home-cooked meals and proofreading, helped me accomplish this achievement. Thank you for seeing this process through a glass-half-full perspective, and for keeping my wine glass as such. The five of you made my dream a reality, and this is as much your accomplishment as it is mine.

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## Chapter 1: Introduction

When schools are not equipped to accurately identify young learners at risk for mental health problems, up to seven years can pass between the initial manifestation of the childhood problem and until clinical intervention is sought (von der Embse et al., 2018). While academic achievement has been the longtime goal of K-12 educational systems, emerging findings consistently demonstrate that a child's mental health status has a direct impact on their academic performance (Essex et al., 2009; Lane et al., 2012; McLeod et al., 2012; Murphy et al., 2014; Suldo et al., 2013). "Mental health is a state of well-being in which an individual realizes his or her abilities, can cope with the normal stresses of life, can work productively, and can make a contribution to his or her community" (World Health Organization [WHO], 2018, p. 1). Mirroring this definition, "child mental and behavioral health includes mental, social, and emotional health of all infants, children, and adolescents" (American Psychological Association [APA], 2019, p. 4) and "underlies healthy development and health equity across the lifespan" (APA, 2019, p. 1). Mentally healthy children are more likely to reach developmental and emotional milestones when compared to their same-age peers, learning the social skills necessary to appropriately cope with life's challenges and understand the emotions of others (Centers for Disease Control and Prevention [CDC], 2020c).

In 2005, the WHO indicated that half of the world's reported mental illnesses were diagnosed by the age of 14 or approximately when children were finishing middle school and were amid adolescence, a time of significant physical and psychological change. Keeping in mind that up to seven years can pass before a formal diagnosis is received (von der Embse et al., 2018), many middle school students diagnosed with mental health problems likely started experiencing mental health challenges in elementary school. Tied to this, children who are raised

in higher poverty homes with more family dysfunction and ineffective parenting are more prone to experience future mental health difficulties (Buckner et al., 1999; Stinson et al., 2016).

Children who experience mental health conditions and grow up to become parents are predisposed to perpetuating the circumstances in which they were raised (Doll & Lyon, 1998).

“Preventing and intervening early for young people with mental health problems can dramatically improve immediate and long term outcomes” (Paterson et al., 2001, p. 4). Paterson et al. (2001) also stated early intervention means interceding at the earliest possible point of a mental health condition, such as at the onset of warning signs or when early symptoms begin to manifest. Early intervention is a vital influence on long-range mental health outcomes (Singh & Junnarkar, 2015). Additionally, early intervention and prevention are less costly than providing treatment for manifested mental health conditions (Levitt et al., 2007). The United States Department of Education's (2011) mission is to promote academic achievement and prepare students for global competitiveness by fostering educational excellence and ensuring equal access. Within this mission, educational settings must focus on a child's overall mental well-being through self-regulation, social-emotional development, and executive functioning skills. Without stable mental wellness, it is difficult, if not impossible, for students to attend to academic content.

Studies have demonstrated that adults experiencing mental health problems often share childhood characteristics, including being raised in homes of poverty, frequently moving, experiencing homelessness, misbehaving aggressively, having negative encounters with law enforcement, or being socially withdrawn (Boynton-Jarrett et al., 2013; Buckner et al., 1999; Gao et al., 2015; Jokela et al., 2009; Stansfeld et al., 2016). Added to these, adults with mental health impairments often missed many days of school and demonstrated poor academic

achievement. Knowing the impact of these childhood risk factors on adults, school staff should use them as indicators of potential at-risk mental health status.

Public schools across the country participate in the universal screening of students for behavior and mental health risks more regularly than previously done (Essex et al., 2009). This effort responds to a national initiative toward early identification and intervention to support academic and behavioral well-being (Greenwood et al., 2017). An adult informant often completes schoolwide screening instruments for behavior and mental health in the early grades (e.g., parent or teacher) based on observable behaviors (Levitt et al., 2007). These instruments are used two or three times each school year and capture a child's academic and behavioral strengths and challenges at a given point in time.

Because mental health needs can fluctuate based on various circumstances, it is essential to periodically monitor children's mental health throughout the school year and across the elementary career (Essex et al., 2009). Through a retrospective correlational study of common childhood risk indicators of future mental health problems, this study explored the predictive value of these indicators differentiated by age, gender, and ethnicity with data from a standardized behavioral screening tool. Predictive indicators enable schools to be better equipped to monitor and identify students at the earliest opportunity for intervention support.

### **Brief Literature Review**

The identification and treatment of mental illnesses have lagged behind the socially accepted term of overall well-being. For decades, people diagnosed with mental illness were treated in state-run institutions that used long periods of isolation and restraint as the primary method to manage undesired behaviors (University of Pennsylvania [Penn], 2011). In the mid-1900s, the United States saw intentional reform aimed at reducing the mistreatment of



institutionalized patients, and efforts were made to provide health care that incorporated physical health and mental health (U.S. Department of Health and Human Services [DHHS], 1999). As a result of these efforts, the understanding encompassing mental illness has improved. It now includes conditions such as depression and anxiety, whereas it once only included severe forms of psychosis (Morrissey, 2013; DHHS, 1999). However, misunderstandings, perceptions, and the health care system surrounding the care of people who are mentally ill perpetuate the stigma associated with it (Corrigan & Penn, 2015; Lyons & Ziviani, 1995; Saleh, 2020). “The stigma of mental illness is such, it seems, that other members of society wish to distance themselves socially from persons so identified” (Lyons & Ziviani, 1995, p. 1002).

Mentally healthy people can function well in social settings and adapt to conditions in the presence of stressors (Pearlin, 2009). Mental health is “a state of mind characterized by emotional well-being, good behavioral adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life” (American Psychological Association [APA], 2020, p. 1). In 1999, Surgeon General David Satcher described mental health as a “state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity” (DHHS, 1999, p. 4). The World Health Organization has described mental health as a “state of well-being in which an individual realizes their own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to *their* community” (WHO, 2018, p. 1).

Adults who are mentally well demonstrate superior functioning in all aspects of their lives, including better work attendance, better physical health, and higher resiliency, intimacy, and life goals (Keyes, 2007). Keyes further described that mentally healthy people demonstrate

positive emotional, psychological, and social well-being. Emotional well-being encompasses positive emotions, psychological well-being references positive psychological functions, and social well-being is represented by positive social functioning (APA, 2020).

Abundant research is available on mental illness and the long-term risks associated with the chronicity and the severity of the illness (Ballard et al., 2013; Boynton-Jarrett et al., 2013; Flannery et al., 2004; Levitt et al., 2007; Singh & Junnarkar, 2015). *Mental illness* is a collective term encompassing all diagnosable mental disorders, that is, “health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning” (DHHS, 1999, p. 5). Chronicity refers to the length of time a condition persists (e.g., depression, anxiety), whereas severity generally refers to the level of impairment of the condition (e.g., schizophrenia, personality disorders) (Zimmerman et al., 2018). When referring to mental illness, severity has “no specific biomarkers that can validly characterize the disorder” (Zimmerman et al., 2018, p. 259). Instead, the severity of twenty-seven conditions, as noted in the Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> Edition (DSM-5), are determined through a variety of rating systems, frequency of behaviors in a given period, number of symptoms, or degree of distress or impact (American Psychiatric Association [APA], 2013). As a result, clinicians are left to decide mental illness severity based on subjective responses and observations (Zimmerman et al., 2018).

With proper mental health treatment that meets the level of chronicity and severity, patients can lead full and productive lives. However, a mental illness can make it challenging to acquire and keep friendships, obtain and retain employment, and interact with friends, neighbors, and loved ones (Rasmussen et al., 2019). “A report funded by the Bureau of Justice Statistics found that 64% of jail inmates had some mental health problems. More than 25% of jail inmates

who reported having a mental health problem had three or more prior incarcerations” (Spjeldnes et al., 2012, p. 131). Statistics like these lead to the fear of criminality and social exclusion for people with mental illness, further exacerbating its stigma.

Spanning across ethnicities and races, depression is the most common mental illness diagnosed among adults, and trauma is the most diagnosed mental health condition for youth (Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality [SAMHSA/CBHSQ], 2020). While heredity may play a part in the development of depression, trauma is a result of a specific event or series of events that challenges an individual’s view of the world as a safe and predictable place, and it has a long-lasting negative effect on a person’s attitudes, behavior, and functioning (APA, 2020). Improving a nation’s mental health requires those diagnosed with mental illnesses to receive clinical treatment while also seeking to prevent mental illness from developing.

### ***Childhood Mental Health***

The traditional mental health service model “focuses almost exclusively on the treatment of students who already have well-formed, entrenched mental health problems” (Levitt et al., 2007, p. 165). While this model is imperative for people who have diagnosed conditions, an effort of prevention is necessary for identifying students who may be at-risk for mental health conditions based on risk factors that are commonly associated with behavioral and mental health conditions. A drawback of the current framework emphasizes a student’s manifested behavior and performance when research suggests that monitoring childhood risk factors could lead to intervention before there is a decline in either one (Achenbach, 2017; Jokela et al., 2009; Morrissey et al., 2014). Prevention is “more efficient and cost-effective than providing treatment for problems that have already developed” (Levitt et al., 2007, p. 166).

Children who demonstrate overt behaviors such as aggression, impulsivity, lying, stealing, and irritability are more likely to demonstrate antisocial behavior and substance abuse later in life (Jokela et al., 2009). Jokela et al. (2009) also showed that children who are withdrawn, nervous, and fearful have a greater risk of developing depression and anxiety disorders. “Adverse early life experiences have been strongly associated with a range of later difficulties in social interaction...including social anxiety, withdrawal, aggression...and psychiatric disorders” (Brydges et al., 2019, p. 2). Childhood internalizing (e.g., withdrawn, lonely, anxious) and externalizing (e.g., aggressive, negative attitude, peer rejection) behaviors demonstrate an increased risk for mental illness in adulthood, which can lead to earlier mortality.

Multiple studies demonstrate that childhood problematic behaviors are more likely to lead to adverse outcomes in adulthood (Jokela et al., 2009; Sellers et al., 2019; Stansfeld et al., 2016; von Stumm et al., 2011). Children who display behaviors that contradict the social norm, such as lack of empathy, aggression, or disregard for authority, are likely to persist in this behavior pattern. The persistent behaviors can lead to childhood delinquency and impact adult outcomes that may include excessive drinking, marital abuse, and harsh discipline of children, which may lead to adult crime (Sampson & Laub, 1993). Therefore, a focus on children’s mental health is the pinnacle for future mental wellness.

The *School to Prison Pipeline*, “a systemic process that pushes out marginalized youth from school and into the juvenile justice system through discriminating policies” (Nocella et al., 2018, p. 7), challenges schools to evaluate and modify policies to reduce the number of youth criminalized for minor behavior infractions. While these policies (i.e., zero tolerance, high-stakes testing) can impact all students, children of color and those who are socially marginalized because of sexuality, poverty, and ability are disproportionately impacted (Nocella et al., 2018).

Recognizing that schools have an opportunity to disrupt the *School to Prison Pipeline* by providing early intervening services to students experiencing mental and behavioral health conditions and symptoms posits prevention of future adult criminal activity.

Specific studies concerning childhood mental health and its interconnectedness to academic outcomes have been conducted (Essex et al., 2009; Guzman et al., 2011; McLeod et al., 2012; Murphy et al., 2014). Consistently, research reveals a decline in academic performance when a child's mental health is unstable. By identifying students who demonstrate behaviors that serve as indicators for future mental health difficulties, the opportunity exists for early mental health intervention by "removing the barriers to learning, including negative student behaviors and attitudes" (Suldo et al., 2013, p. 85). While many factors outside the control and measurement of the school system may contribute to a decline in childhood mental health, Suldo et al. (2013) articulated an urgency for schools to identify students who may benefit from early services. Additionally, the researchers expected that schools first hold mental health as a priority for overall student success, followed then by academic achievement.

### ***Mental Health Screening in Schools***

Historically, for students to have received support or intervention with their emotional health, they would have been required to be seen in a clinical setting. Commonly, such clinical visits would not occur until the health concern was well-established and impeded the student's academic or social development. In the past, when a teacher was concerned about a child's academic or behavioral progress, they would make a referral to the school's building-level support team when enough data had been gathered to demonstrate the need for a comprehensive evaluation of the student's behavioral and academic condition (von der Embse et al., 2018). At this point, the special education process would be initiated. The student evaluations assist the

school-based team in determining if a disability exists. By law, according to the Individuals with Disabilities Education Act (IDEA), students identified as having a disability have the right to a Free Appropriate Public Education (FAPE), including special education and related services (IDEA, 2004). Additionally, the reauthorization of IDEA in 2004 allowed schools to set aside 15% of the allocated funding to screen all students who may be at risk for meeting academic and behavioral milestones. Thus, securing assessment and intervening services to students in the general education setting through the Response to Intervention (RTI), now called the Multi-Tier System of Supports (MTSS), framework.

Diagnostic assessments assist clinicians in identifying or diagnosing specific mental health conditions correctly, whereas screening assessments detect signs that may be early indicators of any mental health condition (APA, 2020). There are a variety of screening instruments available for the detection of mental health conditions. Screening tools are brief, reliable, and valid assessments used to determine which students may be at-risk for not meeting typical targets or need further diagnostic evaluation. The instruments may be completed by a parent, teacher, or self-reported by the student beginning in middle school, and they vary by age range. They may be completed for an entire classroom of students (i.e., universal screening) or a subset of students with an elevated risk (i.e., selected screening) (Levitt et al., 2007). The instruments focus on a range of psychosocial concerns, high-risk symptoms, or a specific set of mental health conditions, all of which require observed behaviors before completion. Prevention efforts encourage universal screening of all students in the school setting with “second and sometimes third stage assessments to rule out false positives” (Levitt et al., p. 166). A false positive refers to an individual incorrectly included in a group by the test used to determine

inclusion (APA, 2020). Screening three times each year aids in ruling out false negatives, which are those incorrectly excluded from the group.

The school-based teams may identify students as having an emotional disturbance (ED) disability when they exhibit long periods of inability to build or maintain satisfactory relationships, inappropriate behaviors or feelings under normal circumstances, general pervasive mood of unhappiness or depression, or tendencies to develop physical symptoms or fears associated with personal or school problem (IDEA, 2004). The behaviors students with ED display are categorized in the dimensions of internalizing (covert) and externalizing (overt) behaviors. The literature identifies the importance of screening for internalizing and externalizing behaviors in young pupils as a means of detecting children who may be at risk for future mental health illness since these behaviors are very often symptoms of mental health conditions (Essex et al., 2009; Schatschneider et al., 2014).

Also cited in the literature are factors that often impact school-aged children who demonstrate internalizing and externalizing behavioral difficulties. These include low socioeconomic status, office discipline referrals, low academic achievement, homelessness, high student mobility, low attendance rates, age, minority status, and gender (Doll & Lyon, 1998; Essex et al. 2009; Göbel et al., 2016; Wyman et al., 2010). Screening tools for mental health focus on existing student manifested behaviors that are part of the mental health symptomatology (e.g., aggressive behavior) rather than childhood risk factors that are often associated with mental illness (e.g., absenteeism). Correlating the student manifested behavior patterns with identified risk factors may provide an opportunity for earlier detection of students who may be at risk for future mental health conditions. Early detection and intervening services promote prevention.

The structural frame of leadership articulates that "organizations [schools] exist to achieve established goals [standards] and objectives [learning targets] and devise strategies to reach those goals" (Bolman & Deal, 2017, p. 48). Learning outcomes will continue to be the pinnacle of PK-12 education. Yet, a blending of the human resources frame will be necessary to find and retain staff members who believe that "organizations [schools] exist to serve human needs" (Bolman & Deal, 2017, p. 118). According to Marion and Gonzales (2014), a leader who can motivate staff through social dynamics to achieve change will recognize and support all staff members to understand student mental health and warning signs. As a result, educators leave a legacy on the trajectory of a student's life.

### **Theoretical Framework**

This study was built on the work of the life course theory (Elder, 1998) and the age-graded theory of social control (Sampson & Laub, 1993). Life course theory, constructed on Urie Bronfenbrenner's ecological systems theory and Ludwig von Bertalanffy's general systems theory, emphasizes "the notion that changing lives alter development trajectories" (Elder, 1998, p. 1). Specifically, the life course theory emphasizes "the timing of exposures and experiences during critical periods of development that can influence life trajectories" (Lu et al., 2018, p. 4). The age-graded theory of social control underscores childhood experiences as influencing adolescent and adulthood experiences (Sampson & Laub, 1993).

The strongest evidence that life course theory and age-graded theory of social control further mental health understanding came from childhood trauma studies and adverse mental health outcomes. Multiple studies demonstrated that as the number of adverse childhood experiences increases, the more likely adult mental health problems will exist (McLeod & Fettes, 2007; Needham, 2009; Schilling et al., 2007). While serious childhood behavior problems do not



inevitably lead to mental illness in adulthood, it is imperative to err on the side of intervention provision when these behavior problems are observed and when childhood risk factors for mental illness are present. With early intervention, students are better equipped to gain mastery of social-emotional skills, develop coping strategies, and cultivate and maintain social and personal relationships. When these areas are developed, adolescents and adults can better navigate stressors and break the cycle of multigenerational mental health struggles.

### **Statement of the Problem**

Educational systems aim for children to be successful in life beyond K-12 schooling. Life success is defined as “motivation and ability to achieve; to establish positive relationships with peers and adults; to adapt to the complex demands of growth and development; to contribute to peer groups, family, school, and community; and to make responsible decisions that enhance their health and avoids risky behaviors” (Payton et al., 2000, p. 179). When students are outfitted with these skills early in life, they are less likely to experience mental health illnesses, and they are better able to seek personal and clinical support if a mental health issue arises.

Children who demonstrate social and emotional difficulties are at greater risk for reduced educational outcomes and negative life trajectories (Ballard et al., 2013). Guzman et al. (2011) demonstrated that children who were identified in first grade as having mental health difficulties performed significantly poorer on third-grade standardized assessments. In another study, childhood mental health struggles related to depression and anxiety were strongly linked to lower self-esteem during the teenage years, especially in adolescent girls (Bolognini et al., 1996). LaBrie et al. (2009) found that youth experiencing untreated mental health challenges were more likely to binge drink during their freshman year in college. These studies and others demonstrate

that “mental health problems stand on their own as an independent risk factor” (Guzman et al., 2011, p. 408) for more unsatisfactory academic performance.

Because students spend most of their awake hours in school, this becomes the optimal setting for screening students for potential mental health problems. Anxiousness, depressive tendencies, social withdrawal, somatic complaints (internalizing behaviors) and aggression, opposition, and delinquent behaviors (externalizing behaviors), can interfere with a child’s ability to adjust socially, have empathy for others (Göbel et al., 2016), and perform well academically (Greenwood et al., 2011). Generally, when students appear to be socially adjusted and academically performing as expected, schools are in *modus operandi*. However, the literature seems to suggest that childhood risk factors could indicate potential risk before a decline in behavior or academic performance is apparent (Fatori et al., 2013; Jaffee et al., 2002; Reinherz et al., 2000).

Childhood mental health studies come alongside the literature that promotes screening for mental health conditions. Over the years, these studies have identified common risk factors from their childhood ex post facto among adults with mental illnesses. These risk factors include low socioeconomic status, office discipline referrals, low academic achievement, homelessness, high student mobility, low attendance rates, age, ethnicity, and gender (Doll & Lyon, 1998; Essex et al., 2009; Göbel et al., 2016; Wyman et al., 2010). The researchers discovered that adults with mental illnesses regularly demonstrated poor academic achievement, high rates of housing mobility or homelessness, and poor school attendance. Furthermore, they found that gender and ethnicity played a role in specific mental health diagnoses.

While research articulated these risk factors, little research aligned the results of school-based screening for internalizing and externalizing behaviors with the risk factors. Existing

school data typically capture these potential risk factors associated with diminished mental health as part of embedded school procedures. Therefore, the exploration of the alignment of the Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE) subscores and risk factors provided the potential to develop a predictive value that allows for earlier identification of students who may be at risk for mental health problems. As a result of this study, prevention of mental health problems and early, targeted intervention can be made available.

### **Purpose of the Study**

Research indicates that children who have mental health problems in their early years have more significant potential to suffer diminished educational outcomes with a devastating impact on their lifelong trajectory (Guzman et al., 2011; McLeod et al., 2012; Suldo et al., 2013). Children whose elementary school social and emotional development is delayed are more likely to exhibit internalizing and externalizing behaviors (Ballard et al., 2013; Essex et al., 2009; Göbel et al., 2016). For many years, students were required to attend a clinical setting to receive medical and therapeutic services to enhance social, emotional, and behavioral skills. These connections to providers often occurred after the symptoms and resulting behaviors of the child had escalated to an alarming level. More recently, efforts toward prevention and early intervention of behavioral and mental health have found their way into educational settings.

As reported in one study, “there is growing empirical support that school-based mental health programming can positively influence a diverse array of social, health, and academic functioning” (Ballard et al., 2013, p. 145). When schools are not equipped to accurately identify young learners who are at risk for mental health problems, up to seven years can pass between the initial manifestation of the problem until clinical intervention is sought (von der Embse et al., 2018). It is critical and urgent that school resources, including funding, personnel, and time, be

utilized for the prevention and early detection of students who may be at risk for developing future difficulties.

Guided by the life course theoretical framework and the age-graded theory of social control, this positivistic, correlation-designed study aimed to discover the degree to which childhood risk factors, independently or in combination, predicted the SRSS-IE results among elementary-aged children.

### **Hypothesis**

**Null Hypothesis Statement:** There is no correlation between the composite score of the SRSS-IE and the student risk factors composite score.

**Alternative Hypothesis Statement:** There is a correlation between the composite scores of the SRSS-IE and the student risk factors composite score.

### **Research Questions**

Childhood mental health problems “are often the origin of impairing adolescent and adult psychiatric disorders” (Essex et al., 2009, p. 562). Therefore, screening provides an opportunity to identify students who might be at risk for mental illness later in life, allowing for the timely provision of early intervention. The primary question in this study aimed to determine whether there was predictive value in the childhood risk factors on the results of the SRSS-IE. If a predictive value was confirmed, the goal of the secondary research questions was to determine the correlation between the internalizing and externalizing subscale composite scores and the predictive factors. “Mental health problems stand on their own as an independent risk factor” (Guzman et al., 2011, p. 408), making it critical to monitor these patterns over educational history for early identification and intervention.

***Primary Research Question***

To what degree does the risk factors composite score predict the composite score of the SRSS-IE by ethnicity and gender?

***Secondary Research Questions***

1. What is the correlation between the SRSS-IE internalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?
2. What is the correlation between the SRSS-IE externalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?

**Definition of Variables**

The following are the variables used in the study:

***Outcome Variables (OV):***

- a. Composite score of the SRSS-IE:
  - i. Constitutive Definition: the sum of the individual scores of a free, brief, systematic screening tool developed to detect students with externalizing and internalizing behavior difficulties (Lane et al., 2015).
  - ii. Operational Definition: See Appendix A, column R.
- b. Internalizing behavior:
  - i. Constitutive Definition: covert behaviors often associated with anxiety, depression, somatic complaints (e.g., stomachache, headache), and social withdrawal (Lane, Menzies, Oakes, & Kalberg, 2012).
  - ii. Operational Definition: See Appendix A, columns K-O and P.

- c. Externalizing behavior:
  - i. Constitutive Definition: overt behaviors often associated with “serious acting-out behaviors such as verbal and physical aggression, coercive tactics, and delinquent acts” (Lane, Menzies, Oakes, & Kalberg, 2012, p. 2).
  - ii. Operational Definition: See Appendix A, columns D-J and Q.

*Predictive Variables (PV):*

- a. Academic performance:
  - i. Constitutive Definition: proficiency performance on curriculum-based and norm-referenced assessments (Suldo et al., 2013).
  - ii. Operational Definition: the spring Overall Proficiency Index (OPI), as recorded in the school district’s database. See Appendix B.
- b. Socioeconomic status:
  - i. Constitutive Definition: a measure of a family’s combined education, income, and occupation status (Chen et al., 2018).
  - ii. Operational Definition: the reported lunch status of paid, reduced, or free for a student in the school district’s database.
- c. Office discipline referral:
  - i. Constitutive Definition: “an event in which (a) student engaged in a behavior that violated a rule/social norm in the school, (b) a problem behavior was observed by a member of the school staff, and (c) the event results in a consequence delivered by administrative staff who

produced a permanent (written) product defining the whole event”  
(Sugai et al., 2000, p. 96).

- ii. Operational Definition: a yearly count of major behavior violations reported by school staff and recorded in the school district’s database according to Administrative Policy 6310: Student Behavior, Discipline, and Reporting (see Appendix C).

d. Homelessness:

- i. Constitutive Definition: defined by the McKinney-Vento Homeless Assistance Act of 2001 as “individuals who lack a fixed, regular, and adequate nighttime residence,” which includes sharing a home, living in a hotel, campground, shelter, car, park, abandoned building, bus/train station, or are “abandoned in hospitals.”
- ii. Operational Definition: families who have applied for assistance through the McKinney-Vento Homeless Assistance Act of 2001 and are recorded in the school district’s database.

e. Absenteeism:

- i. Constitutive Definition: students who cannot, will not, or do not attend school (Balfanz & Byrnes, 2012).
- ii. Operational Definition: the percentage of days a student does not attend school in a given school year as recorded in the school district’s database.

### **Significance of the Study**

Society has witnessed the shift in the struggles young learners can exhibit due to mental health problems. The cycle of despair that emotional complications can create for oneself, family, and the community when generational patterns reoccur is not a desirable long-term trajectory. Professionals from the educational and clinical fields have observed students overcome these struggles when they and their parent(s) obtain necessary community support services. “Early identification programs for mental health problems in schools may help to bridge the gap between mental health providers and the unmet needs of children who are at risk for mental health problems within the community” (Nemeroff et al., 2008, p. 338). Early mental health intervention has the potential to change the course of a child’s life outcomes positively. Identifying children who may be in jeopardy of mental illness is crucial to provide specific intervention at the earliest opportunity.

Current literature shows evidence of consistently identified childhood risk factors of adults with mental health problems, but no studies were found to demonstrate a correlation between them and the results of internalizing and externalizing behavior screening scores (Brydges et al., 2019; Fatori et al., 2013; Jaffee et al., 2002; Reinherz et al., 2000). This study laid the groundwork for developing predictive criteria for future mental health concerns for a local school district. The use of predictive measures does not require adult informants, as is the case for screening instruments, and the predictive criteria present an opening for ongoing monitoring throughout the school year and over the students’ school years. Moreover, risk indicators provide the opportunity to align intervention and community connection which has been found repeatedly to benefit students’ current and future overall health and academic



achievement (Ballard et al., 2013; Fatori et al., 2013; Guzman et al., 2011; Vella et al., 2018; Wyman et al., 2010).

This research study contributed to the ongoing need for scholarly work in school-based mental health intervention and improved outcomes for children. Across the nation, studies have demonstrated that children who are homeless, raised in high-poverty homes, or are highly transient are more likely to experience mental health problems as they grow (Boynton-Jarrett et al., 2013; Buckner et al., 1999). Similarly, students who demonstrate poor academic achievement, miss school frequently, and have high numbers of office discipline referrals may be at-risk for future mental health difficulties (Gase et al., 2014; Greenwood et al., 2017; Guzman et al., 2011). Therefore, the potential exists for expanding on these studies to examine further the role internalizing behaviors, externalizing behaviors, gender, ethnicity, and age play in other geographical areas.

## **Research Ethics**

### ***Permission and IRB Approval***

This study was approved by the Institutional Review Board (IRB) of Minnesota State University Moorhead (MSUM). See Appendix D for the MSUM IRB approval form. This approval was completed before starting the collection of data and successfully met the requirements to ensure the ethical conduct of research involving human subjects was met (Mills & Gay, 2019). Likewise, authorization to conduct this study was granted from the school district where the research project took place (see Appendix E). Appropriate administrators at the school district's central office were aware of the research and gave access to the district's information databases.

### ***Informed Consent***

The protection of human subjects participating in research was assured. Parents of participants were aware that this study was conducted as part of the researcher's Doctoral Degree Program and benefited her leadership practice. Confidentiality was protected using student identification numbers (e.g., 000001) without the utilization of any identifying information.

### ***Limitations***

Completing a correlational study posed some limitations for consideration. While seeking a relationship between each mental health characteristic and SRSS-IE results, it was essential to control other risk factors to best identify correlations and predictive tendencies. Additionally, the conditions in which the teacher completed the SRSS-IE may have impacted the results.

Conditions may have included the stress level and the number of supports available at each participating school. Finally, data collector bias may have limited the results of the study. This study required the classroom teacher to complete the SRSS-IE as the school professional who knew the student best. As a result, the teacher's opinion or previous score of a student may have influenced the results utilized for this study.

### **Conclusion**

Educational settings continue to evolve and respond to students' needs. The school is obligated to continuously evaluate the protocols and service delivery models used to meet those needs. As the number of students experiencing mental health difficulties increases, the school's effort to prevent and identify students at risk for further difficulty is necessary. By correlating the results from the formal screening of internalizing and externalizing behaviors with school collected data specific to risk factors commonly associated with mental health problems, the predictive criteria were developed for ongoing identification and monitoring for this school

district. Through early and continuous identification and monitoring, short- and long-term intervention opportunities can improve students' academic achievement and lifelong trajectory.

The following chapter focuses on scholarship in the field related to mental health, data collection, risk criteria, and the impact school-based mental health intervention has on long-term outcomes.

## Chapter 2: Literature Review

In the seventeenth century, the philosopher and scientific thinker René Descartes made a clear distinction between the mind and body, known as mind-body dualism. Mind-body dualism was a belief that the mind and body are entirely separable from one another (Mehta, 2011). Mind-body dualism was primarily responsible for the separation between “mental” (within the mind) and “physical” (within the body) health, which negatively impacted the study of “the dynamic nature of human beings, their relationship with the environment and their real health concerns” (Mehta, 2011, p. 207). Culliton (2014) stated that it is inaccurate and unhelpful to divide health issues into physical or mental groups, which are viewed as ‘real’ or ‘all in the head’ problems, respectively. Americans more readily accept that the mind and body are interconnected so that a change in the brain may trigger physical changes in the body (DHHS, 1999) indicating the necessity to continue their collaborative study.

The American Psychological Association (2020) defined mental health as a state of mind characterized by emotional well-being, reasonable behavioral adjustment, and a capacity to build relationships and cope with life's typical stresses and demands. Keyes (2007) demonstrated that when people are mentally and physically healthy, they have better work attendance, resiliency, intimacy, and achievement of life goals. When mental health needs are not addressed, people “suffer a greater loss to their overall health and productivity” (DHHS, 1999, p. 3). Mental health disorders, also commonly called mental illnesses, psychological disorders, psychiatric disorders, or psychiatric illnesses, are conditions characterized by cognitive and emotional disturbances, abnormal behaviors, and/or impaired functioning, which may involve psychological, genetic, chemical, social, and other factors (American Psychological Association [APA], 2020). The Diagnostic and Statistical Manual of Mental Disorders, currently in its fifth edition (DSM-5),

contains descriptions, symptoms, and other criteria for health care professionals to use as the authoritative guide to the diagnosis of mental disorders (American Psychiatric Association [APA], 2021).

At least half of the diagnoses of mental illnesses worldwide have an onset while in middle school or earlier. The most common mental health conditions at this age are anxiety, depression, Attention Deficit Hyperactivity Disorder (ADHD), and behavior problems, and it is not uncommon for some conditions to occur together (Centers for Disease Control and Prevention [CDC], 2020a). The CDC further states that children living in homes below the poverty line are more likely to be affected by one of these conditions, with 54-78% of children and adolescents diagnosed receiving treatment for their mental health disorder.

Untreated mental health problems have adulthood consequences such as “making and maintaining friendships, intimate relationships and relationships with neighbors, finding and maintaining housing accommodations and employment, lower self-esteem and agency, and greater barriers to social reintegration” (Nee & Witt, 2013, p. 676). When left untreated, people with mental health conditions, when they become parents, often create an unhealthy environment that exacerbates the likelihood their children will experience the vicious cycle of mental health difficulties. Mattejat and Remschmidt (2008) stated that children of parents who have a mental illness are at a greater risk of developing a mental illness themselves. Genetic factors may increase the chances of a child developing a condition similar to the parent. Environmental factors, such as the parent’s behavior toward the child because of their condition, increased psychosocial stress, including poverty, unstable housing, cultural discrimination, and low level of education and employment status, can contribute to the increased probability of future mental health problems for children of mentally ill parents (Mattejat & Remschmidt, 2008).

Improvement of long-term outcomes becomes dependent on early mental health identification and intervention.

Millions of people in the United States experience mental health problems. In 2019, 20.6% of adults experienced a mental illness, and 3.8% of the adults experienced a co-occurring substance abuse disorder and mental illness (National Alliance on Mental Illness [NAMI], 2020). Even before COVID-19, the prevalence of adults with a mental illness had been increasing. Still, in the first nine months of 2020, there was a 93% increase in people seeking help with anxiety and a 62% increase in the number of people looking for support related to depression (Mental Health America [MHA], 2020). Of the adults with a mental illness, less than half of them received treatment in 2019, and, on average, eleven years passed between the onset of mental illness symptoms and treatment (NAMI, 2020).

While some mental health needs of minority groups in the United States appear to be more severe than White Americans (DHHS, 2001), much research points to the likelihood that minority populations underreport mental health needs (American Psychiatric Association [APA], 2017; Payne et al., 2017; Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality [SAMHSA/CBHSQ], 2020). The American Psychiatric Association (2017) stated that underdiagnosis of mental illness in people from racially or ethnically diverse populations can result from a lack of cultural understanding by health care providers, including language differences and cultural presentation of symptoms. Additionally, mental health difficulties are common in people who are incarcerated, a system that has a disproportionate representation of racial and ethnic minorities (American Psychiatric Association [APA], 2017).

In 2016, 16.5% of children between the ages of six and seventeen experienced a mental health disorder, and about half of them received treatment in the same year (NAMI, 2020). In the United States, 9.7% of youth have severe major depression (MHA, 2020), and 70.4% of youth in the juvenile justice system have a diagnosed mental illness (NAMI, 2020). High school students with significant symptoms of depression are twice as likely as their peers to drop out of school. In 2020, nearly everyone experienced a tremendous amount of stress related to health, loss of loved ones, and job uncertainty due to COVID-19, with people aged 11-17 struggling the most with their mental health (MHA, 2020).

### **History of Mental Health**

Diagnosis and treatment of mental illnesses had their roots in the 17<sup>th</sup> Century when René Descartes declared the mind and body of a human were separable (Mehta, 2011). The early treatment systems for medical health care and mental illness were also separated. The needs of people who were physically ill or required surgery were met in mainstream facilities and generally occurred in hospitals (University of Pennsylvania [Penn], 2011). Conversely, people experiencing mental disorders were cared for by family members until state-run hospitals became available to provide care in the 1800s (Morrissey, 2013). Those who suffered from a mental illness in the 19<sup>th</sup> Century were described as “lunatics,” and the institutionalized treatment in the then-called *asylums* was more likely to be acts done to the clients rather than done for or with them (DHHS, 1999). Staff at these asylums regularly used long intervals of isolation and severe restraint methods to manage the behaviors of individuals who were mentally ill (Penn, 2011).

In the 1950s and 1960s, the United States saw specific reform movements to advance healing and reduce the mistreatment of institutionalized patients (DHHS, 1999). While these

efforts were being made, physical health care and mental health care, along with funding and staffing of the two health care systems, remained separate (Morrissey, 2013), leading to higher costs, lower satisfaction, and low recovery for patients, including more premature death for those battling a mental illness. Communities indicated a desire to financially support funding mental health treatment until they realized the funding would result in higher taxes (Hanson, 1998). Moreover, community members' misunderstanding of mental illness and the stigma surrounding it interfered with their desire to support mental health treatment.

### **Stigma**

While understanding of mental illness has improved over time, there continue to be perceptions, misunderstandings, and systems that perpetuate its stigma. Stigma, another term for prejudice, represents “poorly justified knowledge structures that lead to discrimination” (Corrigan & Penn, 2015, p. 3). Long ago, only severe forms of psychosis were viewed as mental illnesses. At present, conditions including anxiety and depression are also recognized as mental health conditions. Still today, the public regularly associates violent and unpredictable behavior as a common characteristic of mentally ill people, which perpetuates the social stigma related to mental health (DHHS, 1999). Furthermore, DHHS indicated that social stigma could lead to people living isolated lives, being denied rent or employment, and feeling embarrassed, distrustful, angry, and hopeless. People who face mental health problems and self-stigmatize are less likely to be successful because they convince themselves that the “socially endorsed stigmas are correct and they are incapable of independent living” (Corrigan & Penn, 2015, p. 4).

Stigmatizing views about mental illness are manifested through the “public’s reluctance to pay for mental health treatment” (DHHS, 1999, p. 8), trivialized media coverage, mass media overgeneralizations (Saleh, 2020), and a lack of knowledge and understanding about mental



health (Corrigan & Penn, 2015). Additionally, “research has also shown that well-trained professionals subscribe to stereotypes about mental illness” (Corrigan & Penn, 2015, p. 3), demonstrating that stigmatizing views are not limited to only those who are uninformed. While diagnoses in the medical field are essential for the clustering of people with specific conditions to shape the treatment process, diagnostic labeling can lead to a distorted perception of patients’ needs when assumptions linked to the diagnosis are used by the clinician (Lyons & Ziviani, 1995). As a result, when a person has been labeled mentally ill, the perception of their actions may be distorted to adhere to the label. Therefore, “how medical practitioners perceive the mental illness affects their capacity to recognize, appropriately treat, and refer patients who have mental health problems” (Alaa El-Din et al., 2016, p. 6).

The stigma surrounding mental health persists as a barrier to accessing treatment (Morrissey, 2013). Efforts to reduce mental health stigma are ongoing, including further education about mental health and mental illness, encouragement for direct interaction with people who have a mental illness, and suppression of stigmatizing attitudes and behavior (Corrigan & Penn, 2015). When the public understands that mental disorders are not a result of choice or lack of willpower, the country will begin to overcome the mental health stigma. Until then, historical influences will continue to sway perceptions and behaviors that lead to prejudice and discrimination. This is seen in the United States’ cultural minority groups’ access to and utilization of mental health services. “Even more than other areas of health and medicine, the mental health field is plagued by disparities in the availability of and access to its services. These disparities are viewed readily through the lenses of racial and cultural diversity, age, and gender” (DHHS, 1999, p. vi).

**Racial and Ethnic Minorities**

The term “racial and ethnic minorities” collectively refers to those who identify as belonging to a group of people who have reduced political power and social resources such as status, rewards, and opportunities (APA, 2017). The four most recognized racial and ethnic minority groups in the United States, according to federal classifications, are African American, American Indian and Alaska Native (AIAN), Asian American and Pacific Islander (AAPI), and Hispanic American. It should be noted, that “Hispanic American (Latino) is described as an ethnicity and may apply to a person of any race” (DHHS, 2001, p. 5). According to the U.S. Census Bureau (2002b), the four major groups account for over 28% percent of the population as a single race alone or combined with one or more other races. Hispanic Americans of any race account for over 18% of the U.S. population (U.S. Census Bureau, 2020b). It is essential to recognize that although these groups allow for collecting the census and other federally related counting, single categorical representation presents limitations. For instance, each category groups together a vast array of ethnic classes, bringing with each of them unique customs, language, and beliefs (DHHS, 2001). For example, more than 570 federally recognized American Indian tribes in the United States speak about 150 different languages (Census Bureau, 2015).

Cultural diversity in America has allowed for new perspectives, innovations, and multicultural vibrancy. However, the existence of striking disparities for cultural minorities accessing mental health services is concerning. “Most minority groups are less likely than Whites to use services, and they receive poorer quality mental health care, despite having similar community rates of mental disorders” (DHHS, 2001, p. 3). Some reasons for this include histories of forced relocation, maltreatment in the health industry field, forced separation of

families, mental health stigma, and forced assimilation programs (Payne et al., 2017; Reynolds & Gonzales-Backen, 2017; Sue et al., 2012).

Of the respondents in the 2001 National Household Survey on Drug Abuse, 51.4% of White Americans received therapy in the previous year compared to 38.4% of African Americans and 27% of Hispanic Americans (Gittelman, 2003). The cultural framework (Hofstede, 2001, as cited in Sue & Sue, 2016) states that American society is built on Western American beliefs and practices that impede the life trajectory of different cultural groups. Specifically, cultural differences are more likely to be overlooked or misinterpreted when Western American standards are used when making mental health diagnoses. The term White American will be used henceforth to describe White Europeans who live in the United States, which refers to the majority group. As described within each of the minority cultures, there is much variability among White Americans (La Roche et al., 2015). The key to developing more mental health services that are responsive to cultural minorities is understanding the effects history, culture, and society have on mental health, mental illness, and mental health services (APA, 2017).

### *White Americans Family and Health*

#### **Human Development Index**

“The Human Development Index (HDI) is a summary measure of achievements in three key dimensions of human development: a long and healthy life, access to knowledge, and a decent standard of living” (Measure of America [MOA], 2021, p. 2). The HDI is used to assess the development of a population, and higher HDIs represent a more significant opportunity for long-term outcomes (MOA, 2021). According to MOA and as noted in Table 1, the HDI of

White Americans is 5.43, on a scale of 0-8, which is slightly higher than the national index of 5.03, with a life expectancy at birth of 78.9 years.

**Table 1**

*Human Development Index*

Racial/Ethnic group	Human development index	Life expectancy at birth (years)	Education			2010 median earnings
			High school or less	Bachelor's degree	Graduate degree	
United States	5.03	78.9	14.4%	28.2%	10.4%	\$28,899
White American	5.43	78.9	9.3%	31.4%	11.7%	\$31,681
African American	3.81	74.6	17.8%	17.9%	6.3%	\$24,974
AIAN	3.55	76.9	19.5%	14.2%	4.8%	\$21,863
AAPI	7.21	86.5	14.3%	50.2%	20.5%	\$34,415
Hispanic American	4.05	82.8	37.8%	13.0%	4.1%	\$20,956

*Source.* Measure of America, 2021.

*Note.* American Indian Alaska Native (AIAN); Asian American Pacific Islander (AAPI).

of White Americans, 31.4% hold a bachelor's or a more advanced college degree, and their 2010 median income was \$31,681 (MOA, 2021). According to the United States Census Bureau (2020), 6.8% of White Americans lived in poverty in 2019 compared to 8.6% nationally.

**Family and Shelter**

In 2019, White Americans made up 72% of the country's population (U.S. Census Bureau, 2020b). Of homes with children living in them, as shown in Table 2, 12.3% had a female head of household in 2019, but for White Americans, the number dropped to 9.7% (U.S. Census Bureau, 2020b). On a single night in January 2019, 47.7% of the nation's 0.24% reported homeless were White Americans (National Alliance to End Homelessness, 2020). Of the federal prison population in 2019, 27.8% were White (U.S. Department of Justice [DOJ], 2019).

**Table 2**

*Family and Shelter by Race*

Racial/Ethnic group	2019 Population <sup>a</sup>	2019 Female Head of House <sup>a</sup>	2019 Homelessness <sup>b</sup>	2016 Federal Imprisonment <sup>c</sup>
United States		12.3%	0.24%	0.07%
White American	72.0%	9.7%	47.7%	27.8%
African American	12.8%	25.6%	40.0%	35.0%
AIAN	0.9%	19.9%	3.2%	33.8%
AAPI	5.9%	8.6%	1.3%	1.4%
Hispanic American	18.4%	16.8%	22.0%	35.0%

Sources. <sup>a</sup> U.S. Census Bureau, 2020; <sup>b</sup> National Alliance to End Homelessness, 2020;

<sup>c</sup> Department of Justice, 2019.

Note. American Indian Alaska Native (AIAN); Asian American Pacific Islander (AAPI).

**Mental Health**

White privilege, the “economic, political, cultural, and psychological advantages of Whiteness” (Wray, 2006, as cited by Blacksher & Valles, 2021, p. S51), is found in the field of mental health and the available access to mental health services. In 2019, about 91.7% of Whites were covered by private or public health insurance, leaving 8.3% without health insurance, as noted in Table 3 (United States Census Bureau, 2020). In 2019, 8.1% of White Americans had a substance use disorder, and 6.0% had an alcohol use disorder, compared to the nation’s rate of 7.7% and 5.6%, respectively (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020). The suicide rate per 100,000 in 2018 for White Americans was 18.0 compared to the national rate of 10.5 (Suicide Prevention Resource Center [SPRC], 2019).

**Table 3**

*Adult Access and Need for Mental Health Treatment*

Ethnic/Racial Minority	U.S. Population <sup>a</sup>	No Insurance <sup>a</sup>	Substance Use <sup>b</sup>	Alcohol Use <sup>b</sup>	Suicide Rate <sup>c</sup>	Mental Illness <sup>b</sup>	Mental Health Treatment <sup>b</sup>
United States		9.2%	7.7%	5.6%	14.2	20.6%	16.1%
White American	72.0%	8.3%	8.1%	6.0%	18.0	22.2%	19.8%
African American	12.8%	10.1%	7.6%	5.1%	7.2	17.3%	9.8%
AIAN	0.9%	19.1%	10.2%	6.9%	22.1	18.7%	13.9%
AAPI	5.9%	6.6%	4.6%	3.6%	7.0	14.4%	7.0%
Hispanic American	18.4%	9.1%	7.0%	5.1%	7.4	18.0%	9.7%

*Sources.* <sup>a</sup> U.S. Census Bureau, 2020; <sup>b</sup> Substance Abuse and Mental Health Services

Administration, 2020; <sup>c</sup> Suicide Prevention Resource Center, 2019.

*Note.* American Indian Alaska Native (AIAN); Asian American Pacific Islander (AAPI).

White Americans are more likely to use mental health services than any other ethnicity (Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality [SAMHSA/CBHSQ], 2020). The reasons for this may differ among individuals. Still, they are likely to include greater access to insurance coverage and mental health clinicians’ language, more often English, allowing for more seamless communication between the provider and the patient (Sue & Sue, 2016). In 2019, 22.2% of White Americans were diagnosed with a mental illness, and 29.8% received treatment (SAMHSA, 2020). Sue and Sue (2016) indicated that White Americans were more likely to complete a treatment plan after seeking services than any minority group. While other factors may contribute to this, a low socioeconomic status appears to be a consistent link to worse treatment completion.

As seen in Table 4, on average, 10% of White Americans are diagnosed with anxiety each year, and just over 30% are diagnosed with depression (SAMHSA/CBHSQ, 2020).

Furthermore, SAMHSA/CBHSQ (2020) states that, on average, 12.5% of White Americans were

diagnosed with schizophrenia from 2013 to 2018, and about 11% were diagnosed with a trauma-related disorder.

**Table 4**

*Mean Percentage of Adult Population Diagnosed with a Mental Illness: 2013-2018*

Racial/Ethnic Group	2019 U.S. Population	Anxiety	Depressive Disorders	Schizophrenia	Trauma-related Disorder
White American	72.0%	10.0%	30.1%	12.5%	11.3%
African American	12.8%	6.8%	29.2%	28.4%	9.7%
AIAN	0.9%	15.1%	27.1%	12.0%	15.5%
AAPI	5.9%	11.9%	27.1%	21.3%	13.5%
Hispanic American	18.4%	12.2%	30.9%	16.5%	11.2%

*Source.* Substance Abuse and Mental Health Services Administration/Center for Behavioral Health Statistics and Quality, 2020.

*Note.* American Indian Alaska Native (AIAN); Asian American Pacific Islander (AAPI).

Nearly 17% of White Americans sought mental health services on average during the five years ending in 2018, as seen in Table 5 (SAMHSA/CBHSQ, 2020). Furthermore, SAMHSA/CBHSQ (2020) indicates that 4.4% of White Americans, during that same period, received a prescription for medication to manage their mental health condition, nearly 8% received outpatient care, and less than 1% received inpatient care.

**Table 5**

*Mean Percentage of Adult Population Who Sought Mental Health Services: 2013-2018*

Racial/Ethnic Group	2019 U.S. Population	Any Mental Health Service	Prescription Medication	Outpatient Care	Inpatient Care
White American	72.0%	16.6%	4.4%	7.8%	0.7%
African American	12.8%	8.6%	6.5%	4.7%	1.4%
AIAN	0.9%	15.6%	13.6%	7.7%	1.6%
AAPI	5.9%	4.9%	3.1%	2.5%	0.6%
Hispanic American	18.4%	7.3%	5.7%	3.9%	0.8%

*Source.* Substance Abuse and Mental Health Services Administration/Center for Behavioral Health Statistics and Quality, 2020.

*Note.* American Indian Alaska Native (AIAN); Asian American Pacific Islander (AAPI).

**White American Youth**

*Family and Experiences.* In 2019, about 22% of the U.S. population was comprised of youth under eighteen years of age, and White American youth made up 52.4% of the youth population (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2020). In 2018, 89% of White American youth graduated from public schools, compared to the country’s graduation rate of 85% (Institute of Education Sciences: National Center for Educational Statistics [IES: NCES], 2020).

In the United States in 2019, as shown in Table 6, 17% of youth lived in poverty, and 10% were White American youth (Annie E. Casey Foundation [AECF], 2019). Of the 18.1% of homeless youth in 2019, 48.3% were White American youth (National Alliance to End Homelessness, 2020). In the U.S. in 2019, 34% of families with children were single parents, and 24% were White American families (AECF, 2019). AECF (2019) also indicated that in 2018, 6% of White American youth had a parent who had been incarcerated at one time following the child’s birth.



**Table 6**

*Youth and Family Conditions That Can Impact Mental Health*

Racial/Ethnic Group	Youth Population 2019 <sup>a</sup>	Graduation 2018 <sup>b</sup>	Poverty 2019 <sup>c</sup>	Homeless 2019 <sup>d</sup>	Single Parent 2019 <sup>c</sup>	Incarcerated Parent 2019 <sup>c</sup>
United States		85%	17%	18.1%	34%	7%
White American	52.4%	89%	10%	48.3%	24%	6%
African American	15.2%	79%	31%	35.7%	64%	13%
AIAN	1.0%	74%	30%	3.6%	52%	26%
AAPI	5.9%	92%	10%	1.2%	15%	*
Hispanic American	25.6%	81%	23%	18.1%	42%	7%

*Sources.* <sup>a</sup> Office of Juvenile Justice and Delinquency Prevention, 2020; <sup>b</sup> Institute of Education

Sciences: National Center for Educational Statistics, 2020; <sup>c</sup> Annie E. Casey Foundation, 2019;

<sup>d</sup> National Alliance to End Homelessness, 2020.

*Note.* American Indian Alaska Native (AIAN); Asian American Pacific Islander (AAPI). \* Data unavailable.

Shown in Table 7 are data collected by the Annie E. Casey Foundation (2019) which revealed that in 2018, 39% of White American youth were victims of maltreatment, including various forms of neglect and abuse, and 44% of the children in foster care were White. Adverse Childhood Experiences (ACEs) are potentially traumatic experiences that occur in childhood and are linked to chronic mental health problems, mental illness, and substance abuse in adulthood (APA, 2020). On average, in 2019, 19% of youth in the United States had an ACE score of 2 or more out of ten compared to 17% of White American youth (AECF, 2019). The rate of White American youth residing in juvenile detention, correctional, or residential facilities per 100,000 is 83, compared to the country’s rate of 138 (AECF, 2019).

**Table 7**

*Youth Experiences That Can Impact Mental Health*

Racial/Ethnic Group	U.S. Youth Population 2019 <sup>a</sup>	Maltreatment Victims 2018 <sup>b</sup>	Foster Care 2018 <sup>b</sup>	Two or more ACEs 2019 <sup>b</sup>	Juvenile Detention, Corrections, Residential 2019 <sup>b*</sup>
United States				19%	138
White American	52.4%	39%	44%	17%	83
African American	15.2%	18%	23%	28%	383
AIAN	1.0%	1%	2%	39%	235
AAPI	5.9%	1%	1%	7%	19
Hispanic American	25.6%	23%	21%	18%	118

Sources. <sup>a</sup> Office of Juvenile Justice and Delinquency Prevention, 2020; <sup>b</sup> Annie E. Casey

Foundation, 2019.

Note. American Indian Alaska Native (AIAN); Asian American Pacific Islander (AAPI). \* Rate per 100,000.

**Mental Health.** Of the youth living in the U.S., 6% were not covered by health insurance in 2019, as shown in Table 8, whereas 4% of White American youth lived without insurance (AECF, 2019). According to SAMHSA (2020), 4.7% of White American youth had a substance use disorder, and 2.2% had an alcohol use disorder in 2019. The United Health Foundation (2021) showed the suicide rate for White American youth aged 15-19 in 2019 was 12.7 per 100,000, compared to the national youth rate of 10.5 per 100,000. In the same year, 16.7% of youth aged 12-17 in the U.S. received specialty mental health treatment in a residential or outpatient setting, and 18.9% of them were White American (SAMHSA, 2020). SAMHSA (2020) further indicated that 18.1% of youth received non-specialty mental health treatment through general medicine, the juvenile justice system, education, or child welfare, and 17.7% were White Americans.

**Table 8**

*Youth Access and Need for Mental Health Treatment, 2019*

Ethnic/Racial Group	U.S. Youth Population <sup>a</sup>	No Health Insurance <sup>b</sup>	Substance Use <sup>c</sup>	Alcohol Use <sup>c</sup>	Suicide Rate <sup>d*</sup>	Specialty Treatment <sup>c**</sup>	Non-Specialty Treatment <sup>c**</sup>
United States		6%	4.5%	1.7%	10.5	16.7%	18.1%
White American	52.4%	4%	4.7%	2.2%	12.7	18.9%	17.7%
African American	15.2%	5%	3.7%	0.3%	6.7	12.8%	21.0%
AIAN	1.0%	14%	8.9%	3.2%	30.0	17.2%	18.1%
AAPI	5.9%	4%	1.3%	0.2%	8.3	13.1%	13.9%
Hispanic American	25.6%	9%	5.0%	1.7%	7.3	17.7%	14.7%

*Sources.* <sup>a</sup> Office of Juvenile Justice and Delinquency Prevention, 2020; <sup>b</sup> Annie E. Casey

Foundation, 2019; <sup>c</sup> Substance Abuse and Mental Health Services Administration, 2020;

<sup>d</sup> Suicide Prevention Resource Center, 2019.

*Note.* American Indian Alaska Native (AIAN); Asian American Pacific Islander (AAPI). \* Rate per 100,000. \*\* Specialty treatment includes outpatient or inpatient clinical mental health services. Non-specialty treatment includes education, general medicine, or child welfare.

As seen in Table 9, on average, 12% of White American youth are diagnosed with anxiety each year (SAMHSA/CBHSQ, 2020). SAMHSA/CBHSQ (2020) further shows that 17.2% and 5.8% of White American youth are diagnosed with depression and oppositional defiant disorders each year, respectively, and 22.7% are diagnosed with a trauma-related disorder.

**Table 9**

*Mean Percentage of Youth Populations Diagnosed with a Mental Health Condition: 2013-2018*

Racial/Ethnic Group	2019 U.S. Youth Population	Anxiety	Depressive Disorders	Oppositional Defiance Disorder	Trauma-Related Disorder
White American	52.4%	12.0%	17.2%	5.8%	22.7%
African American	15.2%	6.1%	10.2%	8.9%	20.6%
AIAN	1.0%	12.7%	14.2%	4.6%	30.0%
AAPI	5.9%	14.7%	18.5%	3.3%	25.1%
Hispanic American	15.6%	11.3%	13.8%	6.1%	23.3%

*Source.* Substance Abuse and Mental Health Services Administration/Center for Behavioral Health Statistics and Quality, 2020.

***African American Family and Health***

According to the U.S. Census Bureau (2020b), African Americans made up 12.8% of the country’s population in 2019. The African American experience in America is laden with examples of overt discrimination and oppression. From the historical roots of kidnapping and purchasing slaves to the continued segregation and exclusionary laws, African Americans have been subjugated and forced to demonstrate individual and collective strength to survive against enormous odds. African Americans are deeply religious, using prayer as their most prominent coping response (DHHS, 2001). Additionally, DHHS (2001) described African Americans as willing to confront their problems rather than ignoring them, woven among a network of friends, family, and community connections to whom they turn for support, and having the ability to downplay negative stereotypical judgments about their behavior.

**Human Development Index**

As noted in Table 1 for African Americans, the Human Development Index is the lowest of the presented groups at 3.81 on a scale of eight (MOA, 2021). According to MOA, the life expectancy of African Americans at birth in the United States is 74.6 years, and 17.9% hold a

bachelor's or a more advanced college degree. African Americans are almost three times more likely than White Americans to live in severe poverty (APA, 2017). In 2019, 17.4% of African Americans lived in poverty, compared to 6.8% of White Americans, and single-mother homes are more prevalent (U.S. Census Bureau, 2020b). Children living in impoverished homes "are more likely to be exposed to chaotic living conditions...that influence socio-emotional adjustment" (Boynton-Jarrett et al., 2013, p. 78).

### **Family and Shelter**

Despite their resourcefulness, mutual affiliation, and loyalty that can help overcome indescribable circumstances, many African Americans in the United States live in segregated neighborhoods with high rates of homelessness, crime, and substance abuse (APA, 2017). In 2019 as shown in Table 2, 25.6% of homes with children had a female head of household (U.S. Census Bureau, 2020b). Of those homeless in 2019, 40% were African American (National Alliance to End Homelessness, 2020). In 2016, 35% of the sentenced offenders in the federal prison population were African American (DOJ, 2019), demonstrating an overrepresentation of almost 300%.

### **Mental Health**

The historical adversity African Americans faced is linked to the socio-economic difficulties they face today, and research has established that socioeconomic status is associated with mental health problems (Buckner et al., 1999; DHHS, 2001; Morrissey et al., 2014). Similarly, being a member of a high-need population such as homelessness, exposure to violence, or incarceration increases the potential need for mental health services (Achenbach, 2017; Buckner et al., 1999; Flannery et al., 2004; Stinson et al., 2016). Reynolds and Gonzales-Backen (2017) also indicate that, although racism and negative stereotypes are less prevalent,

they have a considerable and harmful consequence on African Americans' mental health. Yet, African Americans appear to have mental health symptoms and illnesses at a similar rate as White Americans, with a few exceptions, including schizophrenia and depressive disorders (DHHS, 2001).

According to the U.S. Census Bureau (2020b) and indicated in Table 3, 10.1% of African Americans did not have access to private or public health insurance in 2019. In the same year, 7.6% of African Americans had a substance use disorder, and 5.1% had an alcohol use disorder (SAMHSA, 2020). The suicide rate per 100,000 for African Americans was 7.2 in 2019 compared to the nation's rate of 14.2 (SPRC, 2019).

State and local mental health providers are most often used to treat the mental health needs of African Americans (APA, 2017), which is primarily due to the overrepresentation of African Americans in the previously described high-need populations (DHHS, 2001). Reflecting their cultural traditions, African Americans are more inclined to use home remedies to treat their health, and due to their history of maltreatment, they are less likely to use community mental health services than White Americans (Reynolds & Gonzales-Backen, 2017; DHHS, 2001). Table 3 shows that in 2019, 17.3% of African Americans received a mental illness diagnosis, but only 9.8% received mental health treatment (SAMHSA, 2020). Additionally, termination of mental health services before finishing the treatment plan is more common among African Americans than White Americans (Sue & Sue, 2016).

During the five years ending in 2018, on average, 6.8% of African Americans were diagnosed with anxiety, as shown in Table 4 (SAMHSA/CBHSQ, 2020). SAMHSA/CBHSQ (2020) also reported that nearly 30% were diagnosed with depressive disorders, and more than 28% were diagnosed with schizophrenia, an overrepresentation of more than 200%. African

Americans were the least likely to be diagnosed with trauma, with less than 10% receiving the diagnosis from 2013 to 2018 (SAMHSA/CBHSQ, 2020). As shown in Table 5, SAMHSA/CBHSQ (2020) states that, on average, 8.6% of African Americans sought mental health services. Of this specific minority group, 6.5% received prescription medication to support their mental health, 4.7% received outpatient care, and 1.4% received inpatient care (SAMHSA/CBHSQ, 2020).

The resilience of African Americans is noteworthy, and their traditions and perseverance provide admirable lessons. Their “individual and collective strengths have enabled many African Americans to survive and do well, often against enormous odds” (DHHS, 1999, p. 54). Yet, the mental health system in America is structured for disparate access to its resources. Only one-third of African Americans needing mental health care receive it, and fewer of them receive psychotherapy or evidence-based medication therapy than the overall populace (APA, 2017).

### **African American Youth**

*Family and Experiences.* African American youth made up 15.2% of the country’s youth in 2019 (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2020). In 2018, 79% of the African American youth graduated from a public school setting, compared to the nation’s graduation rate of 85% and the White American rate of 89% (Institute of Education Sciences: National Center for Educational Statistics [IES: NCES], 2020). In 2019, as shown in Table 6, African American youth were three times more likely to live in poverty compared to White American youth (AECF, 2019). Of the 18.1% of youth who were homeless in 2019 in the United States, 35.7% of them were African American (National Alliance to End Homelessness, 2020). Being raised in a home with a single parent is most common for African American youth compared to the other minority groups, with 64% of Black youth falling into this category

(AECF, 2019). AECF (2019) also indicated that in 2018, 13% of African American youth had a parent incarcerated at least once since their child was born.

As shown in Table 7, 18% of neglected or abused victims and 23% of youth in foster care were African American youth in 2018 (AECF, 2019). African American youth, at 28%, have an ACE score of 2 or more out of 10 and are most likely to reside in juvenile detention, correctional, or residential facilities with a rate of 383 per 100,000 compared to White Americans at 83 per 100,000 (AECF, 2019).

***Mental Health.*** As shown in Table 8, African American youth compare similarly to the nation, with 5% being uninsured (AECF, 2019). In 2019, 3.7% of African American youth aged 12-17 were diagnosed with a substance use disorder, and 0.3% were diagnosed with an alcohol use disorder (SAMHSA, 2020). In the same year, the suicide rate for African American youth aged 15-19 years was 6.7 per 100,000 (United Health Foundation, 2021). It is more common for African American youth, if they receive mental health treatment, to do so in a non-specialty setting than to receive specialty care if they receive mental health treatment. In 2018, 21% of African American youth who received mental health care did so in a non-specialty setting, whereas 12.8% of this minority group received specialty mental health care (SAMHSA, 2020).

On average, about 6% of African American youth are diagnosed with anxiety, as demonstrated in Table 9 (SAMHSA/CBHSQ, 2020). Furthermore, about 10% of this youth population are diagnosed with depression, and over 20% are diagnosed with trauma (SAMHSA/CBHSQ, 2020). SAMHSA/CBHSQ (2020) also indicates that nearly 9% of African American youth are diagnosed annually with an oppositional defiant disorder.



### *American Indians and Alaska Natives Family and Health*

The history of American Indians and Alaska Natives (AIAN) has been closely tied to the pressures of European settlers and the policies of the U.S. Government. The Indian Citizenship Act of 1924 allowed American Indians to become U.S. citizens, and it was later amended to include Alaska Natives (DHHS, 2001). AIAN are culturally diverse groups and experienced a devastating reduction in their population due to diseases brought by English immigrants.

American Indians were forced to move to reservations in the 1800s. In the 1970s, AIAN began to demand more authority over their communities, and today over 2.9 million AIAN are living in the United States (U.S. Census Bureau, 2020). DHHS (2020) indicated that over 200 Native communities in Alaska and more than 570 recognized American Indian tribes living in the United States, although the number of American Indians living on reservations has decreased to approximately 20% of their overall population.

#### **Human Development Index**

American Indians and Alaska Natives make up less than 1% of the country's population. American Indians have the lowest Human Development Index of the groups presented in Table 1 at 3.55 compared to the national HDI of 5.03 and White Americans HDI of 5.43 (MOA, 2021). Measure of America (2021) further indicates that American Indians have the lowest life expectancy at birth at 74.6 years, and 17.9% have a bachelor's or more advanced college degree. "The social environments of Native people have remained plagued by economic disadvantage" (DHHS, 2001, p. 82). In 2010, the median earnings for American Indians were \$21,863 (MOA, 2021), and in 2019, 18.5% of American Indians lived in poverty (U.S. Census Bureau, 2020b).

### **Family and Shelter**

In 2019, 0.9% of the United States' population was AIAN (U.S. Census Bureau, 2020b). In the same year, 19.9% of American Indian homes with children had female heads of household, as demonstrated in Table 2 (U.S. Census Bureau, 2020b). AIAN made up 3.2 of the nation's homeless population (National Alliance to End Homelessness, 2020), and in 2016, of the federally imprisoned offenders in the country, 33.8% were American Indians (DOJ, 2019).

### **Mental Health**

More AIAN are uninsured than any other minority population. In 2019 as shown in Table 3, 19.1% of AIAN did not have public or private insurance (U.S. Census Bureau, 2020b). Additionally, 10.2% had a substance use disorder, and 6.9% had an alcohol use disorder (SAMHSA, 2020). The suicide rate per 100,000 in 2018 was 22.1 for AIAN adults, the highest of the presented groups (SPRC, 2019). The Indian Health Service (IHS) was established in 1955 as the primary, comprehensive health care, and mental health service through the Department of Health and Human Services. IHS clinics, however, are primarily located on reservations, reducing access to nearly 80% of Native Americans living in non-reservation areas (DHHS, 2001). Mental health diagnoses are often underrepresented due to differences in language between Native and White people (Payne et al., 2017). Of those who were diagnosed with a mental illness and received treatment in 2019, 18.7% and 13.9%, respectively, were AIAN, an overrepresentation of fifteen to twenty times (SAMHSA, 2020).

As shown in Table 4, SAMHSA/CBHSQ (2020) indicated about 15% of AIAN were diagnosed with anxiety annually, and more than 27% were diagnosed with depressive disorders, as shown in Table 1. Additionally, 12% of this adult population was diagnosed with schizophrenia, and more than 15% were diagnosed with trauma-related disorders

(SAMHSA/CBHSQ, 2020), a 12-27 times overrepresentation in these diagnoses compared to the general population.

On average, about 15.6% of AIAN adults sought mental health services, and 13.6% were given a prescription medication to support their mental health, as indicated in Table 5 (SAMHSA/CBHSQ, 2020). About 7.7% of the AIAN adult population utilized outpatient care to support their mental health diagnosis, and 1.4% accessed inpatient care for treatment (SAMHSA/CBHSQ, 2020). Overall, AIAN are more likely to receive mental health services because of being incarcerated (SAMHSA/CBHSQ, 2020). Furthermore, “Indigenous men and women who meet criteria for depression/anxiety or substance use disorder are significantly more likely to seek help from traditional, spiritual healers than from other sources” (APA, 2017, p. 2). DHHS (2001) indicated that less than half of Native people who receive outpatient services return after their first visit.

### **American Indian and Alaska Native Youth**

*Family and Experiences.* Of the 2019 youth population in the United States, 1.0% were AIAN (OJJDP, 2020). In 2018, 72% of AIAN attending public school graduated, compared to the nation’s graduation rate of 85% (IES: NCES, 2020). AIAN demonstrate a dramatic decline in their academic performance between the fourth and seventh grades (DHHS, 2001). This decline may be due to a misalignment between the American Indian customs of visual observations and the White American teaching style deeply rooted in verbal explanation and abstract conceptualization (Hilberg & Tharp, 2002).

Thirty percent of the AIAN youth were living in poverty in 2019, compared to 17% of the country’s youth, as shown in Table 6 (AECF, 2019). In 2019, 18.1% of the nation’s youth were homeless, and 3.6% were American Indians and Alaska Natives (National Alliance to End

Homelessness, 2020). In 2019, 52% of AIAN youth were being raised in single-parent homes, and 26% of this youth minority group had a parent incarcerated at some time after the child was born (AECF, 2019).

Aligning more closely with their overall population, shown in Table 7, 1% of AIAN youth were victims of maltreatment in 2018, and 2% were in foster care (AECF, 2019).

Demonstrating exorbitant overrepresentation, 39% of AIAN had an ACE score of 2 or more out of 10 in 2019, and 235 per 100,000 AIAN youth were living in juvenile detention, correctional, or residential facilities (AECF, 2019).

***Mental Health.*** The minority group with the most significant number of uninsured youths in 2019, as shown in Table 8, is AIAN, with 14% of them lacking health insurance (AECF, 2019). In the same year, 8.9% of AIAN youth were diagnosed with a substance use disorder, and 3.2% were diagnosed with an alcohol use disorder (SAMHSA, 2020). The suicide rate for AIAN youth aged 15-19 was 30 per 100,000, making AIAN youth the group with the highest rate of suicide that year (SPRC, 2019). For youth who received mental health treatment in 2019, 17.2% of AIAN youth received care in a specialized setting, and 18.1% received non-specialized treatment (SAMHSA, 2020).

Annually, as presented in Table 9, nearly 13% of AIAN youth are diagnosed with anxiety, and over 14% are diagnosed with depressive disorders (SAMHSA/CBHSQ, 2020). According to SAMHSA/CBHSQ (2020), 4.6% of AIAN youth are diagnosed with an oppositional defiant disorder, and 30% are diagnosed with trauma. AIAN youth are overrepresented 5-30 times in these diagnoses.

### ***Asian American and Pacific Islander Family and Health***

The discovery of gold in California in the mid-1800s brought more than 300,000 Chinese immigrants to the United States, followed by Japanese immigrants who filled the need for cheap laborers on Hawaiian sugar plantations (DHHS, 2001). In the years that followed, the U.S. government passed laws to control Asian immigration and restrict their rights. Currently, Asian immigrants primarily come to America for better educational and economic opportunities (DHHS, 2001). DHHS indicates that Pacific Islanders are generally not immigrants but are descendants of land claimed by the United States and have a history similar to AIAN.

#### **Human Development Index**

The Human Development Index (HDI) for Asian Americans and Pacific Islanders (AAPI) is 7.21, the highest of the studied minority groups in Table 1 (MOA, 2021). Similarly, each of the critical indicators contributing to the HDI is the highest for AAPI among all studied groups. Life expectancy at birth for this group of people is 86.5 years, just over 50% have a bachelor's or higher college degree, and the 2010 median annual income was \$34,415 (MOA, 2021). While AAPI, on average, attend more schooling than any other minority group in the country, some groups within this classification struggle to complete high school (DHHS, 2001). AAPI are less likely than the other populations to experience poverty, with only 6.5% living in poverty (U.S. Census Bureau, 2020b).

#### **Family and Shelter**

Asian Americans and Pacific Islanders made up 5.9% of the U.S. population in 2019 (U.S. Census Bureau, 2020b). The majority of AAPI live in metropolitan areas in living arrangements referred to as "family households," with Pacific Islanders having larger families than Asian Americans (DHHS, 2001). Fewer AAPI, as shown in Table 2, when compared to

African Americans and AIAN have households headed by females. In 2019, 8.6% of homes with children had a female head of household (U.S. Census Bureau, 2020b).

### **Mental Health**

As presented in Table 3, in 2019, 6.6% of AAPI did not have public or private health insurance (U.S. Census Bureau, 2020). Of this subgroup, 4.6% had a substance use disorder, and 3.6% had an alcohol use disorder (SAMHSA, 2020). In 2018, AAPI had the lowest suicide rate per 100,000 at 7.0 (SPRC, 2019). Of the 20.6% of adults in the U.S. diagnosed with a mental illness and 16.1% who received treatment, 14.4% and 7%, respectively, were AAPI (SAMHSA, 2020). According to Sue et al. (2012), studies have demonstrated consistently low prevalence rates of mental disorders in AAPI. However, “culturally competent and effective services are often unavailable or inaccessible” (DHHS, 2001, p. 117) to AAPI due to a lack of English proficiency or a lack of providers who speak the necessary language.

On average, nearly 12% of AAPI adults were diagnosed with anxiety, and over 27% were diagnosed with depression, as shown in Table 4 (SAMHSA/CBHSQ, 2020). During this same period, according to SAMHSA/SBHSQ (2020), more than 21% of AAPI adults were diagnosed with schizophrenia, and nearly 14% were diagnosed with trauma, as demonstrated in Table 5. AAPI adults are overrepresented in all presented diagnoses by 200-450%. Annually, about 5% of AAPI adults sought mental health services (SAMHSA/CBHSQ, 2020). Approximately 3% were given a prescription medication to support their mental health, 2.5% received outpatient care, and 0.6% received inpatient care (SAMHSA/CBHSQ, 2020).

As each of the racial groups previously discussed, AAPI are diverse in their ethnicity, language, culture, and income (APA, 2017). The teachings within the AAPI culture “discourages open displays of emotions, to maintain social and familial harmony and to avoid exposure of

personal weakness” (DHHS, 2001, p. 111), and mental health needs are appraised as a poor reflection on the family ancestry (APA, 2017). Therefore, mental health clinicians, using standard protocols for diagnosis, may be less likely to identify potential conditions. The vast array of cultural, psychological, and social variations among the AAPI ethnic groups can also make it challenging to analyze differences and mental health needs (Sue et al., 2012).

### **Asian American and Pacific Islander Youth**

***Family and Experiences.*** In 2019, 5.9% of the U.S. population were AAPI youth (OJJDP, 2020). In 2018, 92% of the AAPI high school seniors in public schools graduated, demonstrating the highest graduation rate of all groups and 7% more than the country’s graduation rate (IES: NCES, 2020). Like White Americans, as shown in Table 6, 10% of AAPI youth lived in poverty in 2019 (AECF, 2019). However, the homelessness of AAPI youth in the same year was only 1.2%, which was the lowest homelessness rate of all groups in 2019 (National Alliance to End Homelessness, 2020). At less than half of the national rate, 15% of AAPI youth lived in single-parent homes in 2019 (AECF, 2019). AECF (2019) suppressed results for AAPI youth with a parent who was incarcerated because of being unable to calculate the confidence interval. Depicted in Table 7, 1% of AAPI youth were victims of maltreatment, including abuse or neglect, in 2018, and 1% were in foster care (AECF, 2019). In the same year, 7% of AAPI youth reported an ACE score of 2 out of 10 or greater, and youth living in juvenile detention, correctional, or residential facilities per 100,000 was 19 (AECF, 2019).

***Mental Health.*** AAPI youth in 2019 living without health insurance, as shown in Table 8, was 4% (AECF, 2019). In the same year, 1.3% and 0.2% of AAPI youth were diagnosed with a substance use disorder or alcohol use disorder, respectively (SAMHSA, 2020). The suicide rate per 100,000 for AAPI youth in 2019 was 8.3 (SPRC, 2019). Of those youth who received

specialty mental health treatment in 2019, 13.1% were AAPI, with 13.9% receiving non-specialty care (SAMHSA, 2020).

According to SAMHSA/CBHSQ (2020) and shown in Table 9, nearly 15% of AAPI youth are diagnosed with anxiety, and 18.5% are diagnosed with depressive disorders annually. Additionally, SAMHSA/CBHSQ (2020) states that, on average, 3.3% of AAPI youth are diagnosed with an oppositional defiant disorder, and over 25% are diagnosed with a trauma-related disorder.

### ***Hispanic Americans/Latinx Family and Health***

Although the Spanish language and cultural influence unite Hispanics, differences among the four main Latino groups can be attributed to the circumstances of their migration to the United States (DHHS, 2001). Many Mexicans stayed on their land after the U.S. took over territories in the south from the area that is now California to Texas. Economic hardships in Mexico and the need for laborers in America have influenced the arrival of additional Mexican immigrants. High numbers of unemployed farm workers in Puerto Rico following World War II caused many to emigrate to the mainland. While emigration to the mainland still occurs, since the 1980s, many choose to return to the island. Many Cubans came to America to escape a communist government after Fidel Castro overthrew the Cuban government. Latinos from Central America arrived between the 1970s and 1990s to escape conflicts in their home countries. Although these conflicts resulted in war-related trauma for many Central Americans, many are not recognized as refugees.

### **Human Development Index**

The Human Development Index for Hispanic Americans is 4.05, as indicated in Table 1, with a life expectancy at birth of 82.8 years, the second oldest expectancy following Asian



Americans (MOA, 2021). It should be noted that this life expectancy may not accurately account for the many foreign-born Hispanic Americans who return to their home country when they expect to die soon. If these deaths are not registered in their country of residence, the United States, some individuals become “statistically immortal, resulting in an artificially low mortality rate” (Di Napoli et al., 2021, p. 1). According to Measure of America (2021), only 13% of Hispanic Americans hold a bachelor’s or higher college degree. In 2010, the median annual income for Hispanic Americans was the lowest compared to the other minority groups, presented at \$20,956 (MOA, 2021). In 2019, 12.3% of Hispanic Americans lived in poverty (U.S. Census Bureau, 2020b). DHHS (2001) indicated that Mexican Americans, Puerto Ricans, and Central Americans generally come to the U.S. as unskilled laborers, with median family incomes reflecting their training. Conversely, many Cuban Americans come from an elite group with well-connected families, contributing to their overall economic solid status (DHHS, 2001).

### **Family and Shelter**

According to the U.S. Census Bureau (2020b), Hispanic Americans of any ethnicity made up 18.4% of the country’s population. Like Asian Americans and Pacific Islanders, Hispanic Americans often live in extended family households (DHHS, 2001). As indicated in Table 2, of Hispanic American homes with children, 16.8% of them have a female head of household (U.S. Census Bureau, 2020). Of those homeless in 2019, 22% were Hispanic Americans (National Alliance to End Homelessness, 2020). Hispanic Americans made up 35% of the sentenced offenders in the custody of the federal prisons in 2016, demonstrating an overrepresentation of almost 200% (DOJ, 2019).

### **Mental Health**

Due to their low levels of education, economic status, and the traumatic events in their home countries, Hispanic Americans show a need for mental health services (APA, 2017). In 2019, 9.1% of Hispanic Americans did not have public or private health insurance, as Table 3 indicates (U.S. Census Bureau, 2020b). Diagnosed with substance use disorders were 7% of the Hispanic American population, and 5.1% had an alcohol use disorder (SAMHSA, 2020). The suicide rate per 100,000 for this minority population was 7.4, compared to 14.2 for the country in 2019 (SPRC, 2019). Of the 18% of Hispanic American adults diagnosed with a mental illness, 9.7% received mental health treatment in 2019 (SAMHSA, 2020).

According to SAMHSA/CBHSQ (2020) and seen in Table 4, 12.2% of Hispanic Americans were diagnosed with anxiety, and nearly 31% were diagnosed with depressive disorders. Additionally, 16.5% were diagnosed with schizophrenia, and more than 11% with a trauma-related disorder (SAMHSA/CBHSQ, 2020). Hispanic Americans born in the U.S. show a higher prevalence of mental disorders than those born in their home country, indicating that “factors associated with living in the United States are related to an increased risk of mental disorders” (DHHS, 2001, p. 134).

As shown in Table 5, during the same 5-year period, about 7% of Hispanic Americans received mental health services (SAMHSA/CBHSQ, 2020). SAMHSA/CBHSQ (2020) indicates that almost 6% of Hispanic Americans received prescription medication to support their mental health, nearly 4% received outpatient care, and about 0.8% received inpatient care. For those who can and do seek clinical support for mental health problems, language barriers between the patient and clinician can make treatment difficult. Hispanic Americans are more likely to receive

mental health services from a general health care provider than a mental health specialist (APA, 2017).

### **Hispanic American/Latino Youth**

***Family and Experiences.*** The largest minority group making up the U.S. youth population in 2019 was Hispanic American youth at 25.6% (OJJDP, 2020). The graduation rate for Hispanic American youth in 2018 was 81% (IES: NCES, 2020). U.S.-born Hispanic Americans are more likely to finish high school than those who are foreign-born (DHHS, 2001). In 2019, as shown in Table 6, 23% of Hispanic American youth were living in poverty (AECF, 2019). The homeless rate for Hispanic American youth in 2019 was 18.1%, matching the nation's rate of homelessness (National Alliance to End Homelessness, 2020). In the same year, 42% of Hispanic American youth lived in single-parent families (AECF, 2019). According to AECF (2019), in 2018, 7% of Hispanic American youth had a parent incarcerated after the child's birth.

In 2018, 23% of Hispanic American youth were victims of maltreatment, including abuse and neglect, as shown in Table 7, and 21% of Hispanic American youth had been in foster care (AECF, 2019). In 2019, 18% of this minority group had experienced two or more Adverse Childhood Experiences out of ten, and 118 per 100,000 lived in juvenile detention, correctional, or residential facilities (AECF, 2019).

***Mental Health.*** As reported in Table 8, according to AECF (2019), 9% of Hispanic American youth were not covered by health insurance. In 2019, 5% of Hispanic American youth had a substance use disorder, and 1.7% had an alcohol use disorder (SAMHSA, 2020). In the same year, the suicide rate for Hispanic American youth was 7.3 per 100,000 (SPRC, 2019).

SAMHSA (2020) indicated that 14.7% of Hispanic American youth received specialty mental health treatment in 2019, and 17.7% received non-specialty mental health treatment.

Each year, as noted in Table 9, more than 11% of Hispanic American youth are diagnosed with anxiety, and nearly 14% are diagnosed with depression (SAMHSA/CBHSQ, 2020). Additionally, SAMHSA/CBHSQ (2020) indicates that over 6% of Hispanic American youth are diagnosed with an oppositional defiant disorder, and over 23% are diagnosed with a trauma-related disorder.

While mental health research and study have been extensive, only in the past two decades has a focus on ethnic and racial minorities made findings regarding disparities and hope for the future more available. “People from racial/ethnic minority groups are less likely to receive mental health care” (APA, 2017, p. 2). “Partnership among stakeholders can generate the knowledge and resources necessary to improve mental health services for racial and ethnic minorities in this country” (DHHS, 2001, p. 159). The development and expansion of the public health approach to mental health care are necessary to benefit all people living in the United States.

### **School-Based Interventions**

The compulsory school age for children in North Dakota is seven; however, 80-89% of North Dakota kindergarten students are enrolled in full-day kindergarten programs when they are five or six years of age (Education Week, 2015). Developmental milestones, things that most children can do by the age of five include singing, dancing, being liked and pleasing friends, speaking clearly, using complete sentences to tell a simple story, showing a wide range of emotions, and being physically active (Centers for Disease Control and Prevention [CDC], 2020b). Cognitively, children entering kindergarten typically can count a minimum of ten

objects, print some letters and numbers, copy geometric shapes, and sustain focus on a single activity for a minimum of five minutes (CDC, 2020b).

There were 1.8 million public elementary school teachers in the United States in the 2017-2018 school year, with 89% being female and 79% White (Hussar et al., 2020). According to Hussar et al. (2020), 58% of public school teachers hold a post-baccalaureate degree, and 66% of educators have ten or more years of teaching experience. Teacher education programs have seen a 35% reduction in students entering the undergraduate programs (Sutcher et al., 2016), and 33% of novice teachers leave the profession within the first three years of teaching (Redding, 2018). Teachers who view themselves as less able to manage a classroom of students are more likely to leave the field of education than those who view their behavior management skills more effectively (Brouwers & Tomin, 2000, as cited by Lane et al., 2012).

The Individuals with Disabilities Education Act (IDEA), established in 1975, mandates that all eligible students between the ages of three and twenty-one receive a free and appropriate public education (FAPE) when a team of professionals has determined the student has a disability that adversely affects academic performance and requires special education and related services (Hussar et al., 2020). As found in Table 10, there are thirteen disability categories under IDEA, and a comprehensive evaluation is utilized to determine whether a child has one of these disabilities. Children with disabilities are to be educated alongside their peers to the maximum extent appropriate (IDEA, 2004). The student's Individualized Education Plan (IEP) is written or revisited at least yearly, focusing on the child's strengths, parents' concerns, the results of the evaluation, and the child's academic, developmental, and functional needs (IDEA, 2004). Hussar et al. (2020) noted that in the 2018-2019 school year, 14% of the total public school enrollment received special education services. Additionally, Hussar et al. (2020) noted that of

those students who were served under IDEA, 18% were AIAN, 16% were African American, 14% were White American, 13% were Hispanic American, 11% were Pacific Islander, and 5% were Asian American. Thirty-three percent of the 7.1 million public school students with a disability had a specific learning disability, which is a “disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations” (Hussar et al., 2020, p. 41). Furthermore, 7% of students served under IDEA were Black Americans receiving services for emotional disturbances (Hussar et al., 2020). Students identified with an emotional disturbance (ED) disability often exhibit physical aggression, hyperactivity, impulsiveness, anxiety, and depression (Lane et al., 2012). Thirty-two percent of students who dropped out of school in the 2017-2018 school year were students with emotional disturbances (Hussar et al., 2020).

The reauthorization of the Individuals with Disabilities Act of 2004 provided schools with an evidence-based alternative approach to the identification process for students with specific learning disabilities. Response to Intervention (RTI) allowed schools to use documentation of a lack of academic progress with an evidence-based intervention framework to aid in determining the presence of a learning disability for students (Wodrich et al., 2006). While RTI models may vary, they are built upon the principles of a systematic, preventative, and proactive approach which includes universal screening, problem-solving, aligned interventions, data-based decision making, highly qualified teachers, and monitoring progress (Barnes & Harlacher, 2008, as cited by Kearney & Graczyk, 2013; McIntosh & Goodman, 2016).

**Table 10**

*IDEA Disability Categories*

<b>Category</b>	<b>Description</b>	<b>Example</b>
Specific Learning Disability	Conditions affecting a child’s ability to read, write, listen, speak, reason, or do math	Dyslexia Dyscalculia Auditory Processing Disorder
Other Health Impairment	Conditions that limit a child’s strength, energy, or alertness	ADHD
Autism Spectrum Disorder	A developmental disability with a wide range of symptoms that mainly affects a child’s social and communication skills	
Emotional Disturbance	An inability over a long period to build or maintain interpersonal relationships with others	Oppositional Defiance Bipolar Disorder
Speech or Language Impairment	Difficulties with speech related to articulation or understanding language	Stuttering Receptive Language
Visual Impairment	Problems with eyesight that is not corrected by eyewear	Blindness
Deafness	Problems with hearing that are not corrected by hearing aids	
Hearing Impairment	Hearing loss not covered by the definition of deafness and can change over time	
Deaf-blindness	Severe hearing and vision loss	
Orthopedic Impairment	A severe lack of function or ability within the body	Cerebral Palsy
Intellectual Disability	Significant subaverage intellectual functioning existing with deficits in behavior	Down Syndrome
Traumatic Brain Injury	An acquired injury to the brain caused by an external physical force resulting in impairment	
Multiple Disabilities	More than one condition covered by IDEA	

*Source.* Individuals with Disabilities Education Act, 2004.

Near the same time that IDEA was reauthorized, many school districts were in the early stages of implementing schoolwide positive behavior interventions and supports (PBIS) to improve students' behavior, social competence, and emotional regulation and to enhance school safety and teacher efficacy. To combine RTI and PBIS, two effective approaches for meeting student needs, the multi-tier system of supports (MTSS) was developed as a single "coherent, strategically combined system meant to address multiple domains (e.g., literacy and social-emotional competence)" (McIntosh & Goodman, 2016, p. 5). Through the MTSS framework, the goal is to prevent learning and behavior problems from occurring by providing prevention and core instruction to all students at Tier 1 (Lane et al., 2012). Tier 1 core instruction should be structured so that it meets the needs of at least 80% of the student population (Kearney & Graczyk, 2013).

Schools universally screen students two or three times each year to assist in identifying students whose needs are met with core instruction alone and those who may benefit from interventions or supports, in addition to the Tier 1, core academic and social-emotional instruction (Lane et al., 2012). The measures used for screening are also regularly used for monitoring progress to ensure growth is being made toward the student's goal(s) or to determine whether a student may benefit from interventions. Tier 2, strategic interventions, often include a "collaborative multidisciplinary team to identify and facilitate research-based interventions for learning, behavior, and social-emotional development" (Sullivan et al., 2018, p. 5). Tier 2 interventions occur 3-5 times per week for approximately 30 minutes each day, and they are provided to small groups of students with similar intervention needs. Strategic, Tier 2 interventions occur in addition to Tier 1 instruction. Intensive interventions, Tier 3 interventions, occur more frequently and with more intensity than Tier 2 interventions (Kearney & Graczyk,



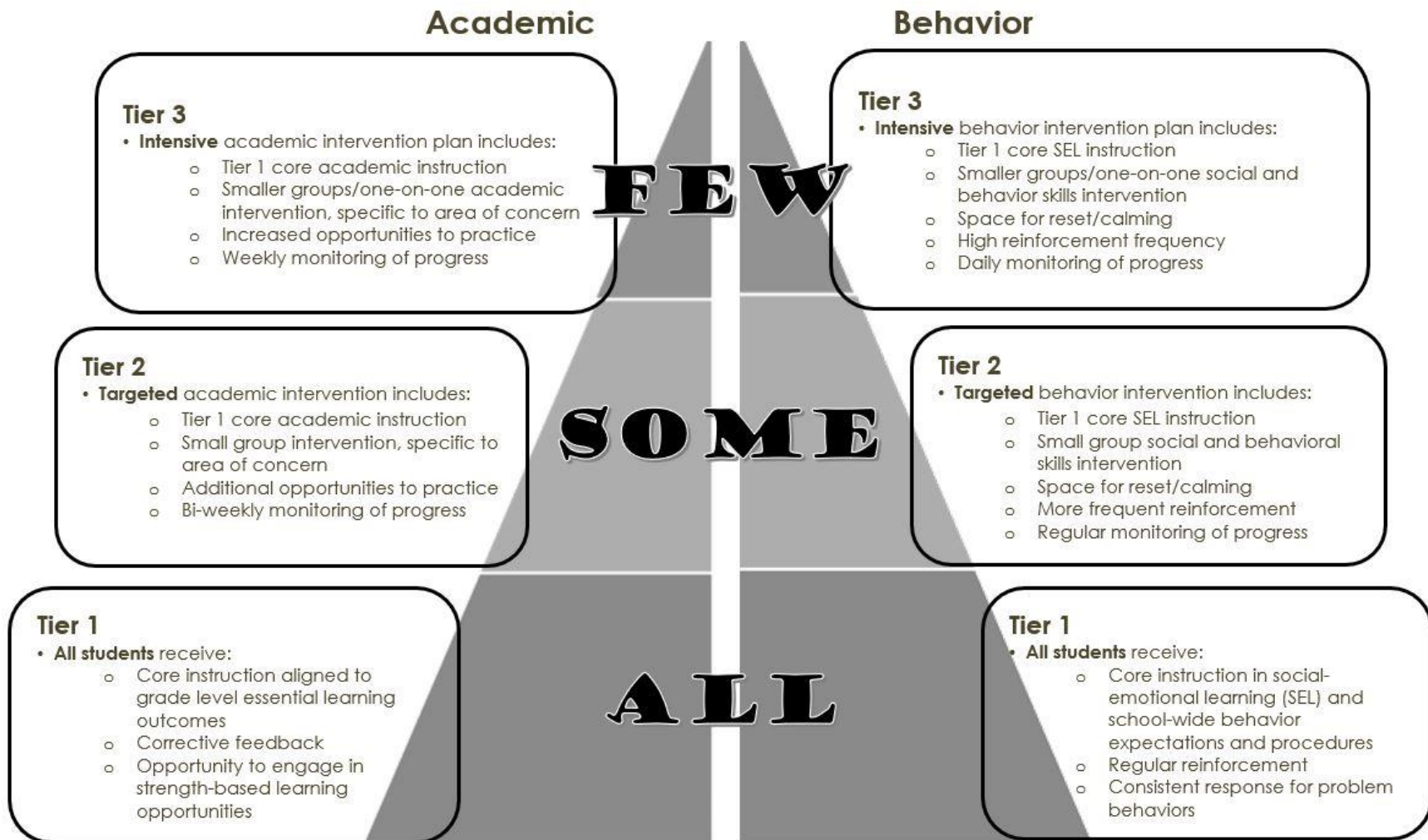
2013), and the most skilled interventionists should provide them to meet the severity of the student's needs (McIntosh & Goodman, 2016). Tier 3 interventions take place in addition to Tier 1 instruction and occur in smaller-sized groups or individually for 30-60 minutes daily. Figure 1 is a visual representation of a school district's MTSS framework.

Early detection of characteristics that are precursors of mental illness allows for the delivery of early intervening services within the school's MTSS framework and with community agencies that can provide clinical support when necessary. Most schools that universally screen students' mental health do so through norm-referenced screening instruments (e.g., Behavior Assessment System of Children – BASC, Strengths and Difficulties Questionnaire – SDQ, Student Risk Screening Scale – SRSS, Systematic Screening for Behavior Disorders – SSBD), which are most often completed by adult informants for elementary-aged students including parents and/or teachers (Levitt et al., 2007). Notably, adult-informed screeners risk indicating how the adult is feeling about the child at the time of completion rather than generating an objective and reflective rating of the child (von der Embse et al., 2018). With repeated use of adult-informed screening measures, specific training protocols, and opportunities to practice rating with feedback, teachers consistently rate characteristics among children in their early school years who have behavior difficulties (Levitt et al., 2007; von der Embse et al., 2018).

As reported in one study, “there is growing empirical support that school-based mental health programming can positively influence a diverse array of social, health, and academic functioning” (Ballard et al., 2013, p. 145). von der Embse et al. (2018) reported that up to seven years could pass between the initial manifestation of the problem until intervention is provided when schools do not train teachers in the importance of screening and systematic collection of data to identify students' difficulties accurately. School-based mental health services for

Figure 1

Fargo Public Schools MTSS Framework



prevention and intervention of social-emotional concerns, such as collaboration between families, community mental health agencies, and schools including psychologists, counselors, teachers, and social workers “can positively influence a diverse array of social, health, and academic functioning” (Ballard et al., 2013, p. 145). It is critical and urgent that school resources be utilized for the prevention and early detection of students who may be at risk of developing further difficulties.

### ***Emotional Disturbance***

Emotional Disturbance (ED) is “a condition exhibiting one or more of the following characteristics over a long period that adversely affects the child’s academic performance: an inability to learn that cannot be explained by intellectual, sensory, or health factors; an inability to build or maintain an interpersonal relationship with peers and teachers; inappropriate types of behaviors or feeling under normal circumstances; a general mood of unhappiness or depression; or a tendency to develop physical symptoms or fears associated with personal or school problems” (IDEA, 2004, § 300.8). In simpler terms, the five characteristics related to students with ED can be termed “inability to learn, relationship problems, inappropriate behavior, unhappiness or depression, and physical symptoms or fears” (Cullinan et al., 2003, p. 94). Students who meet the IDEA criteria for ED experience a wide range of educational challenges that may include deficits in social skills, academic, language, or self-regulation, reduced processing time, and thought or mood disorders (North Dakota Department of Public Instruction [ND DPI], 2020).

In North Dakota, 6% of all students identified as having a disability were eligible under the category of ED; however, this number “excludes many students who experience an emotional or behavioral disorder” (ND DPI, 2020, p. 5). ND DPI indicates that many of these excluded

students often have a clinical diagnosis related to an emotional or behavioral disorder, but they do not yet meet the eligibility requirements under IDEA as a student with ED, suggesting “a much greater impact on schools and classrooms than the current identification rate for ED under IDEA” (ND DPI, 2020, p. 5). While initial thoughts of ED may conjure images of students with acting-out behaviors, it also includes students with covert behaviors, which are no less harmful or challenging to these students and their families.

### **Externalizing Behaviors**

Externalizing behavior patterns are overt, acting-out behaviors that can include verbal and physical aggression, noncompliance, restlessness, coercion, and hostility (Lane et al., 2015; von Stumm et al., 2011; Wyman et al., 2010). Externalizing behavior problems in school can lead to school failure and compromised social relationships (Menzies & Lane, 2012). When evident in childhood, these behaviors can be predictors for adulthood antisocial behaviors and substance abuse (Jokela et al., 2009). Jokela and collaborators (2009) demonstrated that externalizing behaviors in childhood can “also predict lower socioeconomic achievement and delinquent behaviors” and “are a marker of increased adulthood mortality” (p. 19).

Individual characteristics for externalizing behavior in children aged 6-11 include hyperactivity, exposure to television violence, low IQ, and dishonesty and aggression (U.S. Department of Health and Human Services [DHHS], 2001). Environmental conditions for young children who may be more likely to develop externalizing behaviors include living in poverty, single-parent homes, homes with harsh, lax, or inconsistent discipline, parents who are abusive to or neglect the child, and homes where the relationship between the parent and child is poor (DHHS, 2001). DHHS (2001) further indicates that children who have low performance in

school, a poor attitude toward school, and weak social ties to a peer group are more at risk for developing externalizing behaviors.

### **Internalizing Behaviors**

Students experiencing internalizing behavior problems are less likely to be identified as having trouble or receiving support for their problems compared to students with externalizing behavior problems (Lane et al., 2015). Internalizing behaviors include anxiety, depression, somatic complaints (e.g., stomachache, headache), social withdrawal, and eating disorders (Morris et al., 2002 as cited in Lane et al., 2012). Evidence of these behaviors in childhood serves as potential predictors for depression and anxiety disorders in adulthood (Jokela et al., 2009) as well as marital and occupational instability (von Stumm et al., 2011). On-going problems with internalizing behaviors in childhood are associated with an increased risk of suicidal ideation (Colman et al., 2007 as cited by Stansfeld et al., 2016). Jokela et al. (2009) reveal that internalizing behavior problems in childhood, like externalizing behavior difficulties, may also predict criminal behavior and diminished socioeconomic achievement later in life in addition to early mortality.

Individual risk factors or personal characteristics for internalizing behavior problems in young children include inhibition, fearfulness, shyness, avoidance of new situations, rigidity, and external locus of control (Novak & Mihić, 2018). Family risk factors or environmental conditions for young children who may be more likely to develop internalizing behavior conditions include parental neglect, family maltreatment, family violence, parental conflict, and divorce (Novak & Mihić, 2018). Novak and Mihić (2018) also indicate that children who have mothers battling depression or either parent who is struggling with anxiety are likely to experience more authoritative discipline, rejection, and less response to their needs. Finally,

children who demonstrate academic problems, parental stress, social isolation, peer victimization, or bullying are more at risk of developing internalizing behavior problems (Novak & Mihić, 2018).

A wealth of research exists from the past two decades related to internalizing and externalizing behaviors and the role they play in predicting reduced outcomes for students (Göbel et al., 2016; Kjeldsen et al., 2016; Marryat et al., 2017; Sellers et al., 2019; Thomson et al., 2019; Vella et al., 2018; von der Embse et al., 2018). Many researchers have defined the childhood characteristics of youth and adults who have been diagnosed with a mental illness (Boynton-Jarrett et al., 2013; Fatori et al., 2013; Flannery et al., 2004; Nee & Witt, 2013; von Stumm et al., 2011). Additionally, researchers have articulated childhood characteristics of youth who exhibit internalizing and externalizing behaviors (Essex et al., 2009; Göbel et al., 2016; Marryat et al., 2017; Vella et al., 2018; Wyman et al., 2010), and there are consistencies in the two groups of characteristics. There is, however, an absence of literature that correlates childhood characteristics to internalizing and externalizing behaviors, which, by following the research, may aid in early identification and prevent future mental health problems.

### ***Student Risk Screening Scale – Internalizing and Externalizing***

Recent studies have indicated that nearly 25% of children will have a behavioral or mental health program each year (Levitt et al., 2007; Nemeroff et al., 2008; von der Embse et al., 2018). Furthermore, of those who meet the criteria for the mental health diagnosis each year, only about a quarter of them receive treatment (Nemeroff et al., 2008). Historically, a teacher referral for behavioral and emotional concerns was a reactive response that required “a sufficient accumulation of severe mental and behavioral health problems to warrant a comprehensive, individualized evaluation” (Oakes et al., 2014, as cited by von der Embse et al., 2018, p. 373).

This reaction often resulted in an overidentification of a particular subgroup or behavior (von der Embse et al., 2018). In the past two decades, school districts across the United States have shifted their perspectives from this “wait-to-fail” model to the concept of preventing behavior problems by providing primary instruction to all students and identifying and responding to students who require additional behavioral or emotional support (Lane et al., 2012; Payton et al., 2000; Sugai et al., 2000).

Systematic screening is essential for the early detection of behavioral and mental health difficulties to establish positive relationships with adults and peers, increase school attendance, and receive more academic instruction (Schatschneider et al., 2014). “Schools offer the greatest potential for early identification programs because schools work with children and their families on a daily basis throughout the school year and are well positioned to screen and assess large numbers of children” (Nemeroff et al., 2008, p. 329). Universal screening identifies youth who have mental health risk factors (Levitt et al., 2007) for the administration of a diagnostic measure to determine the appropriate behavioral or social-emotional interventions that will disrupt undesirable tendencies and create the opportunity for the development of school socialization patterns (Schatschneider et al., 2014). Table 11 provides examples of universal and diagnostic tools available for schools to use to assist in the screening process, including targeted conditions, age ranges, administration time, and cost.

School-based mental health programs have been supported in recent years in federal and state initiatives (Ballard et al., 2013; von der Embse et al., 2018), and “youth may be more likely to follow through with referrals for services if the services are located within the school setting” (Levitt et al., 2007, p. 165). According to Levitt et al. (2007), schools were the primary providers of mental health services to children. Students who demonstrated strong literacy and social skills

**Table 11**

*Mental health screening and assessment instruments for use in schools*

Instrument	Conditions addressed	Informants	Age ranges	Administration time	School cost
Behavior Assessment System for Children (BASC)	Behavioral, emotional, academic problems	Parents	2-18	20 minutes/child	\$360 per school
		Teachers	2-18	20 minutes/child	\$46 for 25
		Youth	8-18	30 minutes/child	rating scales
Child Behavior Checklist (CBCL)	Behavioral problems and social competence	Parents	2-18	30 minutes/child	\$505 per school
		Teachers	2-18		\$35 for 50
		Youth	11-18		checklists
Social Skills Improvement System (SSiS)	Prosocial behavior, motivation to learn, academic problems	Parents	3-18	25 minutes/child	\$143 per school
		Teachers	3-18		\$74 for 25
		Students	8-18		rating scales
Strengths and Difficulties Questionnaire (SDQ)	Psychosocial risk	Parents	4-17	10 minutes/child	Free or \$0.25 per online scoring use
		Teachers	4-17		
		Youth	11-17		
Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE)	Behavioral, emotional, academic problems	Teachers	5-18	20 minutes/class	Free
Systematic Screening for Behavior Disorders (SSBD)	Behavior Problems	Teachers	5-12	45 minutes/class	\$550 per school, annually

*Source.* Levitt et al., 2007; Lane et al., 2012.



were more likely to succeed in school overall (Essex et al., 2009; Greenwood et al., 2017; Oakes et al., 2010; Suldo et al., 2013). In the absence of intervention, when these skills are missing or lagging, students tend to have more difficulty negotiating teacher and peer relationships (Oakes et al., 2010), regulating emotions (Wyman et al., 2010), and functioning independently (Greenwood et al., 2017) among other social, behavioral, and academic struggles.

“Given that behavioral difficulties become increasingly stable over time, it is essential that students be identified early when aggressive and antisocial behavior patterns are not yet firmly engrained in students’ behavioral repertoires” (Oakes et al., 2010, p. 231). Universal screening procedures allow for early identification of children who may be likely to have persistent mental health problems (New Freedom Commission on Mental Health; as cited by Essex et al., 2009), and to prevent or reduce the onset of negative consequences associated with untreated mental health conditions, thus promoting learning (Levitt et al., 2007).

The Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE) is a free universal screening tool that was designed to efficiently identify students with behaviors that deviate from the social norm, violate other people’s rights, and impede meaningful interactions with others (Lane et al., 2012). The Student Risk Screening Scale was initially developed to detect elementary-aged students at risk for antisocial behavior (Drummond, 1994). Through continued research, it now includes a rating for internalizing and externalizing behaviors and spans K-12 settings. The classroom teacher rates each student in the class using a Likert-type scale to determine the frequency (0 = never, 1 = occasionally, 2 = sometimes, and 3 = frequently) of the seven SRSS-IE externalizing behaviors – steals; lies, cheats, sneaks; behavior problem; peer rejection; low academic achievement; negative attitude; and aggressive behavior (Oakes et al., 2010). Expanded in 2012 to include internalizing behavior risks, those which often go

unnoticed by teachers and are directed inward, the classroom teacher uses the same Likert-type scale to rate each student on the behaviors – emotionally flat; shy, withdrawn; sad, depressed; anxious; and lonely (Lane et al., 2018). While studies exist demonstrating the validity and reliability of the measure (Lane, et al., 2012; Lane et al., 2015; Oakes et al., 2010; 2010) as well as predictability (Jones, 2019; Lane, et al., 2012; Menzies & Lane, 2012) of the deficit-based screener to recognize externalizing and internalizing behaviors, the researcher found no studies aligning the results of the measure to childhood predictive indicators (i.e. socioeconomic status, office discipline referrals, homelessness, absenteeism) and those often associated with internalizing and externalizing behavior problems.

### **School-Age Risk Factors Related to Mental Illness**

Mental health is “a state of mind characterized by emotional well-being, good behavioral adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life” (APA, 2020). Keyes (2007) indicates that mental health problems or mental illnesses are among the top five causes of life lost prematurely to death. “Early life stress has been shown to impact social behavior and functioning in human studies” (Brydges et al., 2019, p. 1). Positive mental health is critical for the long-term prosperity of society (Barry, 2009, as cited in Singh & Junnarkar, 2015). Children’s mental health and physical health affect how children feel, think, and act on the inside and the outside and their ability to succeed in school, among friends, and in the community (APA, 2020). Children with positive mental health have “the motivation to achieve, they establish positive relationships with peers and adults, they adapt to the complex demands of growth and development, they contribute to their family, peer group, school, and community,

and they make responsible decisions that enhance their health and safety” (Payton et al., 2000, p. 179).

Children who have a mental disorder, “any condition characterized by cognitive and emotional disturbances, abnormal behaviors, impaired function, or any combination of these” (APA, 2020), generally report having more insufficient school attendance, diminished physical health, and lower levels of resiliency (Keyes, 2007). While prevalence rates vary across the globe, approximately 12% of the world’s youth have a mental health disorder which is the leading cause of disability in children, “causing enormous economic costs to society as a whole” (Fatori et al., 2013, p. 1). The most common mental health conditions identified in childhood are Attention Deficit Hyperactivity Disorder (ADHD), behavior problems, anxiety, and depression (CDC, 2020a). Genetic risk is a term used to describe the likelihood of developing a specific illness or condition based on the contribution of genes, also known as hereditary. Common mental health conditions often run in families, including conduct disorder, bipolar disorder, depression, anxiety, suicide attempts, alcohol dependence, and schizophrenia (Achenbach et al., 1998; Brydges et al., 2019; Fatori et al., 2013; Jaffee et al., 2002). Early identification of mental health problems yields more favorable adult outcomes for children and is more cost-effective than treating a developed problem (Levitt et al., 2007).

A variety of childhood psychosocial risk factors have been associated with adult mental health disorders and with children and adolescents who experience mental health problems. Data regarding risk factors associated with childhood mental health problems are essential to early intervention and planning (Fatori et al., 2013). Consistently demonstrated in the research are risk factors that can be grouped into either genetic or psychosocial risk factors (Boynton-Jarrett et al., 2013; Brydges et al., 2019; Buckner et al., 1999; Fatori et al., 2013; Flannery et al., 2004; Jaffee

et al., 2002; Jokela et al., 2009). Psychosocial risk factors are cultural, social, and environmental influences that can impact mental health, including relationships, education, pressures, social situations, performance situations and interpersonal interactions, and social roles and status (APA, 2020).

This study explored the role psychosocial factors play in mental health as part of the registration, instructional, and assessment data collected by schools. The psychosocial risk factors of focus included student academic performance (Murphy et al., 2014; Suldo et al., 2013), absenteeism (Kearney & Graczyk, 2013; Morrissey et al., 2014), behavior (Göbel et al., 2016; Jokela et al., 2009), ethnicity (Fatori et al., 2013; DHHS, 2001), homelessness, (Buckner et al., 1999; Koegel et al., 1995), gender (Jaffee et al., 2002; Reinherz et al., 2000), office discipline referrals (Lane et al., 2012; McIntosh & Goodman, 2016), and socioeconomic status (Doll & Lyon, 1998; Fatori et al., 2013). Studies demonstrate that students who live in higher poverty, are of minority status, show more behavior concerns, attend school less often, or do not academically achieve are at an increased risk for developing a mental health problem as compared to peers (Blankertz et al., 1993; Brydges et al., 2019; Fatori et al., 2013; Jokela et al., 2009; Levitt et al., 2007; McLoed et al., 2012; Suldo et al., 2013).

### ***Socioeconomic Status***

Children who come from high-income homes tend to be more likely to perform better academically and socially than those who reside in more impoverished homes due to more available materials in the house and access to community experiences and interpersonal interactions (Morrissey et al., 2014). “Children belonging to low-income families are faced with an increased number of acute and chronic stressors” (Buckner et al., 1999, p. 246). Children who live in poverty are less likely to experience proper nutrition, housing stability, and time with

parents who are working nonstandard hours (nights and weekends) and are more likely to experience family dysfunction, physical and sexual abuse, neighborhood violence, and substance use and mental health problems by parents (Buckner et al., 1999; Morrissey et al., 2014). As shown in Table 3, all minority youth groups come from a disproportionate number of single-parent homes, and most of the groups disproportionately live in poverty or are homeless.

These economic-based stressors can impact a child's academic success by decreasing a child's ability to attend school, increasing the number of negative peer and adult influences, and raising the likelihood of adverse childhood experiences. "Children living in low-income families are more likely than their higher-income peers to experience physical, behavioral, and mental health problems (Currie, 2005; Evans & Kim 2007; Wentzel, 1991 as cited by Morrissey et al., 2014). Children living in low socioeconomic homes are less likely to have experiences that promote language and vocabulary development, and they are often home alone for extended periods without supervision or positive interaction (APA, 2020). The American Psychological Association states that socioeconomic status is a consistent and reliable predictor of various outcomes related to behavior and education. The researcher found many studies demonstrating socioeconomic status as a predictor of reduced outcomes (Marryat et al., 2017; Thomson et al., 2019; Vella et al., 2018). No studies were found quantifying socioeconomic level as a predictive quality of childhood internalizing and externalizing behaviors combined with other predictive factors of elementary-aged children.

### *Homelessness*

The McKinney-Vento Homeless Assistance Act of 2001 defines homelessness as “individuals who lack a fixed, regular, and adequate nighttime residence” (*McKinney-Vento Education for Homeless Children and Youths Program*, 2016, p. 2), which includes sharing a home, living in a hotel, campground, shelter, car, park, abandoned building, bus/train station, or are “abandoned in hospitals.” Out of every 10,000 Native people, 160 experience homelessness compared to 17 White Americans out of every 10,000 (National Alliance to End Homelessness, 2020). At some point in the 2017-2018 school year, more than 1.5 million students experienced homelessness (National Center for Homeless Education [NDHE], 2020). Students who are often homeless have inconsistent school attendance, are truant, fail to complete assignments, transfer schools, drop out, are placed in special education, or do not receive special education services for which they are eligible (Chittooran & Chittooran, 2010). While children are highly resilient, students experiencing homelessness have been shown to have higher levels of behavioral and emotional difficulties, such as depression, social anxiety, and aggression (Brydges et al., 2019), more physical health issues, and demonstrate less academic success (National Alliance to End Homelessness, 2020).

Buckner et al. (1999) demonstrated that homelessness, when a mother’s stress, gender, and age were all held constant, is a predictor of internalizing behavior problems in children. These researchers, confirming the work of their predecessors, found that children who were homeless more commonly experienced trauma in their lives, including out-of-home placement, physical abuse, and sexual abuse, when compared to housed children, and they demonstrated higher levels of internalizing and externalizing behavior difficulties. There was clear evidence in a study of homeless adults that childhood patterns extend into adulthood.

“Poverty, problematic role models, hints of damaging psychological experiences, general household strain, family dysfunction, and stress are all disproportionately present in the childhood backgrounds of homeless adults” (Koegel et al., 1995, p. 1647). Collectively, these findings demonstrate the concern schools must have for the emotional well-being of students, especially those who are boys, being raised in the unfavorable environment of homelessness. While homelessness repeatedly appears in the research as a risk factor for future mental health problems (Barnes et al., 2017; Gilroy et al., 2016; Haskett et al., 2015), no studies were discovered that used childhood homelessness as a predictor for internalizing or externalizing behaviors in elementary-aged students.

### ***Office Discipline Referrals***

The School to Prison Pipeline is a process in which youth in schools are criminalized through disciplinary policies and practices putting them in contact with law enforcement, thus pushing students out of schools and into the criminal justice system (Nocella et al., 2018). The policies and practices came out of legislative actions following a rash of school shootings in the 1990s to ensure safety on school campuses (Cole, 2020). These policies and practices “disproportionally impact the poor, students with disabilities, and youth of color, especially African Americans, who are suspended and expelled at the highest rates, despite comparable rates of infraction” (Nocella et al., 2018, p. 18). “Students who have been suspended or expelled are more likely to experience poor academic performance and eventually drop out [of school]” (The Advancement Project, as cited by Nocella et al., 2018, p. 31). Furthermore, Nocella describes the increased likelihood that schools rely on law enforcement to support school-based decisions to respond to minor behavior infractions such as disruption, talking back, and minor misbehaviors.

Office Discipline Referrals (ODRs) are “forms used to document events of unwanted behavior that require teacher or administrator intervention” (McIntosh & Goodman, 2016, p. 45). When school buildings standardize their ODRs, by defining the behaviors that constitute major behavior infractions, those requiring administrator involvement, versus minor behavior infractions, behavior incidents that can be managed by the student’s teacher, accuracy for use makes them a more reliable source for decision-making. ODRs on their own are insufficient for decision-making, considering teachers’ perceptions and biases influence racial disparity concerning school discipline, although they do not solely account for them (Rocque, 2010). ODRs gain more reliability when used in conjunction with other data sources (Sugai et al., 2000). As Sugai et al. (2000) indicated, that when ODRs are standardized across a school system with articulated policy and procedures and are used in conjunction with additional data points, they are less likely to be biased by race or ethnicity.

The school district in this study has enunciated through Administrative Policy 6310 – Student Behavior, Discipline, and Reporting (see Appendix C) descriptors and examples of minor and major behavior violations:

Minor violations may include, but are not limited to: inappropriate language, disruption, roughhousing, cheating, technology violation, physical aggression, teasing, work refusal, disrespect towards the property, dishonesty, dress code violation, disrespectful tone, attitude, or body language, running around the room, elopement, etc.

Major behavior violations may include, but are not limited to: inappropriate social media impacting the school day, terroristic threats, theft, vandalism of school or personal property, bullying/cyberbullying, possession of stolen property, extortion, discrimination/harassment, possession of a weapon, threats/intimidation/hazing,



fighting/physical assault, sexting, any violation of state or federal law, dress code violations that support hate, gang, or drug affiliations, etc. (Fargo Public Schools [FPS], 2020b, pp. 2–3).

Additionally, the district's policy provides investigative and disciplinary procedures that guide staff and administrators toward consistent documentation and response. The school principal is the chief investigator in all submissions of perceived major behavior violations. This protocol allows for the infraction to be reduced to a minor violation resulting from the investigation, thus aiding in the control of biased ODRs within the study (FPS, 2020b).

Childhood mental illness can change the way a child develops, behaves, and learns. “Research has consistently demonstrated that the vast majority of youth in contact with the juvenile justice system not only have diagnosable mental or substance use disorders but that many meet criteria for both as well as trauma-related disorders” (Coccoza et al., 2016, p. 22). Traumatic experiences in childhood can reduce a child's ability to concentrate, remember, organize, and produce language (Cole et al., 2005). Cole et al. (2005) further explained that the effects of traumatic stress on children cause them to be preoccupied with physical and psychological safety, thus impacting their ability to build and maintain relationships with peers and adults, process social cues, and convey feelings appropriately. The American Psychological Association (as cited by Coccoza et al., 2016) described the failure school policies have had in responding to school safety and student behavior as a means for the disproportionate number of youths with mental disorders ending up in the juvenile justice system.

ODRs are strongly aligned to students demonstrating externalizing behaviors. Using end-of-year ODR counts, 0-1 ODRs is a low indicator for intervention, 2-5 ODRs are a moderate indicator, and six or more suggest a strong predictor for additional intervention (McIntosh et al.,

2009, as cited by McIntosh & Goodman, 2016; Sugai et al., 2000). The researcher of this study intends to further the predecessors' works (Gregory, 2018; McIntosh & Goodman, 2016; Naser et al., 2018) by bringing additional childhood risk factors alongside the result of the office discipline referral to create a prediction of future behavior difficulties.

### ***Absenteeism***

School attendance affords students academic, language, and social opportunities that cannot be replicated beyond the institutional setting (Kearney & Graczyk, 2013). These opportunities provide peer interactions, instructional lessons, and activities that foster learning and typically result in better academic and social success (Morrissey et al., 2014). Chronic absenteeism, described as missing 10% of schooling for any reason during a given period (Balfanz & Byrnes, 2012), can prevent learners from reaching academic milestones, can be a predictor of future dropping out before graduation, and can be linked to poorer outcomes later in life (U.S. Department of Education, 2019).

Chronic absenteeism has long been studied in the later years of education as a student nears graduation; however, there are advantages to studying student absenteeism in elementary school to assist in identifying early intervening services for students (London et al., 2016). London et al. (2016) further described the importance of addressing and resolving the underlying barriers that may be interfering with student attendance to identify the type of support the student or family needs to improve attendance. "Mental health as assessed near the start of first grade independently predicted the percent of school days children went on to attend in first and third grade" (Murphy et al., 2014, p. 253). Factors correlated with chronic absenteeism include internalizing behaviors such as anxiety and depression and externalizing behaviors such as disruptive behavior disorders and family dysfunction (Kearney & Graczyk, 2013).

Students with a disability and those who are learning the English language are more likely to be chronically absent from school (U.S. Department of Education, 2016). The U.S. Department of Education further indicates that students in high school and those who are Black, Hispanic, American Indian, or Pacific Islander are at the most significant risk of chronic absenteeism. Persistent patterns of chronic absenteeism reveal severe consequences into adulthood “including economic deprivation and social, marital, occupational, and psychiatric problems” (Hibbett et al., 1990; Tramontina et al., 2001; US Census Bureau, 2005, as cited by Kearney & Graczyk, 2013). These outcomes create further urgency to research the interconnectedness of internalizing and externalizing behaviors with absenteeism as a predictor of future mental health risk and provide early intervening services to students (Blodgett & Lanigan, 2018; Eklund et al., 2017; Fornander & Kearney, 2020).

### **Theoretical Framework**

This study was grounded in two theories: the life course theory and the age-graded theory of social control. Life course theory is based on Urie Bronfenbrenner’s ecological systems theory and Ludwig von Bertalanffy’s general systems theory. The ecological system theory states that people are shaped, and they develop adaptations according to their environmental experiences over time, and the general systems theory emphasizes that human behavior is the result of the continual interaction among systems that affect the individual and the environment (Lu et al., 2018). Life course theory emphasizes how humans are interdependent and how their life story develops over time with a series of significant events, experiences, and transitions (Hutchison, 2005). Specifically, life course theory “calls attention to how historical time, social location, and culture affect the individual experience of each life stage” (Hutchison, 2005, p. 11), and “the timing of exposures and experiences during critical periods of development can influence life

trajectories” (Lu et al., 2018, p. 4). The most substantial evidence that life course theory furthers mental health and long-term outcome understanding comes from the studies of childhood trauma, occurring before the age of eleven, and adverse mental health outcomes (Aneshensel et al., 2013). Multiple studies demonstrate that as the number of adverse childhood experiences increases, the more likely adult mental health problems are to exist (Aneshensel et al., 2013).

The age-graded theory of social control by Sampson and Laub (1993) is based on the 1969 social control theory of Travis Hirschi. The age-graded theory of social control argues that crime and delinquency result from weak bonds to society, and it acknowledges that experiences in childhood affect experiences in adolescence and adulthood (Sampson & Laub, 1993). Schools may act as a turning point in the life course, where developing a commitment to education and repeated positive experiences allow for prosocial behavior development. Serious childhood behavior problems, however, “do not inevitably lead to mental illness in adulthood” (Aneshensel et al., 2013, p. 596). For these reasons, it is critical to continue studying childhood factors that can potentially reduce outcomes to provide skills and supports to aid in shifting the trajectory.

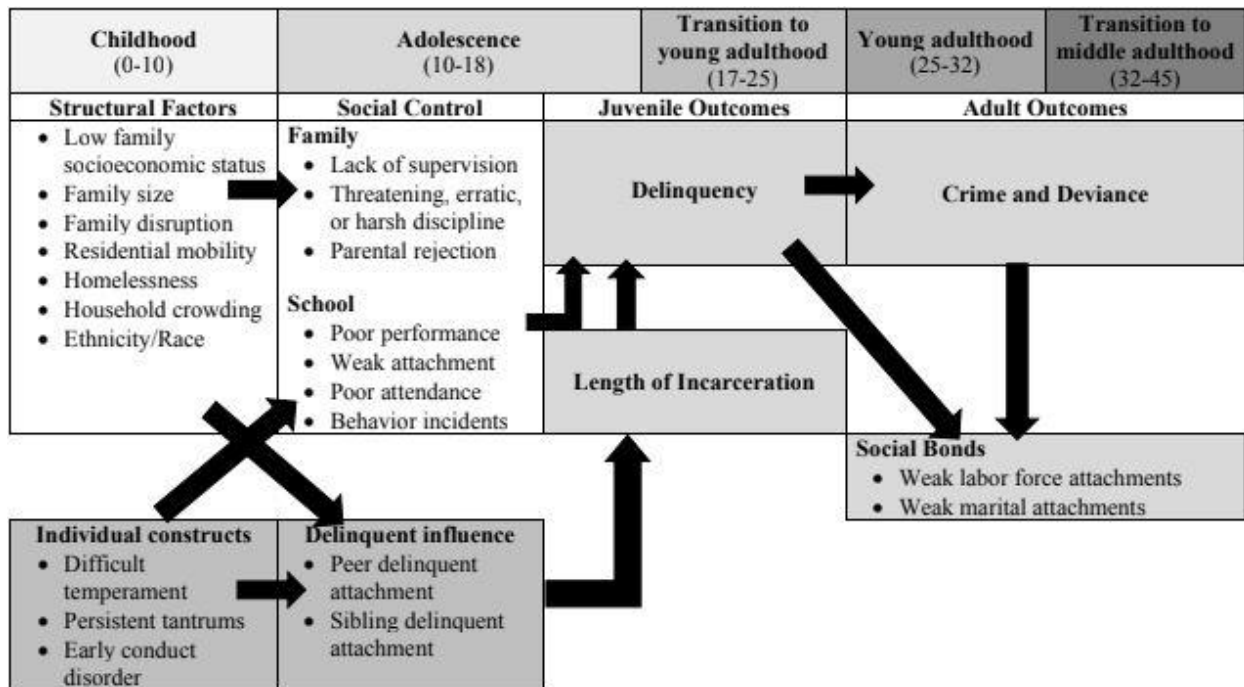
Figure 2 shows the age-graded theory of social control integrated with the life course theoretical framework. With the life course theory’s central concepts of transitions and trajectories, Sampson and Laub (1993) demonstrated that structural factors in childhood, combined with reduced social control in adolescence, are likely to lead to juvenile delinquency and adult crime. The critical component of the theory is that crime and delinquency have an inverse relationship with an individual’s bond to society, making schools one of the fundamental social structures for influencing behavior (Sampson & Laub, 1993).

Guided by the life course theoretical framework and the age-graded theory of social control, the researcher aimed to determine the social and structural factors, independently or in

combination, that presented the most significant mental and behavioral health risk to elementary-aged children for the provision of early identification and intervening services. With early intervention, students are better equipped to gain mastery of social-emotional skills, develop coping strategies, and cultivate and maintain social and personal relationships. When these areas are developed, adolescents and adults are better equipped to navigate stressors and break the cycle of multigenerational mental health struggles.

**Figure 2**

*Age-Graded Theory of Social Control and the Life Course Theory Integration*



Source. Lu et al., 2018; Sampson & Laub, 1993.

**Hypothesis Null Hypothesis Statement:** There is no correlation between the composite score of the SRSS-IE and the student risk factors composite score.

**Alternative Hypothesis Statement:** There is a correlation between the composite scores of the SRSS-IE and student risk factors composite score.

## **Research Questions**

### ***Primary Research Question***

To what degree does the risk factors composite score predict the composite score of the SRSS-IE by ethnicity and gender?

### ***Secondary Research Questions***

1. What is the correlation between the SRSS-IE internalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?
2. What is the correlation between the SRSS-IE externalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?

## **Conclusion**

Many children are born into psychosocial environments that may perpetuate the likelihood of mental health struggles making it challenging to understand the emotions of others, positively contribute to the community, and cope with life's challenges. Others may be born with emotional conditions that have been inherited from a previous generation or are a result of a tragic event, while still others may struggle with mental well-being due to unclear reasons. Early identification of students who may be at-risk for mental health difficulties is critical to their academic achievement and social-emotional development. Research indicates that 20-25% of the

United States' 74.1 million children and adolescents have symptoms of a mental health condition, but only 0.5-15% of these children access mental health services (Singh & Junnarkar, 2015). In 2005, the World Health Organization (WHO) indicated that half of all reported mental illnesses began by the age of 14, and three-fourths began by the person's mid-20s. Because this statement refers to *reported cases*, it can be inferred that there are more people in the country suffering from symptoms of mental illness when non-reported situations are included (Leschied et al., 2019). Children who experience mental health difficulties are often raised in higher poverty homes where access to services is more limited, resulting in more family dysfunction and less effective parenting (Buckner et al., 1999). Furthermore, adults who experienced behavioral and emotional challenges as children are "more likely to engage in illegal or violent behaviors with increased rates of adult antisocial personality disorder and demonstrate higher rates as violent offenders, domestic violence offenders, child abusers, and sexual offenders" (Stinson et al., 2016, p. 14). Without early intervening services, these children are likely to perpetuate the circumstances for their children as they become parents (Doll & Lyon, 1998).

The focus of this study was to build upon preexisting research. There is a clear and urgent need for schools to continue their efforts toward prevention and early identification of symptoms related to mental health concerns to shift the trajectory of students who may be at risk for future well-being complications. While universally screening students two to three times each year provides an indicator of potential student needs, the opportunity to use the research-revealed predictive characteristics as a model for ongoing monitoring expedites opportunities for early intervening services for elementary-aged students. The following chapter describes the methods for the development of predictive criteria using non-academic data.

### Chapter 3: Research Methods

Building a foundation for mentally healthy adults begins in childhood. Half of the diagnosed psychiatric disorders have an onset before fourteen years of age and persist into adulthood (World Health Organization [WHO], 2005). Research has revealed established childhood conditions that are risk factors for adult mental health problems, including child gender-specific issues, family income, ethnicity-specific issues, child temperament, parenting style, and parent mental health (Vella et al., 2018). Other factors linked with mental health-related problems may also predict the overall risk for adulthood mental health problems.

“Physical activity, sports participation, sleep duration, diet, and body mass index have been associated with mental health-related problems” (Vella et al., 2018, p. 143). Often there is no single cause for a mental illness; instead, factors including early life experiences, chronic medical conditions, biological considerations, daily routines, and social relationships contribute to mental illness risk (Centers for Disease Control and Prevention [CDC], 2019).

Because there is no biological marker for mental health and medical professionals cannot test for it like physical illnesses, diagnosing a mental illness is complex and not always straightforward. Each mental illness has its own set of unique symptoms, although the symptoms often overlap and can include feeling sad for more than two weeks, out-of-control behavior that can cause personal harm or harm others, sudden overwhelming fear for what appears to be no reason, drastic mood, personality, behavior, or sleep changes, or extreme difficulty concentrating or staying still (National Alliance on Mental Illness [NAMI], 2020). The observable symptoms are often categorized into two groups of behaviors: internalizing and externalizing (American Psychological Association [APA], 2020).



Providing early intervening services for children who may be at risk for adolescent and adult mental health struggles requires reviewing commonly associated childhood risk factors of students demonstrating difficulties with externalizing and internalizing behaviors compared to the students who do not demonstrate struggles with these behaviors. The risk factors explored in this study consistently appeared in the research literature for adults who have been diagnosed with a mental illness and children who have exhibited extensive internalizing or externalizing behaviors. The purpose of this study was to determine the predictive value that childhood risk factors (i.e., socioeconomic status, homelessness, office discipline referrals, absenteeism, and academic performance) had on children's internalizing and externalizing behavior scores. The findings can be used to better design and implement intervening services to be delivered before the onset of any internalizing and externalizing problems.

A multitude of studies exists that identified characteristics, factors, and conditions that were consistently reported in the childhood years of adults with mental illnesses (Boynton-Jarrett et al., 2013; Flannery et al., 2004; Jokela et al., 2009; Kearney & Graczyk, 2013; Ligier et al., 2020; Marryat et al., 2017; Morrissey et al., 2014; Vella et al., 2018). These studies were critical to confidently and consistently identify the factors and conditions related to adult mental illness and required a retrospective lens following a diagnosis. Similarly, studies identified characteristics, factors, and conditions that consistently reported an association between children and adolescents who exhibited internalizing and externalizing behaviors (Blankertz et al., 1993; Buckner et al., 1999; Fatori et al., 2013; Göbel et al., 2016; Jaffee et al., 2002; Lane et al., 2012; McLeod et al., 2012; Suldo et al., 2013). The characteristics, factors, and conditions from both sets of studies were similar and required the human subject to be affected by or display the behaviors. From a proactive and preventative response perspective, it was never been more

necessary to correlate the childhood risk factors with the behaviors to uncover predictive criteria. Filling this gap in the current literature allows earlier intervention to favorably influence children's mental health trajectory. This chapter describes the process that was used to gather and analyze the information and data.

## **Hypothesis**

### ***Null Hypothesis***

There is no correlation between the composite score of the SRSS-IE and the student risk factors composite score.

### ***Alternative Hypothesis Statement***

There is a correlation between the composite score of the SRSS-IE and the student risk factors composite score.

## **Research Questions**

### ***Primary Research Question***

To what degree does the risk factors composite score predict the composite score of the SRSS-IE?

### ***Secondary Research Questions***

1. What is the correlation between the SRSS-IE internalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism?
2. What is the correlation between the SRSS-IE externalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?

## **Research Design**

Under the positivistic paradigm, this quantitative retrospective correlational study conducted secondary data analysis on existing behavioral health data from elementary-aged students. The study sought to determine the correlation between various childhood mental health risk factors and the Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE) scores in a group of elementary-aged students. Bivariate correlations and regression analyses were conducted to explore the relationship between the childhood mental health risk factors and the SRSS-IE composite scores. “If a relationship of sufficient magnitude exists between two variables, it becomes possible to predict a score on one variable if a score on the other variable is known” (Fraenkel et al., 2019, p. 327). Such relationships were reviewed to determine whether a single childhood risk factor or a combination of them could be used to predict SRSS-IE composite scores.

### ***Threats to Internal Validity of Correlational Research***

When internal validity exists in a research study, it means “that any relationship observed between two or more variables should be unambiguous as to what it means rather than being due to ‘something else’” (Fraenkel et al., 2019, p. 161). Recognizing that without controlling for the “something else,” the researcher cannot be sure that the results are not influenced by it. First, location threat, “the particular locations in which data are collected...may create alternative explanations for results” (Fraenkel et al., 2019, p. 164), is important to be described in this study. While it was expected that teachers were trained and provided time to complete the SRSS-IE during a required staff meeting, this did not occur in all buildings, nor were all staff members present in buildings where it did happen. In these cases, staff may have been asked to find

another time (e.g., during a preparatory period, after school, on the weekend) to complete the screening.

Secondly, data collector bias, unconscious distortion of the data that make specific outcomes more likely, is another threat to the internal validity of correlational research (Fraenkel et al., 2019). While a training video was provided to all teachers, there was no certainty that it was used in all locations and building leaders presenting the training may have added commentary that potentially influenced teachers' assessment process, swaying the scoring. Additionally, interactions between the teacher and the students near screening run the risk of exaggerated scores based on emotion.

Subject characteristics threat is the third threat to the internal validity of correlational research that the researcher must acknowledge. Subject characteristics threat refers to the people in a study differing from one another in ways related to the variable (Fraenkel et al., 2019). In this study, this may mean that factors that students experienced, other than those being studied, might have contributed to the results.

Instrument decay and data collector characteristics are the final threats to internal validity in a correlational study. Instrument decay is when instruments are changed, and data collector characteristics present a threat when the data over time is collected by different people (Fraenkel et al., 2019). Multiple people collecting data and changes to the data collection instruments run the risk of diversified data collection and results.

### **Setting**

The Fargo Public School District, founded in 1872, was the only public school district in Fargo, ND. Operating under the mission of achieving excellence by *educating and empowering all students to succeed*, the Fargo Public School (FPS) district was committed to “believing that

all students can learn and grow, creating a supportive and positive school climate, ensuring that all students received effective, rigorous, and relevant instruction from highly qualified teachers, engaging leadership in all student, parent, and community partnerships, and making data-driven decisions for continuous improvement” (Fargo Public Schools [FPS], 2019, p. 2). The district was accredited through Cognia, a worldwide, non-profit, non-partisan organization that conducts rigorous, on-site reviews of schools and school systems, to ensure that all learners realize their full potential (Fargo Public Schools [FPS], 2020a).

FPS employed nearly 2,000 employees, and it was the fourth largest employer in the metro area. Fifty-three percent of the employed staff were teachers, and 62% had been teaching for ten years or more (FPS, 2020a). In the Annual Report, FPS (2020a) indicated that 67% of their teachers had a degree beyond a bachelor's degree. The district employed one school counselor for every 250-300 students, seven school psychologists, and twelve licensed social workers who worked directly with students and families to access mental health services and overcome barriers to education (Fargo Public Schools [FPS], 2020b).

The school district was amid a K-12 implementation focused on trauma-informed practices, behavior, and mental health. Striving toward a trauma-informed district, FPS was implementing restorative practices, positive behavior interventions and supports (PBIS), social and emotional learning curriculum, restraint-free response to crises, and on-site, co-located, and telehealth clinical therapy services for students (FPS, 2020a).

The district was comprised of about 11,200 students, and class sizes were maintained at about 20 students per class in the elementary and high schools and 24 students per class at the middle level (FPS, 2020a). Among the students in the district, there were 88 languages spoken, and 8% of students were English Learners (FPS, 2020a). The Annual Report provided by the

Fargo Public Schools (2020a) indicated that 11% of students received gifted or enrichment services, 14% received special education services, less than 1% were homeless, and 33% of students received free or reduced lunch.

The elementary enrollment included 3,300 students attending fourteen unique kindergarten through fifth grade schools. Approximately 52% of the students were male, and 29% of the elementary school enrollment received free or reduced lunch. Nine percent of the elementary enrollment was comprised of English Learners, and 13% had been identified for special education. Most students in the school district were White (70%) followed by Black (13%), Hispanic (6%), Asian (4%), Native American (3%), Pacific Islander (0.2%), and multi-race (4.3%) (FPS, 2020b).

This study occurred in Fargo, North Dakota, one of the largest cities in the state with a population exceeding 121,000. According to the U.S. Census Bureau (2020b), the median household income in Fargo was \$55,551, and there was a 13.2% poverty rate. Furthermore, more than 84% of the city's population was White, 7% were Black, 1% were American Indian or Alaska Native, 4% were Asian, and 3% were multi-racial, and 94% of the city's population had a minimum of a high school diploma (U.S. Census Bureau, 2020a).

Fargo was situated in Cass County, which had a 380:1 ratio for mental health providers compared to the state's proportion of 570:1 (Fargo Cass Public Health [FCPH], 2019). In 2019, FCPH indicated that 6.9% of the adult population in the county was uninsured, compared to a rate of 8.8% in the United States, and Cass County had the second-lowest rate of uninsured 19 years of age and younger youth in the state at 5.2%. In 2018, 1,088 reports of child abuse and neglect were reported in the county, making up about one-fourth of the state reports (FCPH, 2019). Suicide was the leading cause of death in the county for people between the ages of 15

and 24 from 2013 to 2017, whereas it was the second leading cause of death in the state behind “unintentional injury” (North Dakota Department of Health [NDDoH], 2019). Results of the 2017 Youth Risk Behavior Survey administered to high school students in the southeastern region of the state demonstrated that 11% of the respondents had made a suicide plan and 12.5% attempted suicide one or more times in the year before responding to the survey compared to the state’s 14.5% and 13.5% respective results. (FCPH, 2019).

### *Participants*

Because the SRSS-IE is a universally used screening instrument, this study included all fourth and fifth grade students who attended Fargo Public Schools in the spring of the 2020-2021 school year and had spring SRSS-IE scores. Grades 4 and 5 are the oldest grade levels in the district’s elementary schools, and the SRSS-IE was used in the school district only in the elementary schools. The two grade levels were selected for the study in order to have the necessary data to run multi-year retrospective correlations to determine relationships of risk factors over time to the current year’s SRSS-IE, the mental health measure.

Since the screener required being in a teacher’s classroom for approximately four weeks before the screening process could occur, any students who moved into the school within that timeframe would not have been screened nor have screening results. Similarly, classrooms of students who had a long-term substitute or who had not been in the position for about four weeks were not screened since the new teacher had not had enough time to get to know the students properly.

According to the district’s intranet, there were 1,729 students in the fourth and fifth grades in the spring of the school year, with 49.6% being female and 50.4% male (Fargo Public Schools [FPS], 2021b). Seventy-one percent of the students were White, 13% were Black, 4%

were Hispanic, 3% were Asian, 2% were American Indian, and 6% were multi-race (FPS, 2021). Of the students in the fourth and fifth grades, 35% received free or reduced lunches, 9% were English Learners, 18% received special education services, and 16% received gifted services (FPS, 2021). In response to the COVID-19 pandemic, all students in the school district received free meals for the entire school year through grant funding awarded by the U.S. Department of Agriculture (USDA) during the 2020-2021 school year. However, the percentage of fourth and fifth grade students eligible for free and reduced lunches in 2020-2021 (35%) was the same as the 2019-2020 school year (FPS, 2021b).

### ***Sampling Procedures***

Sampling was unnecessary for this study since the entire FPS fourth and fifth grade population in the 2020-2021 school year were considered participants. The external validity of the results applies only to students in the Fargo Public School district.

### ***Instrumentation***

The Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE; see Appendix A), developed by Lane et al. (2012), is an adapted measure of the Student Risk Screening Scale (SRSS) developed initially by Drummond (1994). In its original version, the SRSS was “a free-access, brief, systematic screening tool developed to detect elementary-age youth with antisocial tendencies” (Lane et al., 2015, p. 159) or externalizing behaviors. The SRSS-IE was developed to expand the tool's scope to include items characteristic of internalizing behaviors (Lane et al., 2015). According to Lane et al. (2015), the results from the original version, SRSS, and the expanded version, SRSS-IE, are deficit-based screeners used to determine the types of support (strategic or intensive) students may require, in addition to monitoring risk level over time. The SRSS-IE has been validated among diverse populations of



elementary students in both rural and urban school districts (Lane et al., 2012; Lane et al., 2018; Lane et al., 2012; Lane et al., 2015; Menzies & Lane, 2012; Oakes et al., 2010; Schatschneider et al., 2014).

The SRSS-IE is a twelve-item Likert-scale questionnaire completed by the classroom teacher for each student individually. The instrument takes approximately 10-15 minutes to complete for an entire class, depending on the number of students. It is only completed for students who have been enrolled in a class for a minimum of four weeks. The teacher responds with “never,” “occasionally,” “sometimes,” or “frequently” to seven externalizing behaviors including steal; lie, cheat, sneak; problem behavior; peer rejection; low academic achievement; negative attitude; and aggressive behavior, and to five internalizing behaviors including emotionally flat; shy, withdrawn; sad, depressed; anxious; and lonely. A composite score is available for the comprehensive screener; however, as shown in Table 12 the risk level is determined by the individual domains of internalizing and externalizing behaviors indicating students who are low-risk (0-1 internalizing; 0-3 externalizing), moderate-risk (2-3 internalizing; 4-8 externalizing), or high-risk (4-15 internalizing; 9-21 externalizing) for internalizing and externalizing behavior problems. The classroom teacher can use the results of the SRSS-IE to inform class-wide social-emotional instructional decisions. The results may also be used as part of the MTSS framework to identify students within the classroom or the school who may benefit from small group, early intervening social-emotional skill services.

**Table 12**

*SRSS-IE Risk Levels*

Behavior Domain	Low Risk	Moderate Risk	High Risk
Internalizing	0-1	2-3	4-15
Externalizing	0-3	4-8	9-21

Studies have demonstrated the reliability of the SRSS-IE with strong consistency ( $> .80$ ) and test-retest stability (.86) for ethnically, culturally, and economically diverse elementary-aged students (Lane et al., 2009, as cited by Lane et al., 2012; Oakes et al., 2010). Convergent validity ( $r = .79$ ) was established through a correlation study using the Strengths and Difficulties Questionnaire for externalizing ( $r = .75$ ) and internalizing ( $r = .49$ ) (Lane & Oakes et al., 2012). Validity and reliability coefficients for the specific grade levels of this study were not found. Test-retest reliability ranged from .71 to .80 and was statistically significant ( $<.0001$ ) (Lane et al., 2012). “Among children and adolescents, internalizing and externalizing problems are the most common mental health problems” (Göbel et al., 2016, p. 2), affirming that universal screening to identify students who may be at risk for mental health problems is critical.

PowerSchool was the student information system used by FPS. Within PowerSchool, parents registered their children for school, provided demographics and contact information, and completed necessary school forms. PowerSchool was the tool in which students’ grades, attendance, lunch status, discipline, and formal documentation to create an electronic cumulative record were housed throughout the year. In the Fargo Public Schools, the information entered in PowerSchool was exported into the district’s database to be combined with other database information to display aggregated and disaggregated results. The same procedure occurred to combine PowerSchool data with the SRSS-IE data.

## **Data Collection**

### ***Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE)***

For universal screeners to be helpful to the school and strong predictors of relevant outcomes, the screening data must be collected systematically (von der Embse et al., 2018). The universal screening process for this study provided a three-week window in April for screening

with the SRSS-IE. Before classroom teachers completed the SRSS-IE for all students in their class who had been in attendance for a minimum of four weeks, they attended an overview training to further their knowledge and understanding of mental health screening and early intervening services. This information was to be shared with certified teachers after school during a staff meeting. Teachers received explicit instructions for completing the questionnaire, and the screening occurred as part of the allotted training, providing dedicated professional time for consideration and objective responses. Because the SRSS-IE is very brief, screening a classroom of students took approximately 20 minutes (Lane et al., 2012), and the entire training and screening were completed in 45 minutes. Teachers unable to attend the staff meeting when this occurred were requested to meet with the building leader independently to be provided the same information and allotted screening time. The teacher scored the questionnaire online, and the student results were immediately captured in a database. Students screened in the “high” or “moderate” risk categories on the composite, internalizing, or externalizing scales of the SRSS-IE were entered into the regression analyses.

### ***Student Risk Factors***

For this study, because of extensive research around childhood risk factors for mental illness and excessive internalizing and externalizing behaviors, the included student risk factors were office discipline referrals, socioeconomic status, academic performance, homelessness, and absenteeism. The school staff documented minor and major behavior incidents per school year in PowerSchool. The total number of major behavior incidents was used to quantify office discipline referrals. This study relied on the finalized major behavior incidents or Office Discipline Referrals (ODRs). Per the school district’s administrative policy (see Appendix C, major behavior violations are turned over to the building principal for investigation (FPS,

2020b). Suppose a teacher-submitted major behavior violation was found through the investigation to be a minor violation. In that case, the principal could overturn the submission and work with the teacher to provide the necessary support to further understanding. If the investigation confirmed that the violation was congruent with the policy's description of major behavior violations, the principal utilized the policy's guidance to respond to the behavior, diminishing the chances of biased behavior reporting (FPS, 2020b).

The school lunch program fee was used as a proxy for socioeconomic status. Socioeconomic status was set by "paid," "free," or "reduced" lunch in PowerSchool. A "free" or "reduced" classification was made when the student's guardian applied for the diminished rate to the district's nutrition services department. Teachers and office staff reported and recorded student attendance and absences in PowerSchool. While PowerSchool holds student progress report data, for this study, academic performance was represented by the student's spring overall proficiency index (OPI). The OPI (see Appendix B) was a district-developed calculation of the student's academic risk level based on the student's spring assessment scores. The OPI allowed schools to view proficiency and growth across grade levels when assessments administered at each grade level were not identical.

Each of the student risk factors received a score that was used to create a risk factors composite score. Once the information was downloaded from the district's databases, the raw data for each risk factor was changed according to the following described coding strategy, summarized in Table 13, with twelve being the maximum possible points per student. Socioeconomic statuses of free received 2 points for each year, reduced paid lunch was assigned 1 point per year, and paid received 0 points. Office discipline referrals of 6 or more received 2 points per year, two to five referrals per year received 1 point, and less than two referrals

received 0 points (McIntosh & Goodman, 2016). According to McIntosh and Goodman (2016), students accumulating six or more office discipline referrals by the end of the year is a strong indicator that Tier 3 (intensive) support is needed. For academic performance, as described by the school district’s overall proficiency index (OPI), students whose OPI score was less than 3.0 received 2 points, an OPI of 3.0 to 4.9 were assigned 1 point, and those scoring 5.0 or higher received zero points. If a student was homeless for six or more months of the school year, they received 2 points, homelessness for two to five months received 1 point, and students who had been homeless for less than two months received zero points. Research has demonstrated that homelessness for any length of time can negatively impact behavior and mental health outcomes, and prolonged homelessness compounds the potential effects (Buckner et al., 1999). Finally, in a school year, if students were absent for 10% or more of the assigned school days, they received 2 points. One point was assigned to students who were absent 3-9.9% of the school days, and 0 points were assigned to students who missed less than 3% of the assigned school days (Change & Romero, 2008, as cited by Morrissey et al., 2014).

**Table 13**

*Student Risk Factors Scale*

Risk Factor (maximum = 12)	2 points	1 point	0 points
Absenteeism	10%+	3-9.9%	<3%
Office Discipline Referrals	6+	2-5	< 2
Socioeconomic Status	“Free”	“Reduced”	“Paid”
Homeless	6 months+	2+ - <6 months	< 2 months
Reading Performance	OPI <3.0	OPI 3.0-4.9	OPI 5.0+
Math Performance	OPI <3.0	OPI 3.0-4.9	OPI 5.0+

All data used in this study were collected in the spring of 2021, one year following the COVID-19 pandemic outbreak. Every person within the school setting was impacted by the pandemic through less interaction with one another (e.g., maintaining social distance, quarantine,

death of a loved one). The environmental conditions for many students in the year following the onset of the pandemic likely influences risk factors data with increased student absences, more family housing instability, more community substance use and abuse, and increases in reported domestic violence and child maltreatment. Finally, the shifts in the educational setting to nimbly respond to the fluid guidance provided by the Centers for Disease Control likely played an influencing role in the data used in the study (e.g., less face-to-face direct instruction between teachers and students, local decision making for reporting student absences, increased substitute teachers or class sizes to cover for absent teachers). While the decision to use these data for the study was supported by the research, the collection of it during a pandemic added moderating factors.

### **Data Analysis**

“The most meaningful research is that which seeks to find, or verify, relationships among variables” (Fraenkel et al., 2019, p. 198). Previous studies have demonstrated relationships between childhood risk factors such as homelessness, socioeconomic level, and attendance or absentee rates (Essex et al., 2009; Göbel et al., 2016; Wyman et al., 2010). Data analysis included detailed descriptive statistics, including measures of central tendency and measures of dispersion, as well as Spearman rho’s correlations, linear, and multiple regression analyses to determine the relationships among the variables. Statistical assumptions for Pearson Product moment correlation were checked before running the inferential statistics tests. Specifically, the level of measurement, related pairs, absence of outliers, and linearity were explored. Because the assumptions were violated, the Spearman rho’s correlation was used, which is the nonparametric equivalent to the Pearson Product moment correlation.

Once verified, the degree of the relationship between each of the predictive variables and the overall, internalizing, and externalizing subscale scores were determined, represented by the Spearman's rho correlation coefficient. The closer the correlation coefficient was to  $\pm 1.00$ , the stronger the relationship was between the variables. The predictive qualities of the relationships between each of the childhood risks and the scores of the SRSS-IE were determined using scatter plots. As previously addressed in this chapter, it was essential to control for threats to internal validity since research indicates the childhood risk factors in this study may affect one another (Fraenkel et al., 2019).

### **Research Questions and System Alignment**

Table 14 describes the alignment between the study research questions and the methods used in this study to ensure that all study variables were accounted for adequately. Table 15 summarizes the data analysis.

**Table 14**

*Research Question Alignment*

Research Questions	Paradigm	Design	Variables	Instruments	Validity/ Reliability	Technique	Source
RQ1 To what degree does the risk factors composite score predict the composite score of the SRSS-IE?	Quantitative	Correlational (statistical analyses: Spearman’s rho, linear and multiple regression, and descriptive statistics)	OV: SRSS-IE composite score  PV: childhood risk factors composite score	SRSS-IE items 1-12  School district database	$r_v = .79$ $r_r = .83$	Pre-existing data	PowerSchool and SRSS-IE district databases (accessed via district administrators)
RQ2 What is the correlation between SRSS-IE externalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism?	Quantitative	Correlational (statistical analyses: Spearman’s rho, linear and multiple regression, and descriptive statistics)	OV: SRSS-IE externalizing score  PV: socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism	SRSS -IE Items 1-7  School district database	$r_v = .75$ $r_r = .84$	Pre-existing data	PowerSchool and SRSS-IE district databases (accessed via district administrators)
RQ3 What is the correlation between SRSS-IE internalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism?	Quantitative	Correlational (statistical analyses: Spearman’s rho, linear and multiple regression, and descriptive statistics)	OV: SRSS-IE internalizing score  PV: socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism	SRSS -IE Items 8-12  school district database	$r_v = .49$ $r_r = .72$	Pre-existing data	PowerSchool and SRSS-IE district databases (accessed via district administrators)



**Table 105***Data Analysis*

Research Question	Data Analyses
<p><b>RQ1</b> To what degree does the risk factors composite score predict the composite score of the SRSS-IE?</p>	<p>Spearman's rho correlation Regression Analyses Descriptive Statistics: Measures of central tendency and measures of dispersion</p>
<p><b>RQ2</b> What is the correlation between SRSS-IE internalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism?</p>	<p>Spearman's rho correlation Regression Analyses Descriptive Statistics: Measures of central tendency and measures of dispersion</p>
<p><b>RQ3</b> What is the correlation between SRSS-IE internalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism?</p>	<p>Spearman's rho correlation Regression Analyses Descriptive Statistics: Measures of central tendency and measures of dispersion</p>

**Procedures**

In October 2020, a discussion about this study and the implementation of universal screening for internalizing and externalizing behaviors occurred with the elementary school principals and instructional coaches in the Fargo Public School district. Before the 2019-2020 school year, one building had participated in a pilot of SRSS-IE universal screening. SRSS-IE screening was open for three weeks in October and April of the 2020-2021 school year. The results of the spring screening window were used in this study.

A training video for teachers was developed and viewed with principals and instructional coaches in a train the trainer model of information dissemination at the start of each screening period. The expectation was that principals or instructional coaches would view the training with staff on the day of screening and be prepared to answer any questions or contact the data analysis

department if they could not answer. The first portion of the training video described universal and systematic screening for internalizing and externalizing behaviors and the purpose of the SRSS-IE. The middle part of the training video had directions for completing the screener, including how to rate each student entirely going horizontally, before moving on to the next student. Conversations among teachers about a particular student were not allowed to determine a rating, per the assessment protocol. The final segment of the training video explained ways in which the teacher, grade level, and building could use the anticipated results for individual student intervention, class intervention, and school-wide PBIS planning and monitoring of progress.

Immediately following the viewing of the training video, teachers completed the SRSS-IE before being dismissed from the meeting. The school district developed an electronic interface of the SRSS-IE (see Appendix A) that allowed teachers to enter their screening scores online. Built by the district's data analysis department, electronic entry of the scores into the district's database allowed results to be immediately available on the SRSS-IE Reporting page per student, classroom, and grade level. Electronic entry permitted analysis of results for intervention planning and monitoring progress to occur without delay.

At the close of the school year, an export from the school district's database ensured the childhood risk factor data were collected in their entirety, and the spring SRSS-IE scores were captured. The childhood risk factor data, including homelessness, socioeconomic level, attendance, office discipline referrals, academic performance, gender, ethnicity, and grade level, were extracted for the correlational study. Classroom teachers and schools had access to their completed screening results to plan Tier 1 classroom social-emotional skills instruction,

determine groups of students who may benefit from strategic interventions, and monitor progress throughout the following year.

Classroom teachers completed the screening of their students during the spring of 2021 when the student had been part of the classroom community for the previous four to six weeks. It is worth noting, once again, that the 2020-2021 school year was anything but typical due to the COVID-19 pandemic. The structure of the school day was moderated by mitigation strategies, student and teacher absences were higher than normal due as a result of illness and required close contact quarantining, and everyone experienced increased emotional stress.

### **Ethical Considerations**

The purpose of this study was to examine the potential alignment of the SRSS-IE with childhood risk factors commonly associated with long-term mental health difficulties, with the hope of creating predictive criteria to align early intervening services for students. The teacher completed the SRSS-IE, and the student's risk factors data were captured from the school district's database. Therefore, interaction directly with students or their parents for this study did not occur. The teacher training reviewed ethical practices of the use of universal screening data, the importance of confidentiality under FERPA, and the intended use of the results on an individual basis. All student information was assigned a random code matching the student identification numbers, but the student identification was not used.

### **Conclusion**

This study was designed using quantitative retrospective correlation to investigate the relationship of childhood risk factors associated with overall, internalizing, and externalizing behavior problems and long-term mental health problems to develop predictive criteria for providing early intervening services. Data collected were for fourth and fifth grade students in

the spring of the 2020-2021 school year through the SRSS-IE and risk factor data. Their retrospective childhood risk factor data from the 2018-2019 and 2019-2020 school years were also collected. Ethical considerations of the well-being of participants were maintained by a blind study design and the use of random identifiers attached to the data.

## Chapter 4: Results

Mentally healthy adults can adapt to conditions in the presence of stressors, function favorably in social environments, work productively, and contribute to the community (Pearlin, 2009; World Health Organization [WHO], 2018). Adults who are mentally healthy function more superiorly in all aspects of their lives, including intimacy, work attendance, physical health, and resiliency (Keyes, 2007). Research has indicated that children who persistently demonstrate childhood behaviors that contradict the social norm, such as aggression, disregard for authority, and lack of empathy, are likely to perpetuate the behavior pattern into adulthood, which can lead to adverse outcomes including excessive alcohol consumption, child and spousal abuse, and criminal acts (Brydges et al., 2019; Jokela et al., 2009; Sampson & Laub, 1993; Sellers et al., 2019).

Childhood factors that impact school-aged students who demonstrate higher levels of internalizing and externalizing behavior difficulties include socioeconomic status, office discipline referrals, low academic achievement, homelessness, high student mobility, low attendance rates, age, minority status, and gender (Doll & Lyon, 1998; Göbel et al., 2016; Wyman et al., 2010). Genetic conditions and parenting deficiencies can increase the likelihood that a child will develop mental health struggles (Doll & Lyon, 1998; Jokela et al., 2009). Doll and Lyon (1998) and Jokela et al. (2009) also indicate children who have undiagnosed or untreated mental health conditions often perpetuate the cycle of mental health problems which can lead to premature mortality.

Building a foundation for mentally healthy adults begins in childhood. “Previous life-course research of childhood problem behaviors and psychiatric vulnerability has established connections between childhood psychosocial maladjustment and a wide range of negative

outcomes later in life. ...Problem behaviors expressed in childhood may carry a heightened risk of mortality over the life course” (Jokela et al., 2009, p. 24). By analyzing correlations between internalizing and externalizing behaviors often associated with mental health problems and the childhood risk factors regularly associated with mental health conditions, the potential exists to determine preventative and proactive intervention before a decline in such behaviors is exhibited.

### **Purpose of Study**

This study set out to determine the predictive value childhood risk factors (i.e., socioeconomic status, homelessness, office discipline referrals, absenteeism, and academic performance) have on the results of the SRSS-IE for students in fourth and fifth grades in a Midwest urban school district. This quantitative correlation research design study sought to estimate the predictive value the childhood risk factors had on the results of the SRSS-IE through a regression analysis of secondary data. The identified childhood risk factors have been identified through research to be commonly associated with long-term, adult mental health conditions (Ballard et al., 2013; Essex et al., 2009; Guzman et al., 2011; McLeod et al., 2012; Suldo et al., 2013).

The analysis of the data is presented in this chapter and is organized to independently address each of the research questions used to frame the study. The primary research question focused on the relationship between the composite scores of SRSS-IE and the risk factor composite score. The secondary research questions examined the relationship between the internalizing and externalizing behavior scores and each of the childhood risk factors including lunch status (used as a proxy for socioeconomic status), homelessness, absenteeism, office discipline referrals, and academic performance, broken down by reading and math performance.

## **Research Questions**

### ***Primary Research Question***

1. To what degree does the risk factors composite score predict the composite score of the SRSS-IE?

$H_0$ : There is no correlation between the composite score of the SRSS-IE and the student risk factors composite score.

$H_1$ : There is a correlation between the composite scores of the SRSS-IE and the student risk factors composite score.

### ***Secondary Research Questions***

3. What is the correlation between the SRSS-IE internalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?
4. What is the correlation between the SRSS-IE externalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?

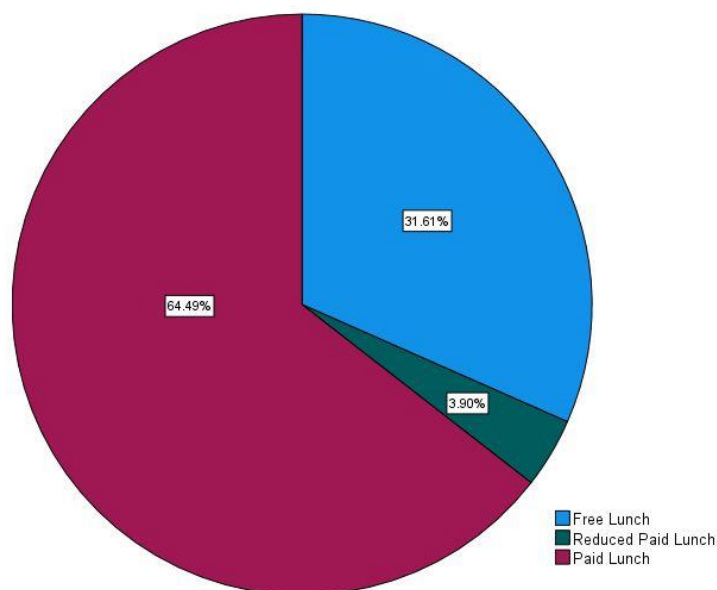
## **Participants**

This study was conducted in the Fargo Public School District (FPS), which enrolled 11,211 students in the 2020-2021 school year (Fargo Public Schools [FPS], 2021). FPS consists of fourteen elementary (K-5) schools across 16 campuses, three middle schools, three comprehensive high schools, and one alternative high school (FPS, 2021). Participant data for this study was drawn from the completion of the spring 2021 Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE) for the population of fourth and fifth grade students in the school district. Of the 1,411 students who had a spring SRSS-IE score, 49.8% of them were

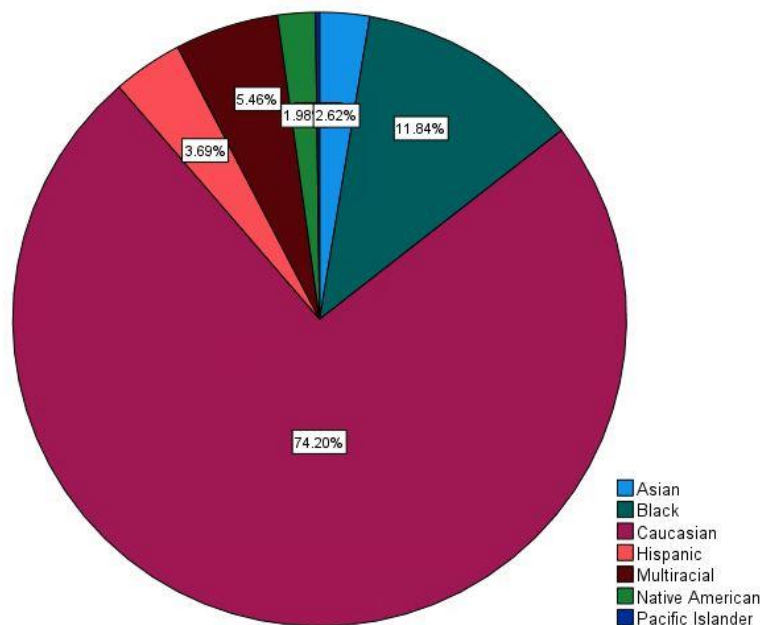
fourth graders, 50.2% were fifth graders, 51% were boys, and 49% were girls. Using student lunch status as a proxy for socioeconomic status as shown in Figure 3, 64.5% of the participants paid for their school lunches, 3.9% paid a reduced rate for school lunches, and 31.6% qualified to receive free lunches. As shown in Figure 4, most of the students were White (74.2%), followed by Black (11.8%), Multi-race (5.5%), Hispanic (3.7%), Asian (2.6%), Native American (2.0%), and Pacific Islander (0.2%).

### Figure 3

*2021 Participant Lunch Status*





**Figure 4***2021 Participant Ethnicity Status*

The spring 2021 SRSS-IE results were pulled by the Fargo Public Schools Director of Data Analysis directly from the database in which teachers complete the scoring of the screening tool. The Director of Data Analysis utilized the district's Student Information System (SIS), PowerSchool, to gather the study's associated risk factors (i.e., lunch status, absenteeism, homelessness, office discipline referrals, reading performance, and math performance) and demographic information (i.e., grade, gender, ethnicity). The data were provided to the researcher in a spreadsheet with unidentifiable student numbers.

## Results

The following section provides an analysis of the data and the results that were used to determine the degree to which the risk factors composite score predicts the composite score of the SRSS-IE and the correlation between the individual risk factors and the SRSS-IE internalizing and externalizing composite scores. The three research questions were used as a guide for completing the analysis with results organized by research question.

### *Research Question 1*

#### **To what degree does the risk factors composite score predict the composite score of the SRSS-IE?**

H<sub>0</sub>: There is no correlation between the composite score of the SRSS-IE and the student risk factors composite score.

H<sub>1</sub>: There is a correlation between the composite score of the SRSS-IE and the student risk factors composite score.

To initiate the investigation about the degree to which the risk factors composite score predicts the composite score of the SRSS-IE, the data obtained from the spring 2021 SRSS-IE administration and risk factors composite scores for the 1,411 participants were examined. The mean SRSS-IE composite score for all participants, as shown in Table 16, was 4.98 ( $SD = 5.75$ ) and the median score was 3. The minimum SRSS-IE composite score was 0 and the maximum composite score was 33, recognizing the highest possible score on the SRSS-IE, although rare, is 36. The highest possible risk factors composite score was 12, and in the spring of 2021, for the participants in this study, the mean risk factors composite score was 2.53 ( $SD = 2.17$ ). The risk factors composite score was developed using the scale found in Table 13 on page 96.

**Table 16***Mean SRSS-IE Overall and Risk Factors Composite Scores*

Scores ( $N = 1,411$ )	Mean	Median	<i>SD</i>	Minimum	Maximum
SRSS-IE Composite	4.98	3	5.75	0	33
Risk Factors Composite	2.53	2	2.17	0	10

*Note.* SRSS-IE maximum score = 36; Low risk = 0-5, Moderate risk = 6-12, High risk = 13-36.

SRSS-IE risk ranges for the composite score were created for this study by the researcher by combining the internalizing and externalizing risk ranges. Risk factor maximum score = 12.

In anticipation of running the correlations and regressions to identify factors that predict the SRSS-IE, the data were explored to determine whether they met the parametric assumptions to use Pearson product moment correlation. The first assumption, that each variable used in the correlation was measured on a continuous scale, was confirmed. The SRSS-IE composite score scale (i.e., 0 – 36) and the risk factor score scale (i.e., 0 – 12) affirmed both variables were measured on a ratio scale, and only participants with a value for each variable were used in the analysis. The second assumption, a linear relationship among the SRSS-IE composite and risk factors composite variables, was confirmed, as shown in Figure 5.

The third assumption, the absence of outliers, was violated. There were 62 outliers among the variables SRSS-IE composite score (i.e., 54 outliers) and the risk factors composite score (i.e., 8 outliers). Figure 6 shows the outliers in the distribution of both ratio variables, which could have an exaggerated influence on the effect value in the correlation.

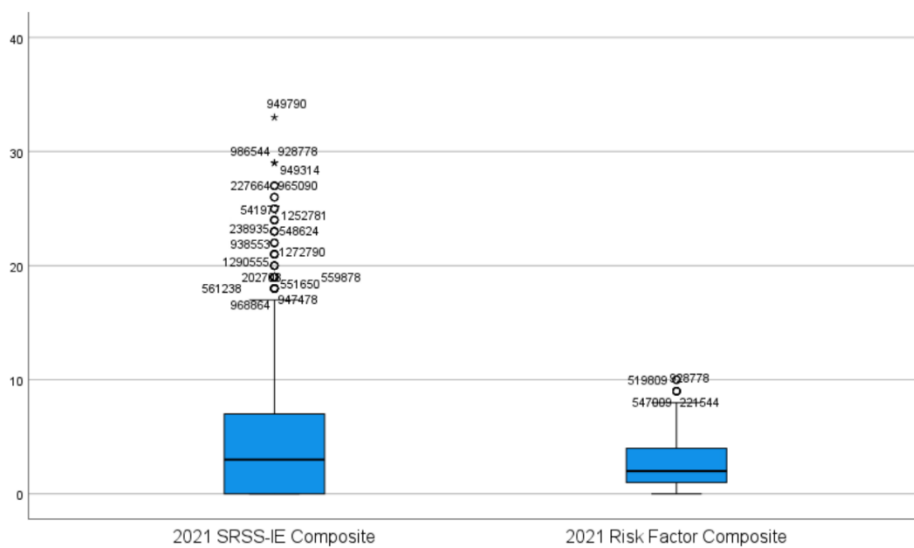
**Figure 5**

*Scatterplot of 2021 SRSS-IE Overall and Risk Factors Composite Scores*



**Figure 6**

*SRSS-IE Overall and Risk Factors Composite Outliers*

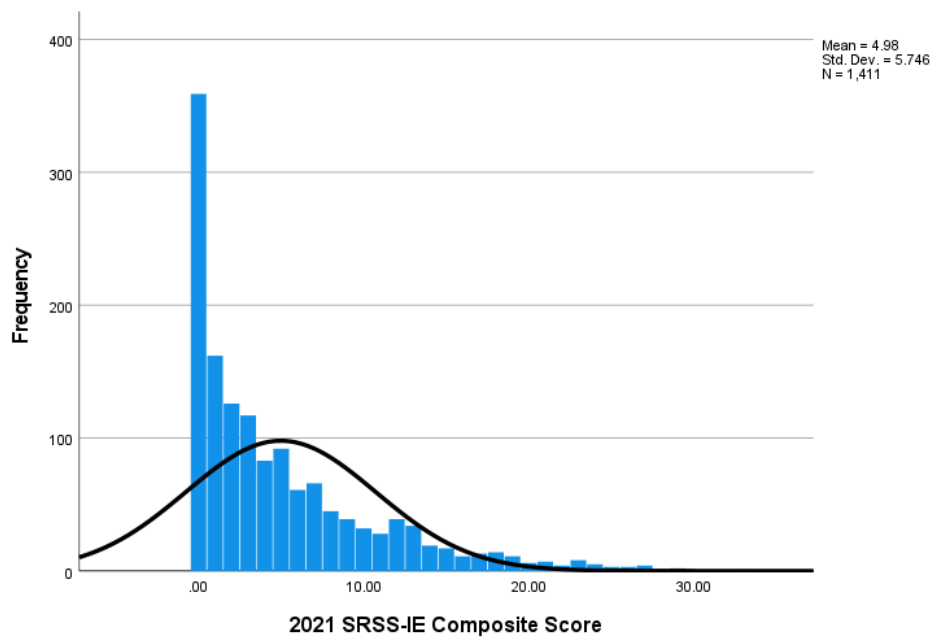
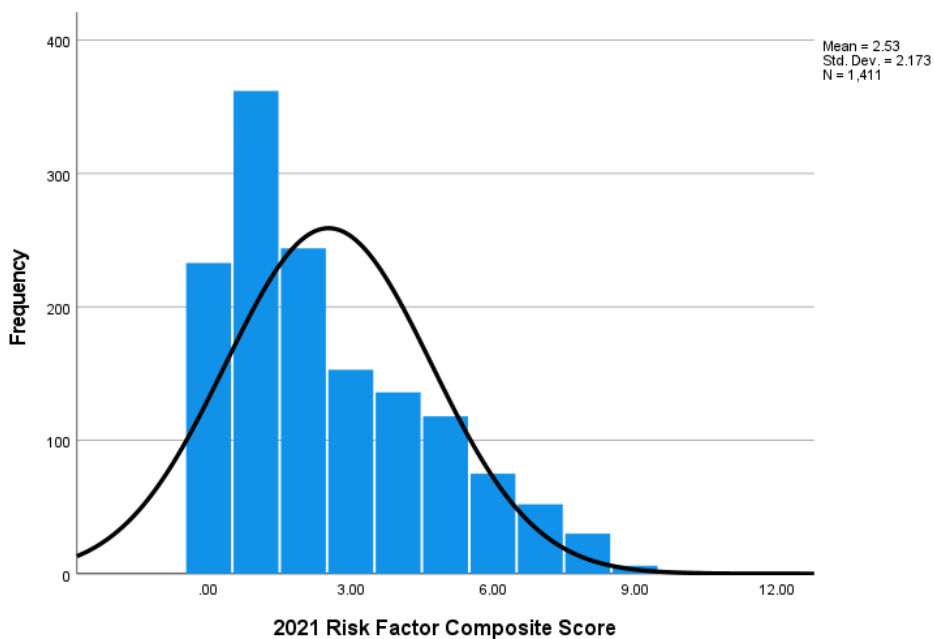


The statistics for the fourth assumption, distribution of bivariate normality, are shown in Table 17. A skewness value of zero indicates that the distribution was symmetrical (Laerd Statistics, 2020). The skewness for the SRSS-IE composite score was 1.54 ( $SD = .07$ ) which falls outside the acceptable skewness range of  $\pm 1$  and demonstrated a positive skew. The skewness of the risk factors composite score of 0.85 falls within the acceptable range. Kurtosis measures whether the distribution was heavy- or light-tailed as compared to a normal distribution, and values of  $\pm 3$  are acceptable kurtosis ranges (Laerd Statistics, 2020). Kurtosis values for the SRSS-IE and risk factors composite scores were 2.24 and -0.07, respectively, indicating both scores were within the acceptable range. Finally, the Shapiro-Wilk test was the third strategy in determining whether both sets of scores had a normal distribution. The Shapiro-Wilk test showed the distribution of the SRSS-IE composite scores ( $W = 0.82, p < .001$ ) and the risk factors composite scores ( $W = 0.90, p < .001$ ) did not have a normal distribution (i.e.,  $p < .05$ ). Frequencies of the SRSS-IE composite score, shown in Figure 7, and the risk factors composite score, shown in Figure 8, helped to visually confirm the positive skewness of these distributions. Consequently, because some of the parametric assumptions were violated, a non-parametric inferential statistical test, Spearman's rho correlation, was used to test the  $H_0$  and explore the association between variables.

**Table 17**

*Skewness and Kurtosis by 2021 Composite Score*

Composite Score	Skewness	<i>SD</i>	Kurtosis	<i>SD</i>	Shapiro-Wilk	<i>p</i>
SRSS-IE	1.54	0.07	2.24	0.13	0.82	<.001
Risk Factor	0.85	0.07	-0.07	0.13	0.90	<.001

**Figure 7***2021 SRSS-IE Score Distribution***Figure 8***2021 Risk Factor Score Distribution*

A Spearman's rho correlation between the SRSS-IE composite score and the risk factors composite score was calculated to determine the strength of the relationship. According to Cohen (1988), effect size measures the strength of two variables and can be classified as small (.20 – .49), medium (.50 – .79), and large (.80+). Table 18 shows the correlation coefficient for the SRSS-IE and risk factors composite scores. Upon analysis, the null hypothesis was rejected, and the alternative hypothesis was accepted. There was a correlation between the SRSS-IE composite and risk factors composite scores. The variables were found to be moderately, positively correlated and statistically significant,  $r_s(1,409) = .54, p < .001$ .

**Table 18**

*Spearman's rho Correlation Coefficients for SRSS-IE Overall and Risk Factors Composites*

	<i>r</i>	<i>p</i>	<i>N</i>
SRSS-IE Composite	1.00	--	1,411
Risk Factors Composite	.54*	< .001	1,411

*Note.* \* Moderate correlation.

The literature indicates that adults with mental health difficulties often have a childhood history of being raised in higher poverty homes, office discipline referrals, greater school absenteeism, homelessness, and increased academic difficulties when compared to adults without mental health conditions (Brydges et al., 2019; Fatori et al., 2013; Suldo et al., 2013; Wyman et al., 2010). The research also indicates that gender and ethnicity can influence mental health outcomes for adults (Göbel et al., 2016; Payne et al., 2017; Reynolds & Gonzales-Backen, 2017). Consequently, correlations were run and disaggregated by demographic groups for these individual risk factors and the SRSS-IE, as a measure of childhood mental health difficulty, to determine which isolated variable(s) had the highest correlation coefficients with the SRSS-IE composite score.

Table 19 shows the correlation coefficients of the SRSS-IE, the risk factors composite score, and the individual risk factors, disaggregated by demographic group. The SRSS-IE and risk factors composite scores had a medium, positive correlation that was statistically significant,  $r_s(1,409) = .54, p < .001$ . Guided by the literature, analyzing the risk factors composite score by individual risk factors demonstrated that all risk factors were positively correlated with statistical significance, with one medium correlation among the SRSS-IE composite score and increased math challenge,  $r_s(1,223) = .50, p < .001$ .

When correlating the SRSS-IE composite and risk factors composite scores among the various demographic groups (i.e., grade, gender, lunch status, ethnicity), all were positively correlated and statistically significant, except for Pacific Islander,  $r_s(1) = .00, p = 1.00$ . There were medium, statistically significant correlations among the SRSS-IE composite score and the risk factors composite score, as shown in Table 20, for both grade levels, both genders, students receiving reduced paid lunch, and among ethnicity groups Asian, Black, and Hispanic. Gender, lunch status, and ethnicity levels were defined by the school district. Because the number of students in the Pacific Islanders group was limited ( $N = 3$ ), the results cannot be generalized to the population.



**Table 19**

*Correlation Summary for SRSS-IE Overall, Risk Factors Composite, and Individual Risk Factors by Demographic Group*

Risk Factor		Population														
		Grade		Gender		Lunch Status			Ethnicity							
		4	5	B	G	P	R	F	A	B	C	H	M	NA	PI	
Composite	<i>r</i>	.54*	.56*	.53*	.55*	.55*	.39	.64*	.46	.61*	.54*	.49	.59*	.49	.45	.00
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.016	1.00
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Increased Financial Challenge	<i>r</i>	.37	.38	.36	.37	.38	--	--	--	.62*	.22	.32	.38	.34	.33	.00
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	--	--	--	<.001	.005	<.001	<.001	<.001	.085	1.00
	<i>N</i>	1,411	702	709	719	692	--	--	--	37	167	1,047	52	77	28	3
Office Discipline Referrals (ODR)	<i>r</i>	.24	.26	.22	.28	.17	.13	.33	.33	.28	.35	.19	.46	.29	.30	--
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.089	<.001	<.001	<.001	.012	.123	--
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	--
Absenteeism	<i>r</i>	.30	.29	.30	.28	.32	.16	.41	.25	.29	.28	.24	.34	.35	.39	-.50
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.079	<.001	<.001	.014	<.001	.040	.667
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Homelessness	<i>r</i>	.09	.09	.08	.07	.10	--	--	.08	--	.13	.06	.16	.04	--	--
	<i>p</i>	<.001	.015	.025	.047	.008	--	--	.085	--	.107	.064	.246	.753	--	--
	<i>N</i>	1,411	702	709	719	692	--	--	446	--	167	1,047	52	77	--	--
Increased Reading Challenge	<i>r</i>	.43	.49	.38	.45	.41	.34	.40	.34	.32	.44	.39	.50*	.27	.40	.00
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.058	<.001	<.001	<.001	.022	.039	1.00
	<i>N</i>	1,400	693	707	711	689	908	55	437	37	166	1,040	52	75	27	3
Increased Math Challenge	<i>r</i>	.50*	.55*	.45	.51*	.50*	.38	.52*	.39	.48	.48	.48	.53*	.35	.16	.87
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.003	<.001	<.001	<.001	.004	.437	.333
	<i>N</i>	1,225	603	622	613	612	767	53	405	35	148	901	44	68	26	3

*Note.* Gender: B – boys, G – girls; Lunch Status: P – Paid, R – Reduced paid, F – Free; Ethnicity: A – Asian, B – Black, C – Caucasian, H – Hispanic, M – Multi-race, NA – Native American, PI – Pacific Islander. \* Moderate correlation. \*\* Strong correlation.

**Table 20**

*Medium Correlations: SRSS-IE Overall and Risk Factors Composite Scores by Demographic Group*

Group	Correlation
Grade	
4	$r_s(700) = .56, p < .001$
5	$r_s(707) = .53, p < .001$
Gender	
Boys	$r_s(717) = .55, p < .001$
Girls	$r_s(690) = .55, p < .001$
Lunch Status	
Reduced Paid	$r_s(52) = .64, p < .001$
Ethnicity	
Asian	$r_s(35) = .61, p < .001$
Black	$r_s(165) = .54, p < .001$
Hispanic	$r_s(50) = .59, p < .001$

Three years of risk factor information was provided as part of the research design (i.e., 2018-19, 2019-20, 2020-21). Retrospective risk factors were combined to create a 3-year risk factors composite score. As shown in Table 17 the highest possible 3-year risk factors composite score was 32, and the mean score was 5.99 ( $SD = 4.89$ ). Also included in Table 21 the relationship of the previous 2-year composite score (i.e., 2018-19 and 2019-20) was reviewed. The highest possible score for the previous 2-year risk factors composite score was 20, and the mean score was 3.46 ( $SD = 3.09$ ). No student in the study obtained the maximum possible score on any of the composite scores.

**Table 21***3-year Retrospective SRSS-IE and Risk Factors Composite Score Descriptive Statistics*

	Mean	Median	SD	Minimum	Maximum
SRSS-IE Composite	4.92	3	5.75	0	33
Risk Factors Composite	2.53	2	2.17	0	10
3-year RF Composite	5.99	4	4.89	0	24
Previous 2-year RF Composite	3.46	2	3.09	0	15

*Note.* SRSS-IE maximum score possible = 36; Risk factors composite maximum score possible = 12; 3-year RF maximum score possible = 32; Previous 2-year RF score possible = 20.

Spearman's rho correlations between the SRSS-IE composite score and the 3-year combined risk factors composite score and the previous 2-year risk factors composite score were calculated to determine the strength of the relationships. Table 22 shows the correlation coefficients, compared to the 2021 risk factors composite score. The 3-year risk factors composite score was found to have a medium positive correlation to the SRSS-IE composite,  $r_s(1,409) = .53, p < .001$ , and the statistically significant correlation for the previous 2-year risk factors composite score was slightly smaller  $r_s(1,409) = .46, p < .001$ .

**Table 22***Spearman's rho Correlation Summary for SRSS-IE Composite and Multiple Years RF Composite*

	<i>N</i>	<i>r</i>	<i>p</i>
2021 Risk Factors Composite Score	1,411	.54*	< .001
3-year Risk Factors Composite	1,411	.53*	< .001
Previous 2-year Risk Factors Composite	1,411	.46*	< .001

*Note.* \* Moderate correlation.

Risk factor data from three years were combined to determine to what degree historical data impacted the strength of the relationship to the current year's SRSS-IE scores. Table 23 shows the correlation coefficients of the SRSS-IE composite score, each of the risk factors composite scores, and the individual risk factors that went into making up the risk factors

**Table 23**

*Spearman's rho Correlation Coefficients for Comparison among 3-year Retrospective Risk Factors*

Variable		SRSS-IE Composite	SRSS Internalizing Composite	SRSS Externalizing Composite	Increased Financial Challenge	ODR	Absentee	Homeless	Increased Reading Challenge	Increased Math Challenge
<b>Risk Factors</b>										
2021 Composite	<i>r</i>	.54*	.37	.54*	.76**	.23	.61*	.14	.68*	.72*
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	<i>N</i>	1,411	1,411	1,411	1,411	1,411	1,411	1,411	1,400	1,225
3-year Composite	<i>r</i>	.53*	.36	.53*	.72*	.22	.50*	.13	.62*	.66*
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	<i>N</i>	1,411	1,411	1,411	1,411	1,411	1,411	1,411	1,400	1,225
Previous 2-year Composite (18-19 & 19-20)	<i>r</i>	.46	.30	.45	.60*	.19	.35	.11	.49	.54*
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	<i>N</i>	1,411	1,411	1,411	1,411	1,411	1,411	1,411	1,400	1,225

*Note.* \* Moderate correlation.

composite score for the three-year risk factor retrospection (i.e., 2021, 3-year composite, previous 2-year composite). When comparing the retrospective relationships, all were positively correlated with the SRSS-IE composite. The 2021 risk factors composite had the strongest relationship with the SRSS-IE composite score, the internalizing composite score, externalizing composite score, and with each of the individual risk factors (i.e., increased financial challenge [using lunch status as the proxy], office discipline referrals, absenteeism, homelessness, increased reading challenge, and increased math challenge). Moderate correlation coefficients were found between the risk factors composite and the SRSS-IE overall composite, externalizing composite, and increased math challenge. Moderate positive correlations were also present among the 3-year risk factors composite and the 2021 SRSS-IE composite and externalizing composite scores. There was a strong, positive correlation among the 2021 risk factors composite and increased financial challenge. More in-depth analyses of the internalizing and externalizing scores are provided in RQ2 and RQ3.

Measures of central tendency and dispersion were calculated for various subgroups of participants. The SRSS-IE identifies risk thresholds independently for the internalizing and externalizing behavior subscales into the three categories of low, moderate, and high-risk. Further information about the risk levels can be found in Table 12 on page 92. For the purpose of this study, the internalizing and externalizing risk ranges were combined to create an overall risk threshold of the screening measure. Combining the two threshold ranges yielded a low-risk range for scores 0-5 range, a moderate-risk range for scores 6-12, and a high-risk range for scores 13-36 for the overall composite score.

Table 24 shows when the mean SRSS-IE composite scores met the combined threshold of the two risk ranges for each demographic group in the study. The mean SRSS-IE composite

score for the demographic groups composed of boys, reduced lunch, free lunch, Black, Hispanic, and Native American cross the moderate-risk threshold when the internalizing and externalizing thresholds are combined to create an overall risk threshold. The means of all other groups are in the low-risk range. The median scores for most of the groups were less than 6, the threshold for the moderate-risk range, except for the participants in the demographic groups composed of free lunch, Hispanic, and Native American, which all had a median score of 7.

**Table 24**

*Mean SRSS-IE Overall Composite Score by Demographic Group*

Group	<i>N</i>	<i>M</i>	Median	<i>SD</i>	Minimum	Maximum
Overall Composite	1,411	4.92	3	5.75	0	33
Grade						
Grade 4	702	4.98	3	5.77	0	33
Grade 5	709	4.97	3	5.73	0	27
Gender						
Boys	719	5.47 <sup>1</sup>	3	5.98	0	29
Girls	692	4.47	3	5.47	0	33
Lunch Status						
Paid Lunch	910	3.48	2	4.61	0	27
Reduced Lunch	55	6.02 <sup>1</sup>	3	7.06	0	25
Free Lunch	446	7.91 <sup>1</sup>	7 <sup>1</sup>	6.48	0	33
Ethnicity						
Asian	37	4.24	3	4.60	0	20
Black	167	7.42 <sup>1</sup>	5	6.56	0	33
Caucasian	1,047	4.27	2	5.24	0	27
Hispanic	52	8.77 <sup>1</sup>	7 <sup>1</sup>	8.23	0	29
Multi-race	77	6.08	5	6.08	0	24
Native American	28	8.18 <sup>1</sup>	7 <sup>1</sup>	6.06	0	24
Pacific Islander	3	2.00	1	2.65	0	5

*Note.* <sup>1</sup> Meets the combined threshold for moderate-risk.

Table 25 intersects risk factors composite scores and the corresponding SRSS-IE composite score means, while at the same time marking the thresholds for moderate and high SRSS-IE risk. The average SRSS-IE composite score met the threshold of the combined internalizing and externalizing moderate thresholds when the risk factor score was 4. Starting at a risk factor score of 8 was when the average SRSS-IE composite score met the high-risk threshold of the combined internalizing and externalizing measures. It is important to state once again that the SRSS-IE does not have an overall composite threshold, nor does it suggest the utilization of a composite score comprised of internalizing and externalizing behaviors.

**Table 25**

*Mean SRSS-IE Overall Composite Score and Risk Factors Composite Score Intersection*

Risk Factors Composite Score	<i>N</i>	<i>M</i>	<i>SD</i>
0	233	2.06	3.61
1	362	2.54	3.67
2	244	3.73	4.02
3	153	5.48	5.26
4	136	7.33 <sup>1</sup>	6.15
5	118	8.51 <sup>1</sup>	5.71
6	75	10.52 <sup>1</sup>	6.67
7	52	10.92 <sup>1</sup>	6.73
8	30	12.93 <sup>2</sup>	7.23
9	6	13.67 <sup>2</sup>	9.54
10	2	24.50 <sup>2</sup>	3.54

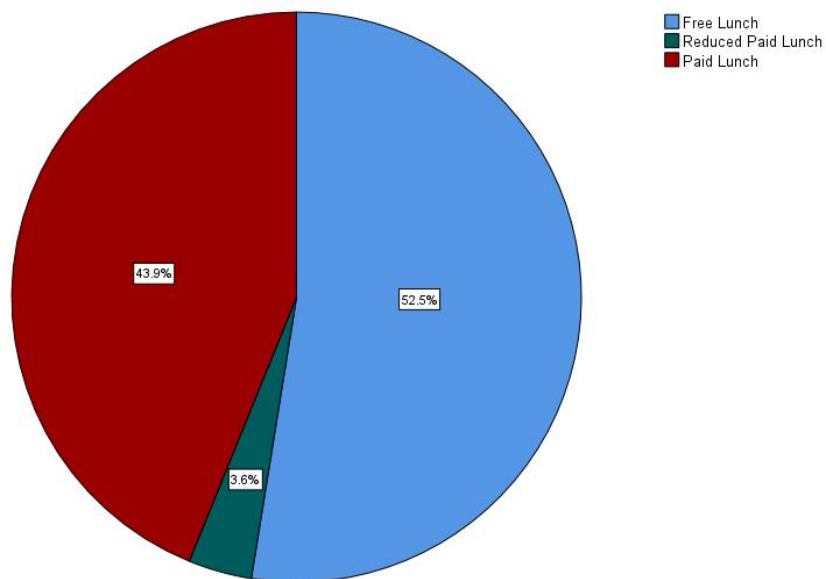
*Note.* <sup>1</sup> Meets the threshold of moderate-risk of the combined internalizing and externalizing thresholds. <sup>2</sup> Meets the threshold for high-risk of the combined internalizing and externalizing thresholds.

The researcher deemed it appropriate to focus the statistical analysis on students with SRSS-IE scores of six or higher (i.e., moderate-risk threshold and higher). Of the 1,411 students who had a spring SRSS-IE score, 472 had a score of 6 or more on the SRSS-IE composite. Of

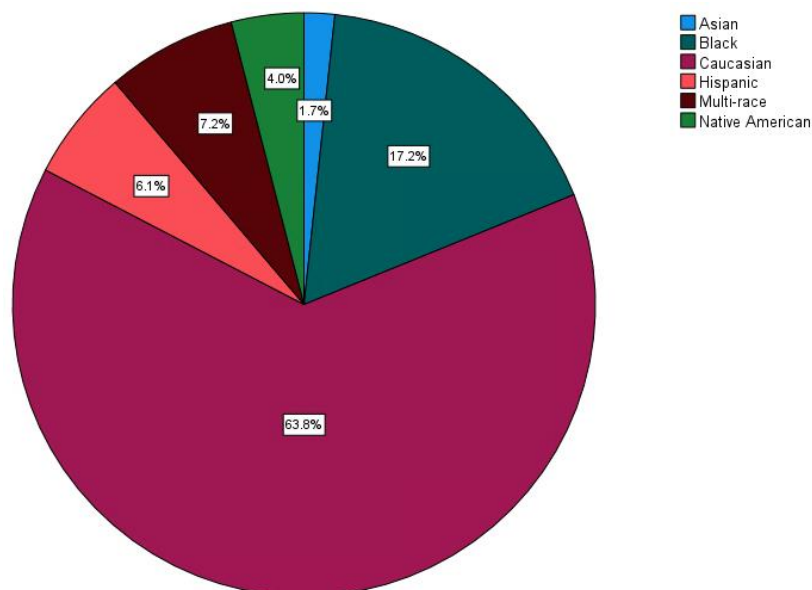
this purposive sample, 46.6% of them were fourth graders, 53.4% were fifth graders, 57% were boys, and 43% were girls. As shown in Figure 9, 43.0% of the purposive sample paid for school lunches, 3.6% paid a reduced rate for school lunches, and 52.5% received free lunches. As shown in Figure 10, most of the students were White (63.8%), followed by Black (17.2%), Multi-race (7.2%), Hispanic (6.1%), Native American (4.0%), and Asian (1.7%).

### Figure 9

*Overall Purposive Sample (6+) Socioeconomic Status*





**Figure 10***Overall Purposive Sample (6+) Ethnicity Status*

The parametric assumptions were tested, recognizing the first two assumptions (i.e., continuous ratio scales and linear relationship) were previously confirmed. The third assumption, distribution of bivariate normality, was assessed for the SRSS-IE subset and continued to be positively skewed, as shown by a skewness value of 1.18 ( $SD = 0.11$ ) in Table 26. This score fell outside the acceptable range of  $\pm 1$  (Laerd Statistics, 2020). The positive skew is visible in Figure 11. The frequency distribution of the risk factors composite score as shown in Table 26 by acceptable values of skewness and Kurtosis and visual inspection (Figure 12) resembled a more normal distribution. However, due to the unacceptable skewness value for the SRSS-IE combined with the Shapiro-Wilk test of the SRSS-IE ( $W = 0.88, p < .001$ ) and the risk factors composite score ( $W = 0.97, p < .001$ ), the parametric assumption of each variable having a normal distribution was violated and Spearman rho's correlation was used to further explore the association between variables.

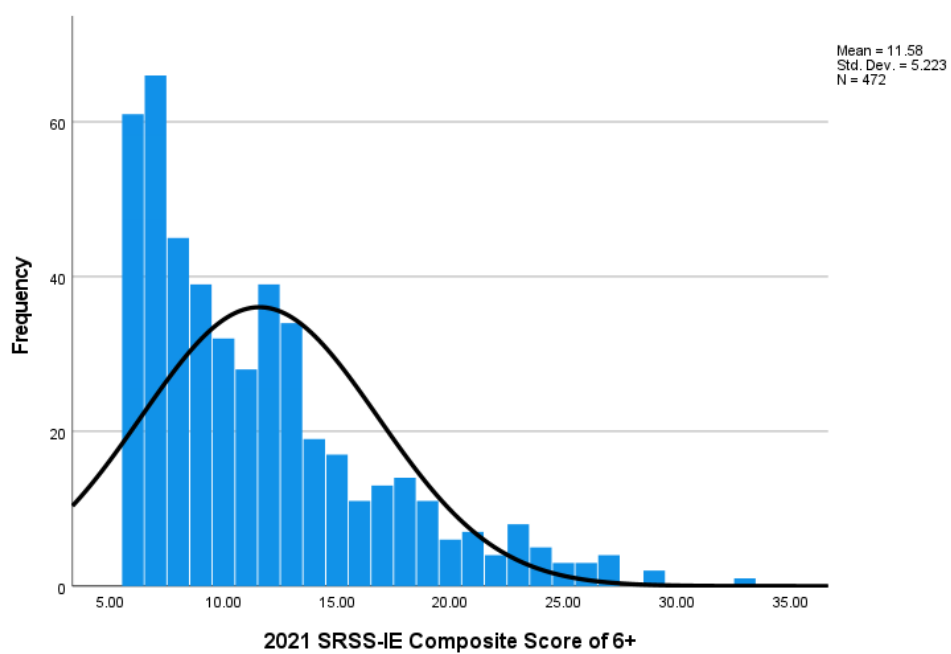
**Table 26**

*Skewness and Kurtosis by 2021 Composite Score of Overall Purposive Sample*

Composite Score	Skewness	<i>SD</i>	Kurtosis	<i>SD</i>	Shapiro-Wilk	<i>p</i>
SRSS-IE	1.18	0.11	1.05	0.22	0.88	< .001
Risk Factor	0.11	0.11	0.74	0.22	0.97	< .001

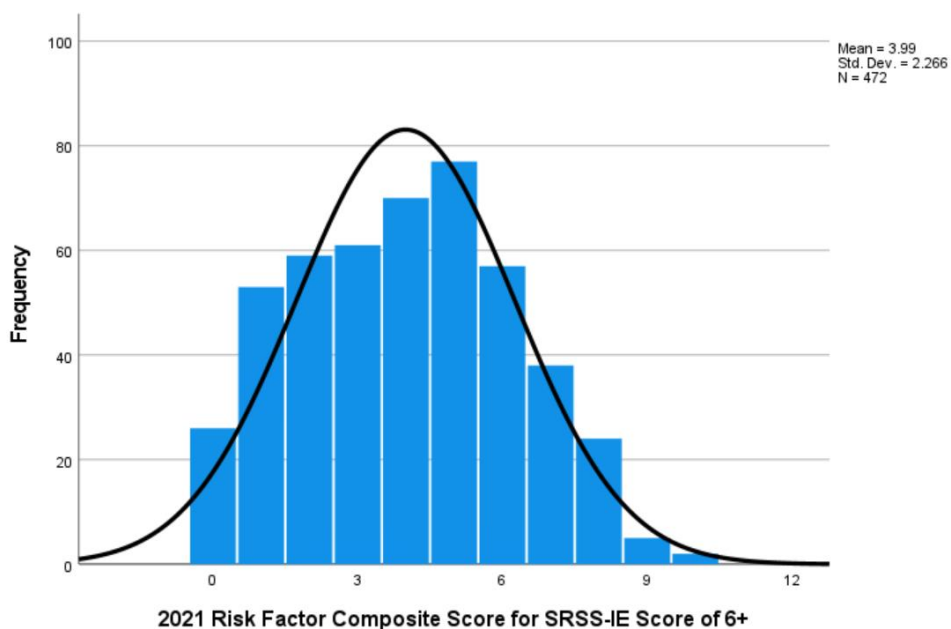
**Figure 11**

*2021 SRSS-IE Scores Frequency Distribution for Overall Purposive Sample (6+)*



**Figure 12**

*2021 Risk Factor Scores Frequency Distribution for Overall Purposive Sample (6+)*



To continue analyzing the SRSS-IE composite scores of students in the purposive sample, Spearman's rho correlations among the SRSS-IE composite score, risk factors composite score, and the individual risk factors were run and studied. These correlations, provided in Table 27, were different from the correlations obtained from the entire population in that the correlation coefficients were lower. Although small, the correlation between the SRSS-IE and the risk factors composite score for the purposive sample was statistically significant,  $r_s(470) = .28, p < .001$ .

**Table 27**

*Correlation Summary for SRSS-IE Overall Composite and Risk Factors –Purposive Sample (6+)*

	Population			Purposive Sample (6+)		
	<i>N</i>	<i>r</i>	<i>p</i>	<i>N</i>	<i>r</i>	<i>p</i>
Risk Factors Composite Score	1,411	.54*	< .001	472	.28	< .001
Increased Financial Challenge	1,411	.37	< .001	472	.18	< .001
ODRs	1,411	.24	< .001	472	.30	< .001
Absenteeism	1,411	.30	< .001	472	.16	< .001
Homelessness	1,411	.09	< .001	472	.09	.848
Increased Reading Challenge	1,400	.43	< .001	465	.14	.003
Increased Math Challenge	1,225	.50*	< .001	403	.21	< .001

*Note.* Purposive Sample (6+) includes only students rated  $\geq 6$  on the SRSS-IE composite. \* Moderate correlation.

Additional Spearman's rho correlations were run for this purposive sample to analyze the strength of the relationships disaggregated by demographic variables. Table 28 shows the correlation coefficients disaggregated by demographic variables. Two moderate, positive correlations were statistically significant for students who were Hispanic ( $N = 29$ ). These occurred between the SRSS-IE composite score and the risk factors composite score,  $r_s(27) = .53, p = .003$ , and the ODR risk factor,  $r_s(27) = .59, p < .001$ . All other relationships were low, although nearly half of the remaining relationships were not statistically significant (Cohen, 1988).

**Table 28**

*Purposive Sample (6+) Correlation Summary– SRSS-IE Overall Composite, RF Composite, and Individual RFs by Demographic Group*

Risk Factor	Purposive Sample (6+)															
			Grade		Gender		Lunch Status			Ethnicity						
			4	5	B	G	P	R	F	A	B	C	H	M	NA	PI
Composite	<i>r</i>	.28	.29	.24	.25	.31	.17	.00	.23	-.10	.15	.23	.53*	.34	.45	--
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	.012	.992	<.001	.806	.181	<.001	.003	.05	.056	--
	<i>n</i>	472	220	252	267	205	207	17	248	8	81	301	29	34	19	--
Increased Financial Challenge	<i>r</i>	.18	.17	.18	.14	.22	--	--	--	-.13	-.01	.19	.21	.06	.38	--
	<i>p</i>	<.001	.012	.004	.023	.001	--	--	--	.763	.904	<.001	.279	.720	.109	--
	<i>n</i>	472	220	252	267	205	207	17	248	8	81	301	29	34	19	--
Office Discipline Referrals (ODR)	<i>r</i>	.30	.34	.26	.33	.26	.17	.32	.34	.59	.40	.21	.59*	.32	.35	--
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	.016	.204	<.001	.122	<.001	<.001	<.001	.067	.146	--
	<i>n</i>	472	220	252	267	205	207	17	248	8	81	301	29	34	19	--
Absenteeism	<i>r</i>	.16	.22	.12	.14	.20	.09	.08	.13	.24	.19	.10	.24	.20	.44	--
	<i>p</i>	<.001	.001	.053	.02	.004	.178	.767	.045	.566	.08	.087	.212	.248	.062	--
	<i>n</i>	472	220	252	267	205	207	17	248	8	81	301	29	34	19	--
Homelessness	<i>r</i>	.09	.01	.01	-.02	.04	--	--	.00	--	.01	.01	.14	-.26	--	--
	<i>p</i>	.838	.947	.864	.691	.539	--	--	.962	--	.928	.890	.481	.140	--	--
	<i>n</i>	472	220	252	267	205	207	17	248	8	81	301	29	34	19	--
Increased Reading Challenge	<i>r</i>	.14	.16	.11	.11	.17	.09	-.26	.11	-.01	-.05	.10	.22	.37	.26	--
	<i>p</i>	.003	.017	.098	.075	.016	.184	.306	.076	.974	.650	.090	.243	.037	.300	--
	<i>n</i>	465	214	251	260	205	206	17	242	8	80	297	29	33	18	--
Increased Math Challenge	<i>r</i>	.21	.27	.15	.20	.22	.19	.02	.13	.18	.09	.16	.49	.23	.32	--
	<i>p</i>	<.001	<.001	.022	.003	.003	.014	.949	.056	.664	.464	.01	.013	.231	.201	--
	<i>n</i>	403	177	226	223	180	169	16	218	8	70	252	25	30	18	--

*Note.* Gender: B – boys, G – girls; Lunch Status: P – Paid, R – Reduced paid, F – Free; Ethnicity: A – Asian, B – Black, C – Caucasian, H – Hispanic, M – Multi-race, NA – Native American, PI – Pacific Islander. \* Moderate correlation.

Of the 472 students in the purposive sample who were rated at a six or higher, as shown in Table 29, the average SRSS-IE rating was 11.58 ( $SD = 5.22$ ), compared to 4.92 ( $SD = 5.75$ ) in the total population. Additionally, the average risk factors composite score for the purposive sample was 3.99 ( $SD = 2.27$ ), compared to the mean of 2.53 ( $SD = 2.17$ ) for the original population.

**Table 29**

*Mean Overall Composite Score Comparison – Purposive Sample (6+)*

Composite Group	<i>N</i>	<i>M</i>	Median	<i>SD</i>	Minimum	Maximum
Total Population	1,411					
SRSS-IE		4.92	3	5.75	0	33
Risk Factor		2.53	2	2.17	0	10
Purposive Sample	472					
SRSS-IE		11.58	5	5.22	6	33
Risk Factor		3.99	7	2.27	0	10

*Note.* The purposive sample included students with an SRSS-IE composite score  $\geq 6$ . SRSS-IE maximum score possible = 36. Risk factors composite maximum score possible = 12.

Furthering the comparison of the entire population to the purposive sample, as shown in Table 30, all groups met the SRSS-IE composite score moderate-risk threshold, using a total of the internalizing and externalizing risk thresholds. Two groups in the purposive sample, reduced lunch ( $M = 15.06$ ,  $SD = 5.93$ ) and Hispanic ( $M = 13.90$ ,  $SD = 7.67$ ), met the high-risk threshold.

**Table 30***Mean SRSS-IE Overall Composite Score by Demographic Group – Purposive Sample (6+)*

Group	Population			Purposive Sample (6+)		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Total Group	1,411	4.92	5.75	472	11.58 <sup>1</sup>	5.22
Grade						
Grade 4	702	4.98	5.77	220	11.88 <sup>1</sup>	5.52
Grade 5	709	4.97	5.73	252	11.33 <sup>1</sup>	4.94
Gender						
Boys	719	5.47 <sup>1</sup>	5.98	267	11.78 <sup>1</sup>	5.28
Girls	692	4.47	5.47	205	11.32 <sup>1</sup>	5.14
Lunch Status						
Paid Lunch	910	3.48	4.61	207	10.47 <sup>1</sup>	4.59
Reduced Lunch	55	6.02 <sup>1</sup>	7.06	17	15.06 <sup>2</sup>	5.93
Free Lunch	446	7.91 <sup>1</sup>	6.48	248	12.27 <sup>1</sup>	5.46
Ethnicity						
Asian	37	4.24	4.60	8	11.38 <sup>1</sup>	4.50
Black	167	7.42 <sup>1</sup>	6.56	81	12.68 <sup>1</sup>	5.62
Caucasian	1,047	4.27	5.24	301	11.11 <sup>1</sup>	4.78
Hispanic	52	8.77 <sup>1</sup>	8.23	29	13.90 <sup>2</sup>	7.67
Multi-race	77	6.08	6.08	34	11.53 <sup>1</sup>	5.09
Native American	28	8.18 <sup>1</sup>	6.06	19	11.00 <sup>1</sup>	5.24
Pacific Islander	3	2.00	2.65	--	--	--

*Note.* Purposive Sample (6+) includes only students rated  $\geq 6$  on the SRSS-IE composite. <sup>1</sup> Meets the combined threshold for SRSS-IE moderate-risk level. <sup>2</sup> Meets the combined threshold for SRSS-IE high-risk level.

When comparing the mean SRSS-IE composite score of the total population to the mean SRSS-IE composite score of the purposive sample, risk factors composite scores from 0 to 3 met the threshold for moderate-risk on the SRSS-IE, as shown in Table 31. This was to be expected since the purposive sample included only students who had at least a minimum score of 6, the lowest limit of the moderate range of scores. Scores from the entire population did not demonstrate moderate level risk until reaching a risk factor score of 4. The purposive sample's mean met the high-risk threshold at a risk factors composite score of 7, whereas the population's mean did not meet the same threshold until a risk factors composite score of 9.

**Table 31***Mean SRSS-IE Overall and Risk Factors Composite Score Intersection – Purposive Sample (6+)*

Risk Factors Composite Score	Population			Purposive Sample (6+)		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
0	233	2.06	3.61	26	10.31 <sup>1</sup>	4.88
1	362	2.54	3.67	53	9.92 <sup>1</sup>	3.77
2	244	3.73	4.02	59	9.46 <sup>1</sup>	3.85
3	153	5.48	5.26	61	10.72 <sup>1</sup>	4.39
4	136	7.33 <sup>1</sup>	6.15	70	11.94 <sup>1</sup>	5.17
5	118	8.51 <sup>1</sup>	5.71	77	11.47 <sup>1</sup>	4.75
6	75	10.52 <sup>1</sup>	6.67	57	12.81 <sup>1</sup>	5.98
7	52	10.92 <sup>1</sup>	6.73	38	13.74 <sup>2</sup>	5.61
8	30	12.93 <sup>2</sup>	7.23	24	15.17 <sup>2</sup>	6.31
9	6	13.67 <sup>2</sup>	9.54	5	15.40 <sup>2</sup>	9.56
10	2	24.50 <sup>2</sup>	3.54	2	24.50 <sup>2</sup>	3.54

*Note.* Purposive Sample (6+) includes only students rated  $\geq 6$ . <sup>1</sup> Meets the combined threshold for SRSS-IE moderate-risk. <sup>2</sup> Meets the combined threshold for SRSS-IE high-risk.

### ***Linear Regression Analysis***

Largely, the goal of this study was to determine which school-collected risk factor data could be used to predict mental health scores, as measured by the SRSS-IE, to better understand and prevent instances of mental health symptoms among upper elementary-ages students. In preparation for running a linear regression of the SRSS-IE and risk factors composite scores, parametric assumptions were tested. The first assumption, a continuous dependent variable was confirmed with the SRSS-IE composite score scale (i.e., 0-36). The second assumption, a continuous independent variable, was confirmed by the risk factors composite score scale (i.e., 0-12). The third assumption, a linear relationship between the dependent and independent variables, was confirmed through a scatterplot of the variables with a superimposed regression line as previously shown in Figure 5.

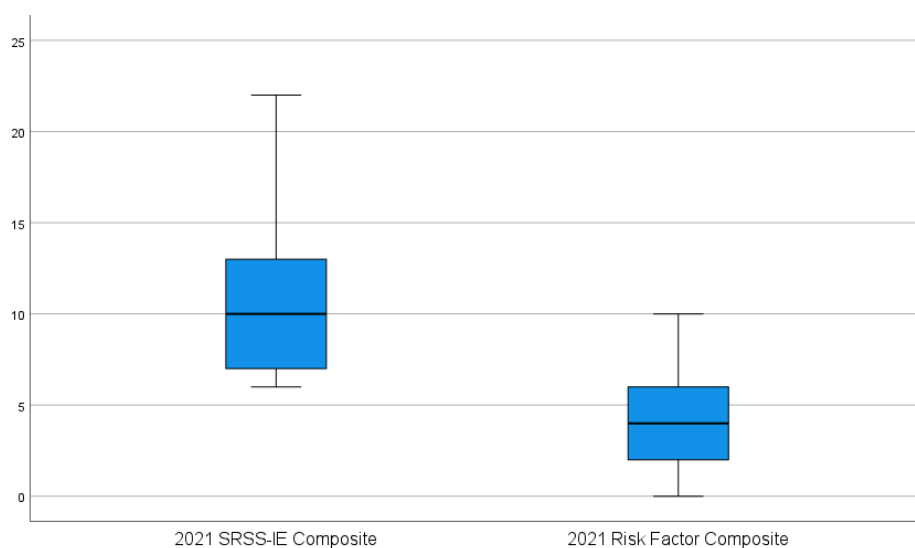
The fourth assumption, the independence of observation, was assessed statistically through the Durbin-Watson test. The Durbin-Watson test assesses for lack of independence of



adjacent observations (Laerd Statistics, 2020). According to Laerd Statistics (2020), an approximate Durbin-Watson value of 2 indicates there was no correlation between residuals. The Durbin-Watson statistic for the SRSS-IE and risk factors composite was 1.81 ( $N = 1,411$ ), verifying the fourth assumption. The fifth assumption, absence of outliers, as previously shown in Figure 4, was violated with a total of sixty-two outliers among the SRSS-IE composite score (i.e., 54 outliers) and the risk factors composite score (i.e., 8 outliers). To proceed with the linear regression, the 62 outliers were removed from the data set, as shown in Figure 13.

**Figure 13**

*SRSS-IE Overall and Risk Factors Composite Scores – Outliers Removed*

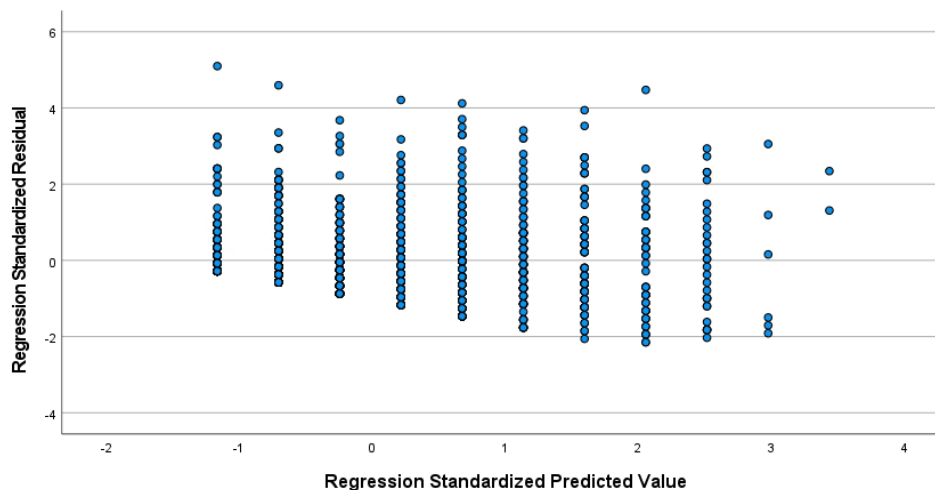


The sixth assumption, homoscedasticity, was an indication that the variance of the residuals was constant across the values of the independent variable. This assumption was assessed through a scatterplot of the regression standardized predicted value and the regression standardized residuals, as shown in Figure 14. Homoscedasticity occurs when the residuals are equal across the standardized predicted values. It is safe to assume homoscedasticity when scatterplot points of the regression standardized predicted values and regression standardized

residual values appear mostly rectangular (Laerd Statistics, 2020). Upon visual inspection of a plot of standardized residuals versus standardized predicted values, homoscedasticity was confirmed.

**Figure 14**

*SRSS-IE Overall and Risk Factors Composite Scores Homoscedasticity*



The final assumption, normal distribution of residuals, was assessed through a visual inspection of a Normal Probability Plot (Normal P-P Plot). The Normal P-P Plot is one of the best graphical methods of assessing the normality of the residuals (Laerd Statistics, 2020). According to Laerd Statistics (2020), when the residuals are normally distributed, the points align closely with the diagonal line, recognizing they will never be perfectly aligned. The Normal P-P Plot for the SRSS-IE and risk factors composite score is shown in Figure 15, and demonstrates an overall normal distribution, verifying the final assumption for linear regression.

**Figure 15**

*SRSS-IE Overall and Risk Factors Composite Distribution of Residuals P-P Plot*

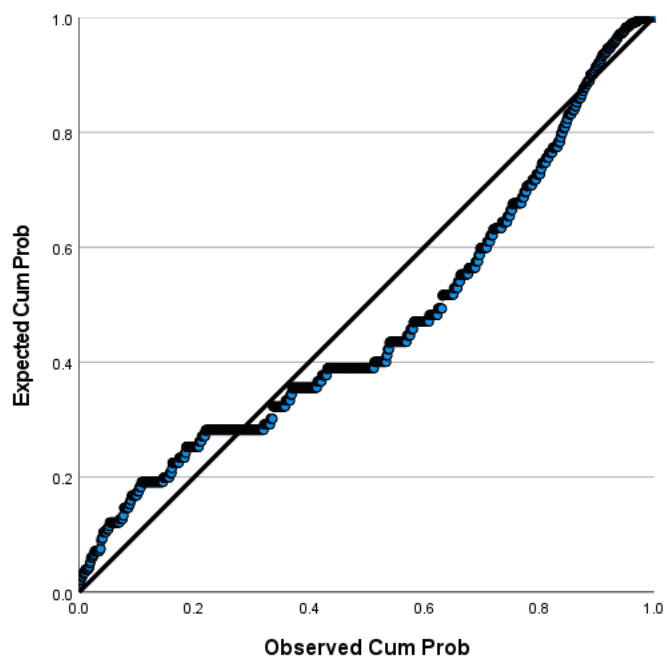


Table 32 provides the descriptive statistics for this simple linear regression. The mean SRSS-IE score for the final data set ( $N = 1,349$ ) was 4.23 ( $SD = 4.59$ ), and the mean risk factors composite score was 2.47 ( $SD = 2.13$ ).

**Table 32**

*Linear Regression Descriptive Statistics - SRSS-IE Overall and Risk Factors Composite Scores*

	<i>M</i>	<i>SD</i>	<i>N</i>
SRSS-IE Composite	4.23	4.59	1,349
Risk Factors Composite	2.47	2.13	1,349

As shown in Table 33, the risk factors composite score predicted the SRSS-IE composite score,  $F(1, 1347) = 659.41, p < .001$ , accounting for 33% of the variance in the SRSS-IE composite score, a medium effect size according to Cohen (1988). Each additional risk factors composite point led to a 1.24, 95% CI [1.14, 1.33], increase on the SRSS-IE composite score, as

shown in Table 34. The estimated prediction equation was: SRSS-IE Composite Score = 1.19 + (1.24 \* Risk Factors Composite Score). Predictions were made, using the prediction equation, to determine the SRSS-IE score for the range of risk factors composite scores and they can be found in Table 35.

**Table 33**

*Summary of Linear Regression Model for SRSS-IE Overall and Risk Factors Composite Scores*

$R^2$	Adjusted $R^2$	SEE	Change Statistics					DW
			$R^2$ change	F change	df1	df2	$p$	
.33	.33	3.76	.33	659.41	1	1,347	<.001	1.787

*Note.* Predictor: 2021 risk factors composite.

**Table 34**

*Coefficients of Linear Regression Model for SRSS-IE Overall and Risk Factors Composite Score*

	Unstandardized Coefficients			95% Confidence Interval	
	B	SE	$p$	Lower	Upper
(Constant)	1.19	0.16	<.001	0.88	1.50
Risk Factors Composite	1.24	0.05	<.001	1.14	1.33

*Note.* Dependent variable: 2021 SRSS-IE composite score.

**Table 35***Predicted SRSS-IE Overall Composite Score Based on Risk Factors Composite*

Risk Factors Composite Score	Predicted SRSS-IE Overall Composite Score
0	1.19
1	2.43
2	3.67
3	4.91
4	6.15 <sup>1</sup>
5	7.39 <sup>1</sup>
6	8.63 <sup>1</sup>
7	9.87 <sup>1</sup>
8	11.11 <sup>1</sup>
9	12.35 <sup>1</sup>
10	13.59 <sup>2</sup>
11	14.83 <sup>2</sup>
12	16.07 <sup>2</sup>

*Note.* <sup>1</sup> Meets the combined threshold for SRSS-IE moderate-risk. <sup>2</sup> Meets the combined threshold for SRSS-IE high-risk.

Using the results of the predicted SRSS-IE overall composite score based on the risk factors composite, the next step was to round the predicted SRSS-IE composite scores. While rounding numbers can impact accuracy, the SRSS-IE composite scores are always whole numbers, and never decimals. Figure 16 shows the rounded results, color-coded to reflect low-risk (green), moderate-risk (yellow), and high-risk (red) ranges, according to the universal screener.

**Figure 16***SRSS-IE Overall Composite Prediction Table*

<b>Risk Factor Composite Score</b>	<b>SRSS-IE Overall Composite</b>
0	1
1	2
2	4
3	5
4	6
5	7
6	9
7	10
8	11
9	12
10	14
11	15
12	16

*Note.* Green = low-risk range; yellow = moderate-risk range; red = high-risk range.

The results from the rounded prediction table were applied to 20 randomly selected cases from the original data set representing the continuum of risk factors scores. The goal was to determine the accuracy between the projected SRSS-IE composite score and the actual composite score rated by the classroom teacher. The individual raw data and scaled scores are shown in Figure 17, with the scaled scores used to create the risk factors composite shaded gray. The risk factors composite score predicted the SRSS-IE risk level (i.e., low, moderate, or high), with 60% accuracy among these 20 students. There was one instance (i.e., Case ID 541977) when the predicted risk level was two levels from the actual composite risk level, otherwise, when the prediction was not the same, the level was separated by one.

**Figure 17**

*SRSS-IE Overall Composite Prediction Accuracy*

Case ID	Lunch Status	Lunch Status Score	ODR	ODR Score	Absenteeism	Absenteeism Score	Homelessness	Homelessness Score	Reading Performance	Rdg Perf Score	Math Performance	Math Perf Score	Gender2021	Gender Score	Ethnicity2021	Risk Factor Composite	Predicted by RF Composite	Actual SRSS-IE Composite
218433	F	2	0	0	19.28	2			5.0	0	4.7	1	F	0	C	5	7	10
221544	F	2	0	0	13.56	2	2.4	1	2	2	1.3	2	M	1	C	9	12	6
318036	P	0	1	0	6.1	1			5.2	0	5.0	0	M	1	C	1	2	0
519894	R	1	0	0	0.58	0			2.8	2	1.7	2	F	0	C	5	7	10
524722	P	0	3	1	10.47	2			2.0	2	2.7	2	M	1	C	7	10	13
541977	P	0	2	1	9.98	1			4.6	1	5.0	0	M	1	C	3	5	26
559147	P	0	2	1	3.1	1			5.2	0	5.0	0	M	1	C	2	4	4
559589	P	0	0	0	0	0			5.4	0	5.0	0	M	1	C	0	1	0
561357	P	0	3	1	8.72	1			5.0	0	5.0	0	M	1	C	2	4	4
937737	F	2	0	0	4.94	1			5.5	0	5.0	0	F	0	C	3	5	0
938740	F	2	1	0	0.97	0			5.4	0	5.0	0	M	1	C	2	4	11
940797	P	0	0	0	0.58	0			5.0	0	5.0	0	F	0	C	0	1	0
944401	R	1	4	1	7.46	1			4.4	1	5.0	0	F	0	C	4	6	15
953105	F	2	0	0	2.52	0			5.4	0	5.0	0	M	1	C	2	4	0
955740	F	2	0	0	10.37	2			2.3	2	1.7	2	F	0	C	8	11	13
959888	P	0	2	1	4.55	1			4.4	1	5.0	0	M	1	C	3	5	9
1008100	F	2	0	0	7.75	1			4.6	1	2.7	2	F	0	C	6	9	5
1015495	P	0	0	0	17.54	2			3.6	1	4.3	1	F	0	C	4	6	9
1290555	R	1	16	2	4.94	1			2.3	2	1.3	2	M	1	C	8	11	20
1290606	F	2	1	0	5.04	1			2.4	2	5.0	0	M	1	C	5	7	7

### ***Multiple Regression Analysis***

A multiple regression analysis was performed to predict the SRSS-IE composite score from the influence of the individual risk factors (i.e., lunch status [serving as a proxy for socioeconomic status], office discipline referrals, absenteeism, homelessness, reading performance, and math performance). To analyze the impact the independent risk factors had on the SRSS-IE composite score, including gender (i.e., boys, when girls were held constant) and ethnicity (i.e., Asian, Black, Hispanic, Multi-race, Native American, and Pacific Islander, when Caucasian was held constant), various multiple regression models were used.

To begin the multiple regression process, 104 studentized residuals greater than  $\pm 3$  standard deviations were removed, and an additional 179 cases were omitted due to missing scores, leaving 1,128 cases used in the models. A variety of models were analyzed to find the largest coefficient of multiple determination ( $R^2$ ) that would represent smaller differences between the observed data and the fitted values. Table 36 summarizes the models that aligned with the highest  $R^2$  values. The risk factor homelessness was removed from the models when the correlation was not statistically significant, and its removal did not impact the  $R^2$  value.

**Table 36**

*Summary of Multiple Regression Models for SRSS-IE Overall Composite Score*

Model	$R$	$R^2$	Adjusted $R^2$	SEE	Change Statistics			
					$R^2$ Change	F Change	$p$	DW
1	.66 <sup>a</sup>	.44	.43	3.55	.44	179.416	< .001	1.872
2	.65 <sup>b</sup>	.44	.43	3.50	.44	148.586	< .001	1.857
3	.67 <sup>c</sup>	.45	.45	3.49	.45	91.739	< .001	1.845
4	.68 <sup>d</sup>	.45	.45	3.48	.46	84.713	< .001	1.836

*Note.* <sup>a</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge.

<sup>b</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge, gender.

<sup>c</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge, ethnicity.

<sup>d</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge, gender, ethnicity.



As shown in Table 37, model 4, the model with the greatest  $R^2$ , the multiple regression model, statistically significantly predicted the SRSS-IE composite score,  $F(11, 1116) = 84.713$ ,  $p < .001$ ,  $\text{adj. } R^2 = .45$ . The variables lunch status, ODRs, absenteeism, reading challenge, math challenge, Asian, Native American, and boys added statistical significance to the prediction,  $p < .001$ . The variables Black, Hispanic, and Multi-race did not add statistical significance, but their removal negatively impacted the  $R^2$  statistic. Regression coefficients and standard errors can be found in Table 33. The estimated prediction equation was: SRSS-IE Composite Score = 1.05 + (0.70 \* Lunch Status Score) + (6.93 \* ODR Score) + (0.67 \* Absenteeism Score) + (1.37 \* Reading Score) + (2.01 \* Math Score) + (0.61 \* Boy) – (1.82 \* Asian) – (0.61 \* Black) + (0.82 \* Hispanic) + (0.19 \* Multi-race) + (1.56 \* Native American).

**Table 37**

*Summary of Multiple Regression Model for SRSS-IE Composite Score and Risk Factors*

SRSS-IE Composite	<i>B</i>	95% CI for <i>B</i>		<i>SE B</i>	$\beta$	$R^2$	$\Delta R^2$
		<i>LL</i>	<i>UL</i>				
Model						.46	.45***
Constant	1.05***	0.65	1.44	.20			
Lunch Status	0.70***	0.43	0.96	.13	.14***		
ODR	6.93***	5.84	8.01	.55	.29***		
Absenteeism	0.67***	0.36	0.98	.18	.10***		
Reading	1.37***	0.98	1.75	.20	.20***		
Math	2.01***	1.59	2.43	.57	.03***		
Boy	0.61**	0.20	1.02	.21	.07**		
Asian	-1.82**	-3.06	-0.59	.63	-.07**		
Black	-0.61	-1.30	0.09	.35	-.04		
Hispanic	0.82	-0.31	1.94	.57	.03		
Multi-race	0.19	-0.73	1.12	.47	.01		
Native American	1.56*	0.14	2.97	.72	.05*		

*Note.* Model – “Enter” method in SPSS Statistics; *B* = unstandardized regression coefficient; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; *SE B* = standard error of the coefficient;  $\beta$  = standardized coefficient;  $R^2$  = coefficient of determination;  $\Delta R^2$  = adjusted  $R^2$ .

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

The prediction equation was applied to the same twenty randomly selected students representing the continuum of risk factors scores. This was done to determine accuracy in a select group and to compare accuracy levels between the use of the prediction equation and the risk factors composite score as the predictor. As previously mentioned, to protect anonymity, all randomly selected students came from the ethnicity group Caucasian because it was the largest ethnicity group represented in the study. Figure 18 shows that 13 of the 20 cases, or 65%, were predicted at the same risk level as the actual teacher-completed screening in 2021. This was a slight increase from the risk factors composite score predicting the SRSS-IE overall composite score. Two cases, (i.e., 541977 and 938740) were predicted two levels lower than the teacher screener. All other predictions that were not the same differed by one risk level.

**Figure 18**

*SRSS-IE Overall Composite Risk Level Prediction Equation Comparison*

Case ID	Lunch Status	Lunch Status Score	ODR	ODR Score	Absenteeism	Absenteeism Score	Homelessness	Homelessness Score	Reading Performance	Rdg Perf Score	Math Performance	Math Perf Score	Gender2021	Gender Score	Ethnicity2021	Equation Predicted SRSS-IE Composite	Actual SRSS-IE Composite
218433	F	2	0	0	19.28	2			5.0	0	4.7	1	F	0	C	6	10
221544	F	2	0	0	13.56	2	2.4	1	2	2	1.3	2	M	1	C	11	6
318036	P	0	1	0	6.1	1			5.2	0	5.0	0	M	1	C	2	0
519894	R	1	0	0	0.58	0			2.8	2	1.7	2	F	0	C	9	10
524722	P	0	3	1	10.47	2			2.0	2	2.7	2	M	1	C	17	13
541977	P	0	2	1	9.98	1			4.6	1	5.0	0	M	1	C	11	26
559147	P	0	2	1	3.1	1			5.2	0	5.0	0	M	1	C	9	4
559589	P	0	0	0	0	0			5.4	0	5.0	0	M	1	C	2	0
561357	P	0	3	1	8.72	1			5.0	0	5.0	0	M	1	C	9	4
937737	F	2	0	0	4.94	1			5.5	0	5.0	0	F	0	C	3	0
938740	F	2	1	0	0.97	0			5.4	0	5.0	0	M	1	C	3	11
940797	P	0	0	0	0.58	0			5.0	0	5.0	0	F	0	C	1	0
944401	R	1	4	1	7.46	1			4.4	1	5.0	0	F	0	C	11	15
953105	F	2	0	0	2.52	0			5.4	0	5.0	0	M	1	C	3	0
955740	F	2	0	0	10.37	2			2.3	2	1.7	2	F	0	C	11	13
959888	P	0	2	1	4.55	1			4.4	1	5.0	0	M	1	C	11	9
1008100	F	2	0	0	7.75	1			4.6	1	2.7	2	F	0	C	9	5
1015495	P	0	0	0	17.54	2			3.6	1	4.3	1	F	0	C	6	9
1290555	R	1	16	2	4.94	1			2.3	2	1.3	2	M	1	C	24	20
1290606	F	2	1	0	5.04	1			2.4	2	5.0	0	M	1	C	6	7

### *Research Question 2*

**What is the correlation between the SRSS-IE internalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?**

The data set utilized for research question 1 was the same data set used to initiate the investigation of the correlation among the SRSS-IE internalizing composite score and the predictive factors. The mean SRSS-IE internalizing composite score for all participants, as shown in Table 38, was 1.86 ( $SD = 2.73$ ), and the median score was 1. The minimum SRSS-IE internalizing composite score was 0 and the maximum score was 15, which was also the highest possible score on the measure. The average risk factor score was 2.53 ( $SD = 2.17$ ), and scores ranged from 0 to 10. The greatest score possible for the risk factors composite was 12.

**Table 38**

*Mean SRSS-IE Internalizing and Risk Factors Composite Scores*

Scores ( $N = 1,411$ )	Mean	Median	$SD$	Minimum	Maximum
SRSS-IE Internalizing Composite	1.86	1	2.73	0	15
Risk Factors Composite	2.53	2	2.17	0	10

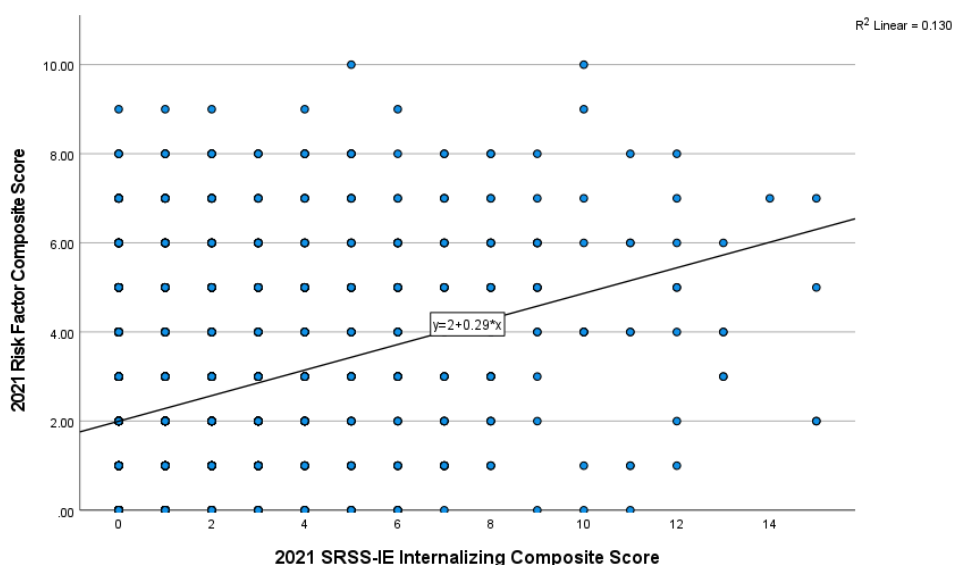
*Note.* SRSS-IE internalizing maximum score = 15; Low risk = 0-1, Moderate risk = 2-3, High risk = 4-15. Risk factor maximum score = 12.

In anticipation of proceeding with the analysis and running the correlations to identify factors that predict the SRSS-IE internalizing composite score, the data were explored to determine whether this subset met the parametric assumptions to use Pearson product moment correlation. Scale of measurement, the first assumption, was verified. The SRSS-IE internalizing composite score scale (i.e., 0 – 15) and the risk factor score scale (i.e., 0 – 12) were continuous ratio scales. The second verified statistical assumption, shown in Figure 19, demonstrates that a

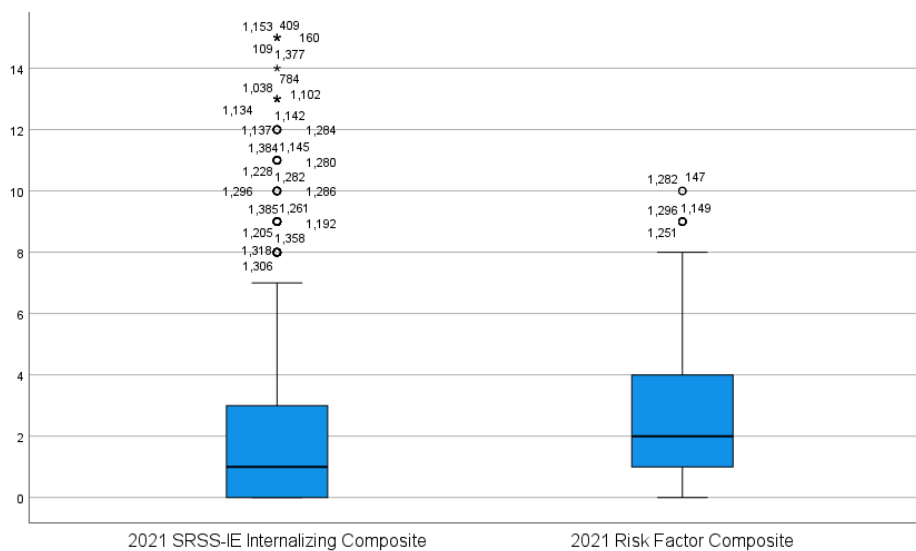
linear relationship exists between the SRSS-IE internalizing composite score and the risk factors composite score.

**Figure 19**

*Scatterplot of 2021 SRSS-IE Internalizing and Risk Factors Composite Scores*



The next assumption, the absence of outliers, was violated. Outliers are scores that could have an exaggerated influence on the effect value in the correlations. Outliers were present for both variables, totaling 89 outliers. The SRSS-IE internalizing composite score had 81 outliers and the risk factors composite score had 8 outliers as shown in Figure 20. Due to the presence of outliers, Spearman's rho correlation, a non-parametric inferential statistical test, was used to explore the association between the SRSS-IE internalizing and the risk factors composite scores.

**Figure 20***SRSS-IE Internalizing and Risk Factors Composite Score Outliers*

A Spearman's rho correlation between the SRSS-IE internalizing composite score and the risk factors composite score was calculated to determine the strength of the relationship. Table 35 shows the correlation coefficients demonstrating the strength of the relationship between the two risk composite scores. Furthermore, also found in Table 39, are the correlation coefficients for each of the risk factors that go into making up the risk factors composite score. The risk factors composite score and the individual risk factors were positively correlated with the SRSS-IE internalizing composite score and showed statistical significance. The risk factors composite score had the strongest positive correlation with the SRSS-IE internalizing score, although small,  $r_s(1,409) = .37, p < .001$ . The individual risk factor with the strongest relationship to the SRSS-IE internalizing composite score was increased math challenge,  $r_s(1,223) = .36, p < .001$ , followed by increased financial challenge,  $r_s(1,409) = .29, p < .001$ .

**Table 119**

*Spearman's rho Correlation Summary for Internalizing Composite and Risk Factors*

	<i>r</i>	<i>p</i>	<i>N</i>
SRSS-IE Internalizing Composite	1.00	--	1,411
Risk Factors Composite	.37	< .001	1,411
Increased Financial Challenge	.29	< .001	1,411
ODR	.12	< .001	1,411
Absenteeism	.21	< .001	1,411
Homelessness	.08	.004	1,411
Increased Reading Challenge	.25	< .001	1,400
Increased Math Challenge	.36	< .001	1,225

Following the literature, as described in RQ1, it was necessary to dig deeper into the relationships these risk factors have with mental health symptoms that are associated with internalizing behaviors. Therefore, correlations were run using these variables to determine which of them had the highest coefficients with the SRSS-IE internalizing composite score. Additionally, the correlations were disaggregated by demographic groups to identify relationship strength for use in the regression model. Table 40 shows the correlation coefficients.

Overall, the relationships between the SRSS-IE internalizing and risk factors composite scores were weaker, compared to the overall SRSS-IE. The SRSS-IE internalizing composite score and the risk factors composite score showed a small, positive correlation that was statistically significant,  $r_s(1,409) = .37, p < .001$ . Each of the individual risk factors demonstrated small, positive correlations with the SRSS-IE internalizing composite that was statistically significant, with increased math challenge being the strongest,  $r_s(1,409) = .36, p < .001$ , followed by increased financial challenge,  $r_s(1,409) = .29, p < .001$ . The only demographic group that had a moderate, positive relationship with statistical significance was Asian,  $r_s(35) = .51, p = .001$ . All remaining groups demonstrated small, positive correlations, although Pacific Islander lacked statistical significance.

**Table 40**

*Spearman's rho Correlation Summary for SRSS-IE Internalizing, Risk Factors Composite, and Individual Risk Factors by Demographic Group*

Risk Factor	Population															
	Grade		Gender		Lunch Status			Ethnicity								
		4	5	B	G	P	R	F	A	B	C	H	M	NA	PI	
Composite	<i>r</i>	.37	.37	.37	.36	.38	.22	.43	.27	.51*	.32	.33	.43	.36	.40	.50
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	.001	<.001	.001	<.001	<.001	.002	.001	.033	.667
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Increased Financial Challenge	<i>r</i>	.29	.31	.27	.29	.28	--	--	--	.43	.12	.27	.30	.30	.24	.50
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	--	--	--	.009	.132	<.001	.032	.009	.223	.667
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Office Discipline Referrals (ODR)	<i>r</i>	.12	.16	.07	.14	.11	.01	.09	.15	.24	.21	.06	.42	.11	-.11	--
	<i>p</i>	<.001	<.001	.040	<.001	.003	.811	.504	.001	.159	.007	.038	.002	.322	.581	--
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Absenteeism	<i>r</i>	.21	.17	.25	.15	.27	.13	.38	.10	.34	.11	.17	.35	.34	.33	.00
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	.004	.031	.039	.173	<.001	.011	.037	.087	1.00
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	2827	3
Homelessness	<i>r</i>	.08	.07	.08	.03	.13	--	--	.08	--	.23	.02	.01	.01	--	--
	<i>p</i>	.004	.060	.033	<.001	<.001	--	--	.112	--	.003	.471	.947	.963	--	--
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Increased Reading Challenge	<i>r</i>	.25	.29	.21	.27	.22	.16	.24	.17	.25	.25	.22	.31	.12	.28	.50
	<i>p</i>	<.001	<.001	<.001	.468	<.001	<.001	.077	<.001	.132	.001	<.001	.024	.313	.162	.667
	<i>N</i>	1,400	693	707	711	689	908	55	437	37	166	1,040	52	75		3
Increased Math Challenge	<i>r</i>	.36	.38	.33	.37	.34	.23	.34	.29	.42	.29	.35	.20	.33	.28	1.00
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	.014	<.001	.012	<.001	<.001	.055	.006	.166	--
	<i>N</i>	1,225	603	622	613	612	767	53	405	35	148	901	44	67	26	3

*Note.* Gender: B – boys, G – girls; Lunch Status: P – paid, R – reduce paid, F – free; Ethnicity: A – Asian, B – Black, C – Caucasian, H – Hispanic, M – Multi-race, NA – Native American, PI – Pacific Islander. \* Moderate correlation.



The SRSS-IE identifies a risk threshold of low (0-1), moderate (2-3), and high (4-15) risk that is specific to the internalizing measure. Measures of central tendency and dispersion were calculated, and upon evaluation of the mean SRSS-IE internalizing composite scores by demographic group, it was discovered that the average score of students in the reduced paid ( $M = 2.11$ ,  $SD = 2.83$ ) and free lunch ( $M = 2.94$ ,  $SD = 3.26$ ) statuses met the moderate-risk threshold, as shown in Table 41. Additionally, the moderate-risk threshold was met by the demographic groups Asian ( $M = 2.05$ ,  $SD = 2.95$ ), Black ( $M = 2.13$ ,  $SD = 2.80$ ), Hispanic ( $M = 3.35$ ,  $SD = 3.70$ ), Multi-race ( $M = 2.08$ ,  $SD = 2.90$ ), and Native American ( $M = 3.32$ ,  $SD = 2.36$ ). The average scores of all other groups were in the low-risk range for the internalizing measure. Most groups had a median score of 1 or less. However, the demographic groups free lunch and Hispanic had a median score of 2, and the demographic group Native American had a median score of 4. Additionally, for the Native American group, the maximum score was 8, whereas the other groups were 12 or more.

**Table 41***Mean SRSS-IE Internalizing Composite Scores by Demographic Group*

	<i>N</i>	Mean	Median	<i>SD</i>	Minimum	Maximum
Internalizing Composite Grade	1,411	1.86	1	2.73	0	15
4	702	1.82	1	2.54	0	15
5	709	1.90	0	2.92	0	15
Gender						
Boys	719	1.76	1	2.59	0	15
Girls	692	1.96	1	2.84	0	15
Lunch Status						
Paid	910	1.31	0	2.25	0	15
Reduced	55	2.11 <sup>1</sup>	1	2.83	0	12
Free	446	2.94 <sup>1</sup>	2	3.26	0	15
Ethnicity						
Asian	37	2.05 <sup>1</sup>	1	2.95	0	13
Black	167	2.13 <sup>1</sup>	1	2.80	0	15
Caucasian	1,047	1.68	0	2.63	0	15
Hispanic	52	3.35 <sup>1</sup>	2 <sup>1</sup>	3.70	0	12
Multi-race	77	2.08 <sup>1</sup>	1	2.90	0	14
Native American	28	3.32 <sup>1</sup>	4 <sup>2</sup>	2.36	0	8
Pacific Islander	3	1.00	0	1.75	0	3

*Note.* <sup>1</sup> Meets the moderate-risk threshold for the internalizing measure. <sup>2</sup> Meets the high-risk threshold for the internalizing measure.

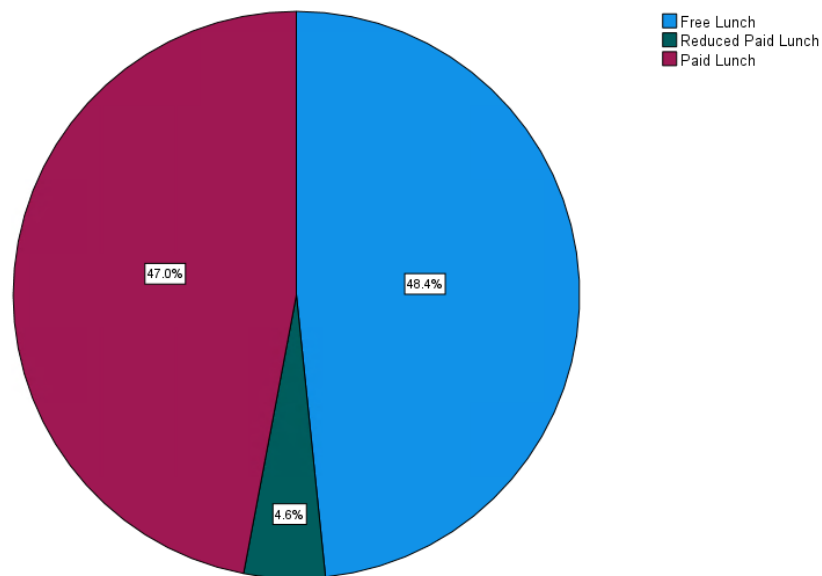
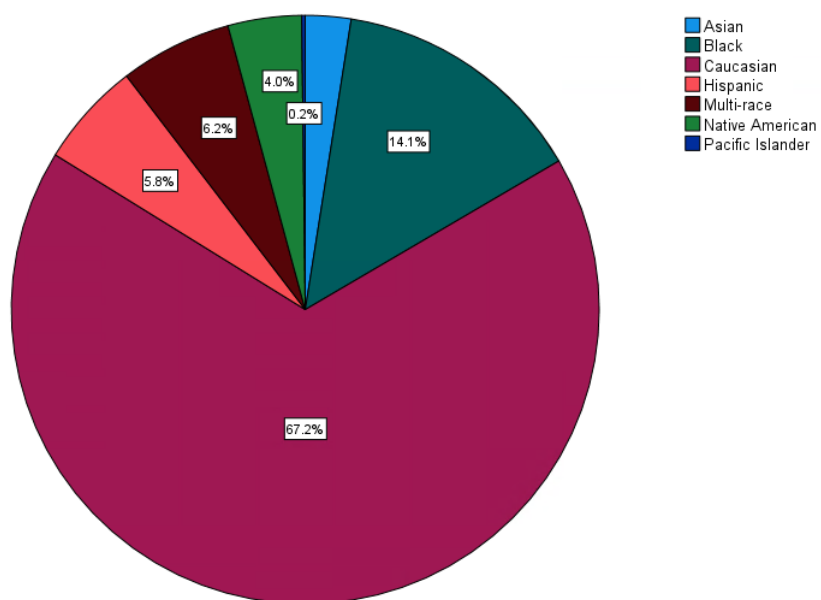
Table 42 intersects risk factors composite scores with corresponding SRSS-IE mean internalizing composite scores and indicates the moderate and high thresholds. The mean SRSS-IE composite score for students with a risk factors composite score of 0 through 2 was in the low-risk range for internalizing behavior. Beginning at a risk factors composite score of 3, the average SRSS-IE internalizing composite score met the moderate-risk level, with risk factors composite scores of 8 and 10 meeting the high-risk level threshold. While 30 students had a risk factors composite score of 8, it should be noted that there were only 2 students with a risk factor score of 10.

**Table 42***Mean SRSS-IE Internalizing Composite Score and Risk Factors Composite Score Intersection*

Risk Factors Composite Score	<i>N</i>	<i>M</i>	<i>SD</i>
0	233	0.91	1.81
1	362	1.09	1.99
2	244	1.39	2.33
3	153	2.06 <sup>1</sup>	2.73
4	136	2.70 <sup>1</sup>	3.21
5	118	3.13 <sup>1</sup>	3.08
6	75	3.77 <sup>1</sup>	3.45
7	52	3.50 <sup>1</sup>	3.70
8	30	4.17 <sup>2</sup>	3.21
9	6	3.83 <sup>1</sup>	3.71
10	2	7.50 <sup>2</sup>	3.54
11	0	--	--
12	0	--	--

*Note.* <sup>1</sup> Meets the moderate-risk threshold for the internalizing measure. <sup>2</sup> Meets the high-risk threshold for the internalizing measure.

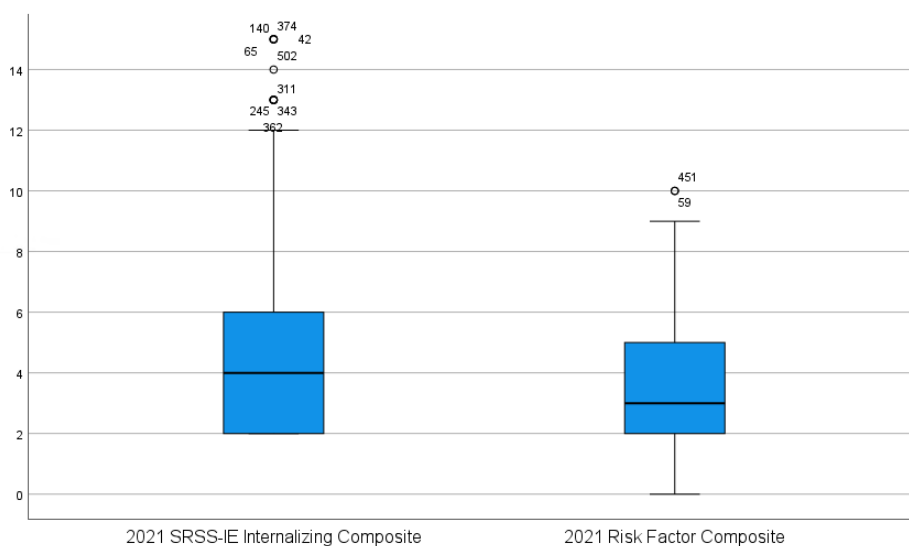
Like the process used in analyzing the SRSS-IE composite scores, the researcher felt it necessary to focus analysis on students with SRSS-IE internalizing scores of two or higher. An internalizing score of 2 is the threshold for moderate-risk on the universal screener. This yielded a purposive sample size of 519. Of this purposive sample, 46.6% were fourth graders, 53.4% were fifth graders, 49.7% were boys, and 50.3% were girls. As shown in Figure 21, 47.0% of the purposive sample paid for school lunches, 4.6% received reduced paid lunches, and 48.4% received free lunches. School lunch was used as a substitute for socioeconomic status. Finally, as shown in Figure 22, the purposive sample was comprised of students who were 67.2% White, 14.1% Black, 6.2% Multi-race, 5.8% Hispanic, 4.0% Native American, 2.0% Asian, and 0.2% Pacific Islander.

**Figure 21***Internalizing Purposive Sample (2+) Socioeconomic Status***Figure 22***Internalizing Purposive Sample (2+) Ethnicity Status*

In preparation for running correlations with the internalizing purposive sample, the parametric assumptions were tested. The first two assumptions, continuous ratio scales and linear relationship were confirmed by the population. The third assumption, absence of outliers, was violated with 13 total outliers. There were 10 outliers found in the SRSS-IE internalizing composite and 2 outliers found in the risk factors composite, as shown in Figure 23. As a result, Spearman rho's correlation was used to further explore the association between the purposive sample variables.

**Figure 23**

*Purposive Sample (2+) SRSS-IE Internalizing and Risk Factors Composite Score Outliers*



The relationship between the SRSS-IE internalizing composite score for a score of two or more, the risk factors composite, and individual risk factors were studied using Spearman's rho correlations. Table 43 shows the correlation coefficients of the purposive sample compared to the population. The relationship between the SRSS-IE internalizing composite score and the risk factors composite score was once again the strongest relationship for the purposive sample. Although statistically significant, the correlation was small,  $r_s(517) = .20, p < .001$ . The

individual risk factors had smaller correlations that were all significant except for homelessness ( $p = .142$ ). The individual risk factor with the strongest relationship to the SRSS-IE internalizing composite score was increased math challenge,  $r_s(451) = .18, p < .001$ , followed by increased reading challenge,  $r_s(515) = .68, p < .001$ .

**Table 43**

*Correlation Summary for SRSS-IE Internalizing and Risk Factors – Purposive Sample (2+)*

	<i>Population</i>			<i>Purposive Sample (2+)</i>		
	<i>N</i>	<i>r</i>	<i>p</i>	<i>N</i>	<i>r</i>	<i>p</i>
Risk Factors Composite	1,411	.37	< .001	519	.20	< .001
Increased Financial Challenge	1,411	.29	< .001	519	.12	.007
ODR	1,411	.12	< .001	519	.09	.041
Absenteeism	1,411	.21	< .001	519	.13	.004
Homelessness	1,411	.08	.004	519	.07	.142
Increased Reading Challenge	1,400	.25	< .001	517	.16	< .001
Increased Math Challenge	1,225	.36	< .001	453	.18	< .001

*Note.* Purposive Sample (2+) includes only students rated  $\geq 2$  on the SRSS-IE internalizing composite.

The correlation coefficients were then analyzed across demographic groups and are found in Table 44. The largest positive correlation, albeit small, among the various demographic groups with the SRSS-IE internalizing composite score occurred for reduced lunch status,  $r_s(22) = .46, p = .023$ . The demographic groups including grade, gender, and lunch status had smaller, positive, statistically significant relationships. Black,  $r_s(71) = .35, p = .003$ , and Caucasian,  $r_s(347) = .19, p < .001$ , were the only ethnicities that demonstrated a statistically significant relationship with the SRSS-IE internalizing measure.

**Table 44**

*Correlation Summary of Purposive Sample (2+) SRSS-IE Internalizing, RF Composite, and Individual RFs by Demographic Group*

Risk Factor	Population															
	Grade		Gender		Lunch Status			Ethnicity								
		4	5	B	G	P	R	F	A	B	C	H	M	NA	PI	
Composite	<i>r</i>	.20	.26	.15	.16	.25	.15	.46	.16	-.32	.35	.19	.15	.23	.20	--
	<i>p</i>	<.001	<.001	.021	.009	<.001	.016	.023	.011	.289	.003	<.001	.420	.321	.262	--
	<i>n</i>	519	271	248	258	261	244	24	251	13	73	349	30	21	32	1
Increased Financial Challenge	<i>r</i>	.12	.14	.12	.08	.16	--	--	--	-.52	.19	.13	.11	-.01	.18	--
	<i>p</i>	.007	.024	.054	.212	.008	--	--	--	.071	.099	.019	.574	.964	.320	--
	<i>n</i>	519	271	248	258	261	244	24	251	13	73	349	30	21	32	1
Office Discipline Referrals (ODR)	<i>r</i>	.09	.21	-.06	.09	.13	.02	-.18	.14	.20	.20	.01	.49	-.31	.12	--
	<i>p</i>	.041	<.001	.389	.145	.043	.751	.397	.032	.523	.094	.827	.006	.177	.949	--
	<i>n</i>	519	271	248	258	261	244	24	251	13	73	349	30	21	32	1
Absenteeism	<i>r</i>	.13	.17	.05	.06	.19	.11	.42	.07	.30	.18	.12	-.01	-.03	.16	--
	<i>p</i>	.004	.004	.412	.337	.002	.085	.044	.307	.324	.128	.026	.976	.896	.390	--
	<i>n</i>	519	271	248	258	261	244	24	251	13	73	349	30	21	32	1
Homelessness	<i>r</i>	.07	.03	.08	-.03	.12	--	--	.07	--	.19	.09	-.22	--	--	--
	<i>p</i>	.142	.631	.205	.636	.050	--	--	.240	--	.115	.095	.245	--	--	--
	<i>n</i>	519	271	248	258	261	244	24	251	13	73	349	30	21	32	1
Increased Reading Challenge	<i>r</i>	.16	.24	.08	.17	.16	.16	.21	.10	-.29	.19	.16	.12	.19	.05	--
	<i>p</i>	<.001	<.001	.205	.007	.009	.014	.334	.116	.343	.114	.002	.514	.423	.773	--
	<i>n</i>	517	269	248	256	261	244	24	249	13	73	348	30	20	32	1
Increased Math Challenge	<i>r</i>	.18	.25	.16	.20	.15	.09	.48	.16	-.23	.24	.18	.18	.41	.16	--
	<i>p</i>	<.001	<.001	.014	.002	.019	.182	.022	.017	.456	.057	.002	.378	.072	.406	--
	<i>n</i>	453	223	230	223	230	203	23	227	13	65	299	27	20	28	1

*Note.* Gender: B – boys, G – girls; Lunch Status: P – paid, R – reduce paid, F – free; Ethnicity: A – Asian, B – Black, C – Caucasian, H – Hispanic, M – Multi-race, NA – Native American, PI – Pacific Islander. \* Moderate correlation.

There were 519 students in the purposive sample, concluding over 35% of the population scored a 2 or more on the SRSS-IE internalizing measure. Of the students in the purposive sample who were rated at a two or more, the average SRSS-IE score was 4.62 ( $SD = 2.81$ ), as shown in Table 45, compared to the mean of 1.86 ( $SD = 2.73$ ) for the total population. Additionally, the average score of the SRSS-IE internalizing measure met the threshold for high-risk. The mean risk factors composite score for the purposive sample was 3.52 ( $SD = 2.32$ ), compared to the district's fourth and fifth grade population mean of 2.53 ( $SD = 2.17$ ).

**Table 125**

*Mean Internalizing Composite Score Comparison – Purposive Sample (2+)*

Group	<i>N</i>	<i>M</i>	Median	<i>SD</i>	Minimum	Maximum
Total Population	1,411					
SRSS-IE Internalizing		1.86	1	2.73	0	15
Risk Factor		2.53	2	2.17	0	10
Purposive Sample	519					
SRSS-IE Internalizing		4.62 <sup>2</sup>	4 <sup>2</sup>	2.81	2	15
Risk Factor		3.52	3	2.32	0	10

*Note.* The purposive sample included SRSS-IE internalizing composite scores  $\geq 2$ . SRSS-IE internalizing maximum score possible = 15; Risk factors composite maximum score possible = 12. <sup>1</sup> Meets the moderate-risk threshold for the internalizing measure. <sup>2</sup> Meets the high-risk threshold for the internalizing measure.

Continuing the analysis of the scores of 2 or more on the SRSS-IE internalizing composite compared to the entire population, Table 46 shows that the mean score for every group met the high-risk threshold for the internalizing measure, except for Pacific Islander ( $N = 1$ ). The demographic group Hispanic ( $N = 30$ ) had the highest mean score ( $M = 5.47$ ,  $SD = 3.60$ ).



**Table 46***Mean SRSS-IE Internalizing Composite Score by Demographic Group – Purposive Sample (2+)*

Group	Population			Purposive Sample (2+)		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Total Group	1,411	1.86	2.73	519	4.62 <sup>2</sup>	2.81
Grade						
Grade 4	702	1.82	2.54	271	4.23 <sup>2</sup>	2.61
Grade 5	709	1.90	2.92	248	5.04 <sup>2</sup>	2.97
Gender						
Boys	719	1.76	2.59	258	4.46 <sup>2</sup>	2.65
Girls	692	1.96	2.87	261	4.78 <sup>2</sup>	2.96
Lunch Status						
Paid Lunch	910	1.31	2.25	244	4.26 <sup>2</sup>	2.54
Reduced Lunch	55	2.11 <sup>1</sup>	2.83	24	4.50 <sup>2</sup>	2.81
Free Lunch	446	2.94 <sup>1</sup>	3.26	251	4.98 <sup>2</sup>	3.02
Ethnicity						
Asian	37	2.05 <sup>1</sup>	2.95	13	5.15 <sup>2</sup>	3.11
Black	167	2.13 <sup>1</sup>	2.80	73	4.49 <sup>2</sup>	2.78
Caucasian	1,047	1.68	2.63	349	4.58 <sup>2</sup>	2.79
Hispanic	52	3.35 <sup>1</sup>	3.70	30	5.47 <sup>2</sup>	3.60
Multi-race	77	2.08 <sup>1</sup>	2.85	32	4.66 <sup>2</sup>	2.81
Native American	28	3.32 <sup>1</sup>	2.36	21	4.29 <sup>2</sup>	1.88
Pacific Islander	3	1.00	1.73	1	3.00 <sup>1</sup>	--

*Note.* Purposive Sample (2+) includes only scores rated  $\geq 2$  on the internalizing measure. <sup>1</sup> Meets the threshold for moderate-risk for the internalizing measure. <sup>2</sup> Meets the threshold for high-risk for the internalizing measure.

Intersecting the risk factors composite scores with the SRSS-IE internalizing composite score shows that regardless of the risk factor score, all mean SRSS-IE internalizing composite scores for the purposive sample were in the high-risk range, as shown in Table 47.

Comparatively, the SRSS-IE mean internalizing score did not meet the high-risk threshold for the population except in the cases of risk factors scores of 8 and 10.

**Table 47***Mean SRSS-IE Internalizing and Risk Factors Composite Score Intersection – Purposive Sample (2+)*

Risk Factors Composite Score	Population			Purposive Sample (2+)		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
0	233	0.91	1.81	45	4.00 <sup>2</sup>	2.20
1	362	1.09	1.99	82	4.00 <sup>2</sup>	2.46
2	244	1.39	2.33	73	4.06 <sup>2</sup>	2.75
3	153	2.06 <sup>1</sup>	2.73	67	4.46 <sup>2</sup>	2.54
4	136	2.70 <sup>1</sup>	3.21	69	5.00 <sup>2</sup>	3.13
5	118	3.13 <sup>1</sup>	3.08	73	4.85 <sup>2</sup>	2.72
6	75	3.77 <sup>1</sup>	3.45	49	5.53 <sup>2</sup>	3.02
7	52	3.50 <sup>1</sup>	3.70	32	5.41 <sup>2</sup>	3.55
8	30	4.17 <sup>2</sup>	3.21	23	5.26 <sup>2</sup>	2.85
9	6	3.83 <sup>1</sup>	3.71	4	5.50 <sup>2</sup>	3.42
10	2	7.50 <sup>2</sup>	3.53	2	7.50 <sup>2</sup>	3.53

*Note.* Purposive Sample (2+) includes only students rated  $\geq 2$ . <sup>1</sup> Meets the threshold for moderate-risk for the internalizing measure. <sup>2</sup> Meets the threshold for high-risk for the internalizing measure.

### ***Linear Regression Analysis***

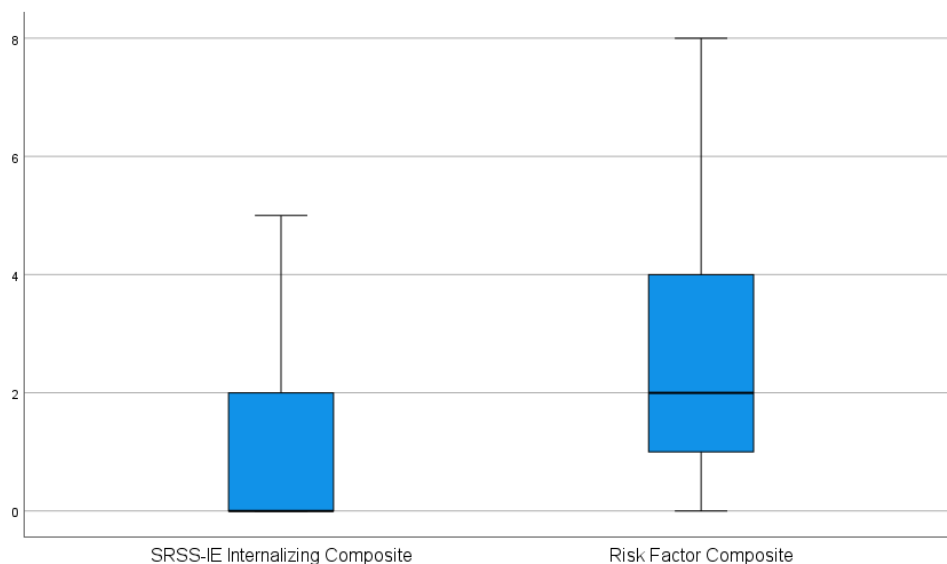
To better understand and prevent instances of internalizing mental health conditions in upper-elementary-aged students, testing parametric assumptions occurred in anticipation of running a linear regression of the SRSS-IE internalizing composite scores and risk factors composite scores. The first assumption, a continuous dependent variable was confirmed with the SRSS-IE internalizing composite score scale (i.e., 0-15). The second assumption, a continuous independent variable was confirmed by the risk factors composite score scale (i.e., 0-12). The third assumption, a linear relationship between the dependent and independent variables, was confirmed through a scatterplot of the variables with a regression line as previously shown in Figure 19.

The fourth assumption, absence of outliers, as previously shown in Figure 20, showed that the data set consisted of outliers that may exaggerate the results. There were 161 outliers removed from the data set, as shown in Figure 24, to confirm this assumption and proceed with

the regression. The fifth assumption, independence of observation, was statistically assessed through the Durbin-Watson test. An approximate value of 2 indicates there was no correlation between residuals and confirms independence of observation (Laerd Statistics, 2020). The Durbin-Watson statistic for the SRSS-IE internalizing and risk factors composite scores was 1.978 ( $N = 1,250$ ), verifying the fourth statistical assumption.

### Figure 24

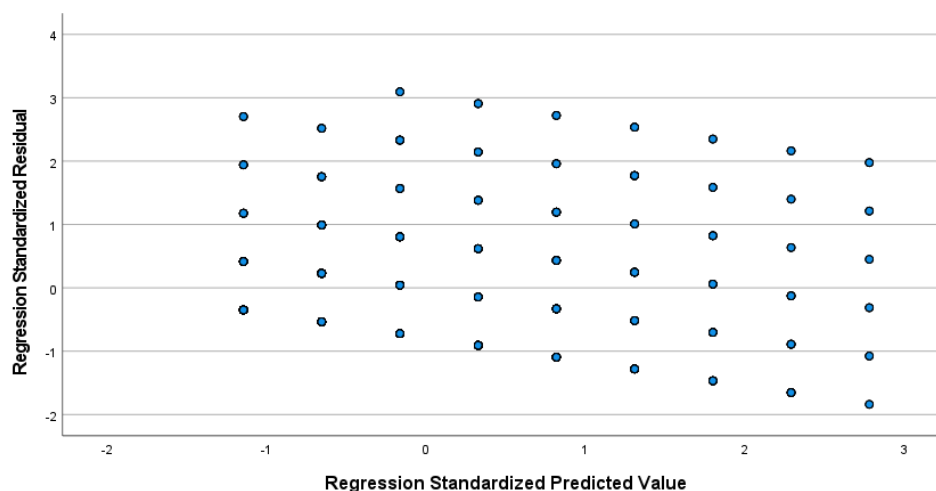
*SRSS-IE Internalizing and Risk Factors Composite Scores - Outliers Removed*



The sixth assumption, homoscedasticity, was an indication that the variance of the residuals was constant across the values of the independent variable (Laerd Statistics, 2020). This assumption was assessed through a scatterplot of the regression standardized predicted value and the regression standardized residual, as shown in Figure 25. Homoscedasticity was confirmed through a mostly rectangular visual inspection of the points on the scatterplot.

**Figure 25**

*SRSS-IE Internalizing and Risk Factors Composite Scores Homoscedasticity*



The final assumption, normal distribution of residuals, was assessed through a visual inspection of a Normal P-P Plot. When residuals are normally distributed, the points closely align with the diagonal line, although never will be they aligned perfectly (Laerd Statistics, 2020). The Normal P-P Plot for the SRSS-IE internalizing composite and risk factors composite scores is shown in Figure 26, and demonstrates an overall normal distribution of residuals, verifying the final assumption to proceed with the linear regression.

**Figure 26**

*SRSS-IE Internalizing Composite and Risk Factors Composite Distribution of Residuals P-P Plot*

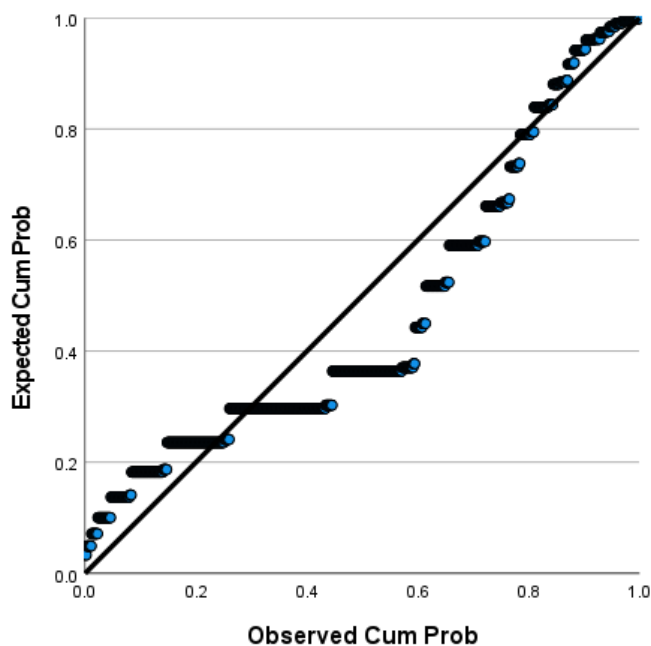


Table 48 provides the descriptive statistics for the linear regression. The mean SRSS-IE internalizing composite score for the final data set ( $N = 1,250$ ) was 1.07 ( $SD = 1.47$ ), and the mean risk factors composite score was 2.39 ( $SD = 2.11$ ).

**Table 48**

*Linear Regression Descriptive Statistics - Internalizing and Risk Factors Composite Scores*

	<i>M</i>	<i>SD</i>	<i>N</i>
SRSS-IE Internalizing Composite	1.07	1.47	1,250
Risk Factors Composite	2.39	2.11	1,250

Using the results shown in Table 49, the risk factors composite score statistically, significantly predicted the SRSS-IE internalizing composite score,  $F(1, 1248) = 226.08$ ,  $p < .001$ , accounting for 15% of the variance in the internalizing composite score, a small effect size according to Cohen (1988). Each risk factors composite point led to a 0.27, 95% CI [0.24, 0.31],

increase on the SRSS-IE internalizing composite score, as shown in Table 50. The estimated prediction equation was: SRSS-IE internalizing composite score = 0.42 + (0.27 \* Risk Factors Composite Score). Predictions were made, using the prediction equation, to determine the SRSS-IE internalizing score for the range of risk factors composite scores and are found in Table 51.

**Table 49**

*Summary of Linear Regression Model for SRSS-IE Internalizing and Risk Factors Composite Scores*

$R^2$	Adjusted $R^2$	SEE	Change Statistics					DW
			$R^2$ change	F change	df1	df2	$p$	
.15	.15	1.35	.15	226.005	1	1,248	<.001	1.978

*Note.* Predictor: 2021 risk factors composite.

**Table 50**

*Coefficients of Linear Regression Model for SRSS-IE Internalizing and Risk Factors Composite Score*

	Unstandardized Coefficients			95% Confidence Interval	
	B	SE	$p$	Lower	Upper
(Constant)	0.42	0.06	<.001	0.30	0.53
Risk Factors Composite	0.27	0.02	<.001	0.24	0.31

*Note.* Dependent variable: 2021 SRSS-IE composite score.

**Table 51***Predicted SRSS-IE Internalizing Composite Score Based on Risk Factors Composite*

Risk Factors Composite Score	Predicted SRSS-IE Internalizing Composite Score
0	0.42
1	0.69
2	0.96
3	1.23
4	1.50
5	1.77
6	2.04 <sup>1</sup>
7	2.31 <sup>1</sup>
8	2.58 <sup>1</sup>
9	2.85 <sup>1</sup>
10	3.12 <sup>1</sup>
11	3.39 <sup>1</sup>
12	3.66 <sup>1</sup>

*Note.* <sup>1</sup> Meets the threshold for moderate-risk for the internalizing measure.

Using the results of the predicted SRSS-IE internalizing composite score based on the risk factors composite, the predicted SRSS-IE composite scores were rounded to whole numbers. SRSS-IE composite scores are always whole numbers, and while there is a risk of greater inaccuracy, the rounded numbers align with the screener. Figure 27 shows the rounded results, colored to reflect the low-risk (green), moderate-risk (yellow), and high-risk (red) ranges, determined by the universal screener and has been placed beside the overall composite results.

**Figure 27***SRSS-IE Internalizing Composite Prediction Table*

Risk Factor Composite Score	SRSS-IE	
	Overall Composite	Internalizing Composite
0	1	0
1	2	1
2	4	1
3	5	1
4	6	2
5	7	2
6	9	2
7	10	2
8	11	3
9	12	3
10	14	3
11	15	3
12	16	4

*Note.* Green = low-risk range; yellow = moderate-risk range; red = high-risk range.

Using the specific data from the same randomly selected twenty students used in the overall composite to represent the continuum of risk factors, Figure 28 shows the individual student raw data used to create the risk factors composite score. To ensure anonymity, all selected cases were from the Caucasian ethnicity group, since that was the largest ethnicity group in the study. The columns to the far right show the predicted risk score and level followed by the actual score and level assigned by teacher screening in the spring of 2021. The risk factors composite score predicted the SRSS-IE internalizing risk level (i.e., low, moderate, or high), with 60% accuracy among these 20 students, an accuracy rate that was the same as the overall composite score. The same case (i.e., Case ID 541977) predicted the internalizing composite score as low-risk when the actual screener was measured as high-risk. All other predictions, when they were different, only differed by one level.



**Figure 28**

*SRSS-IE Internalizing Composite Prediction Accuracy*

Case ID	Lunch Status	Lunch Status Score	ODR	ODR Score	Absenteeism	Absenteeism Score	Homelessness	Homelessness Score	Reading Performance	Rdg Perf Score	Math Performance	Math Perf Score	Gender2021	Gender Score	Ethnicity2021	Risk Factor Composite	Predicted by RF Composite	Actual SRSS-IE Composite
218433	F	2	0	0	19.28	2			5.0	0	4.7	1	F	0	C	5	2	8
221544	F	2	0	0	13.56	2	2.4	1	2	2	1.3	2	M	1	C	9	3	1
318036	P	0	1	0	6.1	1			5.2	0	5.0	0	M	1	C	1	1	0
519894	R	1	0	0	0.58	0			2.8	2	1.7	2	F	0	C	5	2	0
524722	P	0	3	1	10.47	2			2.0	2	2.7	2	M	1	C	7	2	0
541977	P	0	2	1	9.98	1			4.6	1	5.0	0	M	1	C	3	1	8
559147	P	0	2	1	3.1	1			5.2	0	5.0	0	M	1	C	2	1	0
559589	P	0	0	0	0	0			5.4	0	5.0	0	M	1	C	0	0	0
561357	P	0	3	1	8.72	1			5.0	0	5.0	0	M	1	C	2	1	0
937737	F	2	0	0	4.94	1			5.5	0	5.0	0	F	0	C	3	1	0
938740	F	2	1	0	0.97	0			5.4	0	5.0	0	M	1	C	2	1	5
940797	P	0	0	0	0.58	0			5.0	0	5.0	0	F	0	C	0	0	0
944401	R	1	4	1	7.46	1			4.4	1	5.0	0	F	0	C	4	2	3
953105	F	2	0	0	2.52	0			5.4	0	5.0	0	M	1	C	2	1	0
955740	F	2	0	0	10.37	2			2.3	2	1.7	2	F	0	C	8	3	8
959888	P	0	2	1	4.55	1			4.4	1	5.0	0	M	1	C	3	1	0
1008100	F	2	0	0	7.75	1			4.6	1	2.7	2	F	0	C	6	2	4
1015495	P	0	0	0	17.54	2			3.6	1	4.3	1	F	0	C	4	2	2
1290555	R	1	16	2	4.94	1			2.3	2	1.3	2	M	1	C	8	3	2
1290606	F	2	1	0	5.04	1			2.4	2	5.0	0	M	1	C	5	2	0

### ***Multiple Regression Analysis***

A series of multiple regression models were used to determine the impact the independent risk factors had on the SRSS-IE internalizing composite score, including the influence of gender (i.e., boys, when girls were held constant) and ethnicity (i.e., Asian, Black, Hispanic, Multi-race, Native American, and Pacific Islander, when Caucasian was held constant). These results were used to develop an estimated prediction equation for the SRSS-IE internalizing composite score based on the individual risk factors (i.e., lunch status [serving as a proxy for socioeconomic status], office discipline referrals, absenteeism, homelessness, reading performance, and math performance).

To begin the multiple regress process, 147 studentized residuals greater than  $\pm 3$  standard deviations were removed, and an additional 185 cases were omitted due to missing scores, leaving 1,079 cases used in the models. The used cases did not include any that were Pacific Islander, therefore, Pacific Islander was not included in the internalizing regression findings. Like the process used for the SRSS-IE composite score, various models were analyzed, searching for the largest coefficient of multiple determination ( $R^2$ ), and Table 52 summarizes the models. Once again, homelessness was removed from the models as a risk factor when the correlation was not statistically significant, and its removal did not impact the  $R^2$  value.

Multiple regression model 4 predicted with statistical significance the SRSS-IE internalizing composite score,  $F(9, 1069) = 28.34, p < .001, \text{adj. } R^2 = .19$ . Reading challenge and the ethnicity Hispanic were variables removed from the final model when they offered no statistical significance, and their removal did not impact the  $R^2$  value. The variables lunch status, ODR, absenteeism, math challenge, Black, and Native American added to the prediction with statistical significance,  $p < .05$ . The variables Asian, Multi-race, and boys did not add statistical

**Table 52**

*Summary of Multiple Regression Models for SRSS-IE Internalizing Composite Score*

Model	<i>R</i>	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	SEE	Change Statistics			
					<i>R</i> <sup>2</sup> Change	F Change	<i>p</i>	DW
1	.41 <sup>a</sup>	.14	.17	1.36	.17	43.97	< .001	1.892
2	.41 <sup>b</sup>	.14	.17	1.36	.17	36.71	< .001	1.890
3	.44 <sup>c</sup>	.19	.19	1.34	.19	25.52	< .001	1.891
4	.44 <sup>d</sup>	.19	.19	1.31	.19	28.34	< .001	1.906

*Note.* <sup>a</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge.

<sup>b</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge, gender.

<sup>c</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge, ethnicity.

<sup>d</sup> Predictors: Absenteeism, Lunch Status, ODRs, Math Challenge, gender, ethnicity.

significance, but their removal negatively impacted the *R*<sup>2</sup> statistic. The summary of the regression model can be found in Table 53. The estimated prediction equation was: SRSS-IE Internalizing Composite Score = 0.51 + (0.31 \* Lunch Status Score) + (0.69 \* ODR Score) + (0.17 \* Absenteeism Score) + (0.60 \* Math Score) + (0.06 \* Boy) – (0.19 \* Asian) – (0.54 \* Black) – (0.12 \* Multi-race) + (1.25 \* Native American).

The internalizing prediction equation was applied to the same twenty randomly selected students representing the continuum of risk factors scores to determine accuracy between the use of the prediction equation and the risk factors composite score as the predictor. As shown in Figure 29, 10 of the 20 cases, or 50%, were predicted at the same risk level as the teacher-completed screening in 2021. This was a 15% decrease from the risk factors composite score accurately predicting the SRSS-IE internalizing composite score. The same two cases (i.e., 541977 and 938740) as in the overall composite were predicted two levels lower than the teacher screener. All other predictions that were not the same differed by one risk level.

**Table 53**

*Summary of Multiple Regression Model for SRSS-IE Internalizing Composite Score and Risk Factors*

SRSS-IE Composite	<i>B</i>	95% CI for <i>B</i>		<i>SE B</i>	$\beta$	$R^2$	$\Delta R^2$
		<i>LL</i>	<i>UL</i>				
Model						.19	.19***
Constant	0.51***	0.36	0.66	0.08			
Lunch Status	0.31***	0.21	0.41	0.05	0.20***		
ODR	0.69**	.027	1.12	0.22	0.09**		
Absenteeism	0.13*	0.01	0.25	0.06	0.06*		
Math	0.60***	0.46	0.74	0.07	0.26***		
Boy	0.06	-0.10	0.22	0.08	0.02		
Asian	-0.19	-0.67	0.29	0.25	-0.02		
Black	-0.54***	-0.81	-0.27	0.14	-0.12***		
Multi-race	-0.12	-0.47	0.24	0.18	-0.02		
Native American	1.25***	0.70	1.81	0.28	0.12***		

*Note.* Model – “Enter” method in SPSS Statistics; *B* = unstandardized regression coefficient; CI

= confidence interval; *LL* = lower limit; *UL* = upper limit; *SE B* = standard error of the

coefficient;  $\beta$  = standardized coefficient;  $R^2$  = coefficient of determination;  $\Delta R^2$  = adjusted  $R^2$ .

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

**Figure 29**

*SRSS-IE Internalizing Composite Risk Level Prediction Equation Comparison*

Case ID	Lunch Status	Lunch Status Score	ODR	ODR Score	Absenteeism	Absenteeism Score	Homelessness	Homelessness Score	Reading Performance	Rdg Perf Score	Math Performance	Math Perf Score	Gender2021	Gender Score	Ethnicity2021	Equation Predicted SRSS-IE Composite	Actual SRSS-IE Externalizing
218433	F	2	0	0	19.28	2			5.0	0	4.7	1	F	0	C	3	2
221544	F	2	0	0	13.56	2	2.4	1	2	2	1.3	2	M	1	C	6	5
318036	P	0	1	0	6.1	1			5.2	0	5.0	0	M	1	C	1	0
519894	R	1	0	0	0.58	0			2.8	2	1.7	2	F	0	C	5	10
524722	P	0	3	1	10.47	2			2.0	2	2.7	2	M	1	C	12	13
541977	P	0	2	1	9.98	1			4.6	1	5.0	0	M	1	C	8	18
559147	P	0	2	1	3.1	1			5.2	0	5.0	0	M	1	C	7	4
559589	P	0	0	0	0	0			5.4	0	5.0	0	M	1	C	1	0
561357	P	0	3	1	8.72	1			5.0	0	5.0	0	M	1	C	7	4
937737	F	2	0	0	4.94	1			5.5	0	5.0	0	F	0	C	1	0
938740	F	2	1	0	0.97	0			5.4	0	5.0	0	M	1	C	2	6
940797	P	0	0	0	0.58	0			5.0	0	5.0	0	F	0	C	0	0
944401	R	1	4	1	7.46	1			4.4	1	5.0	0	F	0	C	8	12
953105	F	2	0	0	2.52	0			5.4	0	5.0	0	M	1	C	2	0
955740	F	2	0	0	10.37	2			2.3	2	1.7	2	F	0	C	6	5
959888	P	0	2	1	4.55	1			4.4	1	5.0	0	M	1	C	8	9
1008100	F	2	0	0	7.75	1			4.6	1	2.7	2	F	0	C	4	1
1015495	P	0	0	0	17.54	2			3.6	1	4.3	1	F	0	C	3	7
1290555	R	1	16	2	4.94	1			2.3	2	1.3	2	M	1	C	18	18
1290606	F	2	1	0	5.04	1			2.4	2	5.0	0	M	1	C	4	7

### ***Research Question 3***

**What is the correlation between the SRSS-IE externalizing score and the predictive factors of socioeconomic status, office discipline referrals, academic performance, homelessness, and absenteeism by ethnicity and gender?**

The investigation of the relationships between the SRSS-IE externalizing composite score and the individual predictive risk factors returned to the original data set used in the study and followed a similar process as the investigation regarding the internalizing relationship to the predictive risk factors. The mean SRSS-IE externalizing composite score, as shown in Table 54, was 3.12 ( $SD = 3.95$ ) and the median score was 2. The externalizing composite score can range from 0 to 21, with the population's maximum score being 19. The mean risk factors composite score, as previously indicated was 2.53 ( $SD = 2.17$ ) with a median score of 2. The risk factors composite score ranges from 0 to 12, and 10 was the highest score for the population.

**Table 54**

*Mean SRSS-IE Externalizing and Risk Factors Composite Score*

	Mean	Median	<i>SD</i>	Minimum	Maximum
SRSS-IE Externalizing Composite	3.12	2	3.95	0	19
Risk Factors Composite	2.53	2	2.17	0	10

*Note.* SRSS-IE externalizing maximum score = 21; Low risk = 0-3, Moderate risk = 4-8, High risk = 9-21. Risk factor maximum score = 12.

To proceed with analysis and in expectation of running correlations for the externalizing measure to identify individual factors that predict the SRSS-IE externalizing composite score, the data were explored to determine whether they met the parametric assumptions to use Pearson product moment correlation. The SRSS-IE externalizing score scale (i.e., 0-21) and the risk factor score scale (i.e., 0-12) were continuous scales and were measured on a ratio scale,

confirming the first parametric assumption, continuous scale of measurement. The second assumption, shown in Figure 30, demonstrates that a linear relationship existed among the SRSS-IE externalizing composite scores and the risk factors composite scores, confirming the second statistical assumption, linearity.

**Figure 30**

*Scatterplot of 2021 SRSS-IE Externalizing and Risk Factors Composite Scores*

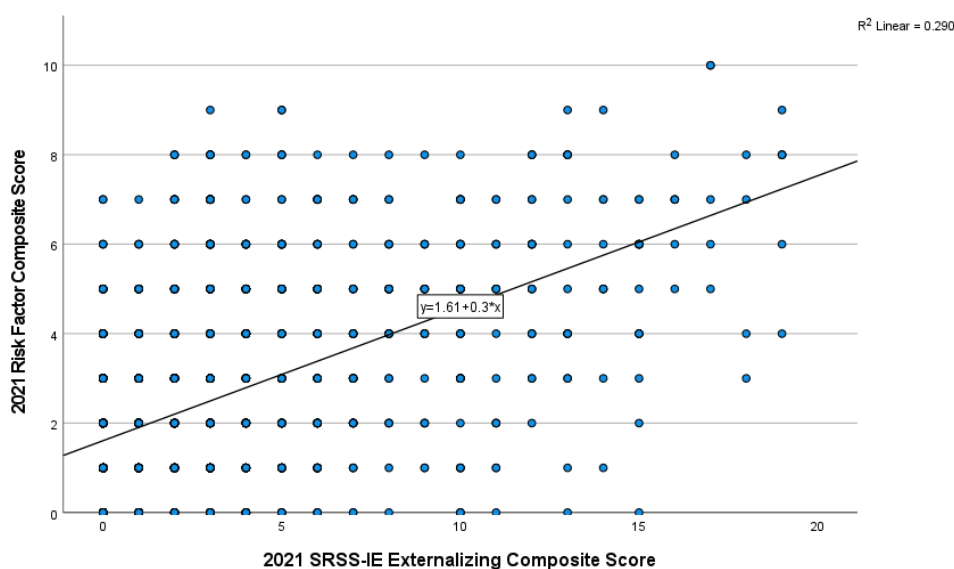
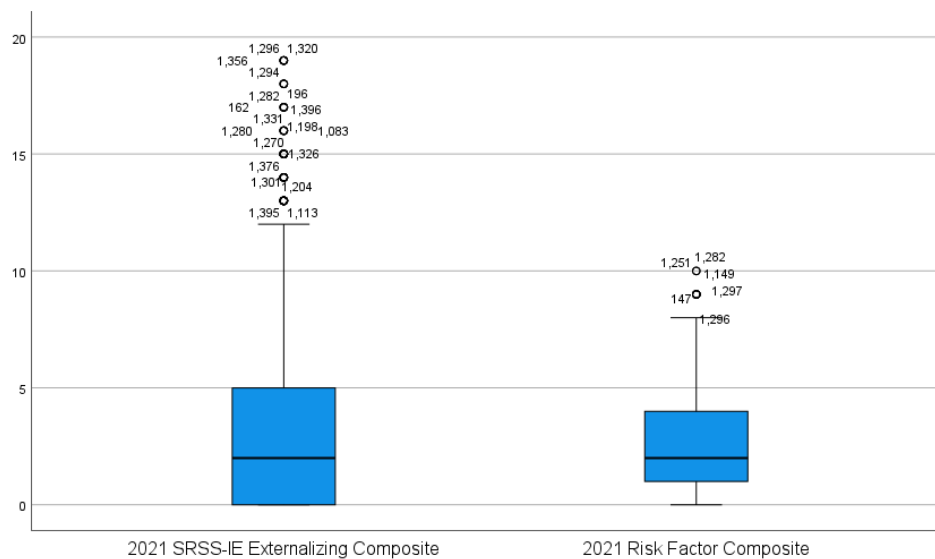


Figure 31 shows that the third statistical assumption was violated. Outliers are data points that would exaggerate the results when included in the dataset. To use Pearson product moment correlation there needs to be an absence of outliers. Because this statistical assumption was violated, a non-parametric inferential statistical test, Spearman's rho correlation, was used to explore the relationship between the SRSS-IE externalizing and the risk factors composite scores.

**Figure 31***SRSS-IE Externalizing and Risk Factors Composite Outliers*

The next phase of analysis was to determine the strength of the relationship between the SRSS-IE externalizing score and the risk factors composite score. A Spearman's rho correlation was used to do this, and the data are found in Table 55. Additionally found in Table 55 are correlation coefficients for each of the individual risk factors used to create the risk factors composite score. Upon review, it was noted that all correlations with the SRSS-IE externalizing composite score were positive and statistically significant. Like internalizing, the strongest correlation was present with the risk factors composite score and demonstrated a moderate correlation,  $r_s(1,409) = .54, p < .001$ . Increased math challenge presented the only other moderate correlation,  $r_s(1,223) = .50, p < .001$ , followed by increased reading challenge, which had a small correlation,  $r_s(1,398) = .46, p < .001$ .



**Table 55**

*Spearman's rho Correlation Summary for SRSS-IE Externalizing Composite and Risk Factors*

	<i>N</i>	<i>r</i>	<i>p</i>
Risk Factors Composite	1,411	.54*	< .001
Increased Financial Challenge	1,411	.35	< .001
ODR	1,411	.27	< .001
Absenteeism	1,411	.29	< .001
Homelessness	1,411	.08	.004
Increased Reading Challenge	1,400	.46	< .001
Increased Math Challenge	1,225	.50*	< .001

*Note.* \* Moderate correlation.

Guided by the literature presented in RQ1 and to understand the relationships that the risk factors composite and individual risk factors have with externalizing mental health symptoms, drilling down into the correlations would provide information about the risk factors that had the greatest influence on the demographic groups. Correlations were run using the SRSS-IE externalizing composite, risk factors composite, and individual risk factor by demographic group to determine which of them had the highest correlations. The correlation coefficient summary is shown in Table 56.

The relationships among the variables and demographic groups of the externalizing measure resemble the relationships of the SRSS-IE overall score more closely than those of the internalizing measure. There was a medium, positive correlation between the risk factors composite score and the SRSS-IE externalizing composite score that was statistically significant,  $r_s(1,409) = .54, p < .001$ . There were statically significant positive, moderate correlations between the SRSS-IE externalizing composite score and the risk factors composite score for grade 4,  $r_s(700) = .57, p < .001$ , grade 5,  $r_s(707) = .51, p < .001$ , boys,  $r_s(717) = .54, p < .001$ , girls,  $r_s(690) = .55, p < .001$ , reduced paid lunch,  $r_s(53) = .66, p < .001$ , Asian,  $r_s(49) = .51, p =$

**Table 56**

*Spearman's rho Correlation Summary for SRSS-IE Externalizing, RF Composite, and Individual RFs by Demographic Groups*

Risk Factor	Population	Grade		Gender		Lunch Status			Ethnicity							
		4	5	B	G	P	R	F	A	B	C	H	M	NA	PI	
Composite	<i>r</i>	.54*	.57*	.51*	.54*	.55*	.42	.66*	.48	.51*	.52*	.49	.62*	.51*	.34	.00
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.001	<.001	<.001	<.001	<.001	.077	1.00
	<i>N</i>	1,411	702	709	719	692	910	55	405	37	167	1,047	52	77	28	3
Increased Financial Challenge	<i>r</i>	.35	.36	.33	.35	.35	--	--	--	.47	.20	.28	.36	.32	.19	.00
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	--	--	--	.003	.009	<.001	.010	.005	.324	1.00
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Office Discipline Referrals (ODR)	<i>r</i>	.27	.29	.24	.31	.18	.15	.39	.37	.29	.37	.22	.47	.35	.30	--
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	.004	<.001	.081	<.001	<.001	<.001	.002	.121	--
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Absenteeism	<i>r</i>	.29	.31	.27	.29	.30	.15	.38	.28	.20	.31	.24	.30	.38	.33	-.50
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	.004	<.001	.246	<.001	<.001	.031	<.001	.091	.667
	<i>N</i>	1,411	702	709	719	692	910	55	446	37	167	1,047	52	77	28	3
Homelessness	<i>r</i>	.08	.09	.07	.09	.06	--	--	.07	--	.02	.07	.18	.08	--	--
	<i>p</i>	.004	.015	.086	.014	.124	--	--	.125	--	.760	.023	.193	.499	--	--
	<i>N</i>	1,411	702	709	710	692	910	55	446	37	167	1,047	53	77	28	3
Increased Reading Challenge	<i>r</i>	.46	.51*	.42	.26	.47	.39	.43	.37	.30	.43	.43	.52*	.30	.37	.00
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.076	<.001	<.001	<.001	.008	.056	1.00
	<i>N</i>	1,400	693	707	711	689	908	55	437	37	166	1,040	52	75	27	3
Increased Math Challenge	<i>r</i>	.50*	.56*	.45	.50*	.54*	.39	.55*	.38	.50*	.46	.47	.61*	.34	.09	.87
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.002	<.001	<.001	<.001	.004	.673	.333
	<i>N</i>	1,225	603	622	613	612	767	53	405	35	148	901	44	68	26	3

*Note.* Gender: B – boys, G – girls; Lunch Status: P – paid, R – reduce paid, F – free; Ethnicity: A – Asian, B – Black, C – Caucasian, H – Hispanic, M – Multi-race, NA – Native American, PI – Pacific Islander. \* Moderate correlation.

.001, Black,  $r_s(165) = .52, p < .001$ , Hispanic,  $r_s(50) = .62, p < .001$ , and Multi-race,  $r_s(75) = .51, p < .001$ .

The only individual risk factor to demonstrate a moderate positive correlation was increased math challenge,  $r_s(1,409) = .54, p < .001$ . The demographic groups that demonstrated medium, positive correlations between the increased math challenge and the SRSS-IE externalizing scores were grade 4,  $r_s(601) = .56, p < .001$ , boys,  $r_s(611) = .50, p < .001$ , girls,  $r_s(610) = .54, p < .001$ , reduced paid lunch,  $r_s(51) = .55, p < .001$ , Asian,  $r_s(33) = .54, p = .002$ , and Hispanic,  $r_s(42) = .61, p < .001$ . Each of the other risk factors demonstrated small, positive, statistically significant correlations with the SRSS-IE externalizing measure with increased reading challenging,  $r_s(1,398) = .46, p < .001$ , having the largest relationship in this category, followed by increased financial challenge,  $r_s(1,409) = .35, p < .001$ .

The SRSS-IE externalizing risk threshold scale identifies composite scores from 0 to 3 as low-risk, 4 to 8 as medium risk, and 9 to 21 as high-risk for externalizing behavior difficulties. Measures of central tendency and dispersion were calculated for all participants, and the mean SRSS-IE externalizing composite score for the population, as shown in Table 57, was 3.12 ( $SD = 3.95$ ), which was in the low-risk range. The highest score given for the population was 19, with the maximum possible score being 21.

Next, the average SRSS-IE externalizing composite scores were analyzed by grade, gender, lunch status, and ethnicity. On average, also depicted in Table 57, the mean score of students in the free lunch, Black, Hispanic, Multi-race, and Native American groups entered the moderate-risk threshold for the SRSS-IE externalizing measure. There were no groups whose averages met the high-risk threshold. While most groups had a low-risk median score of 1 or 2,

the demographic groups free lunch, Black, and Hispanic had a median score of 4, indicating their median score was at the moderate-risk level.

**Table 57**

*Mean SRSS-IE Externalizing Composite Score by Demographic Group*

	<i>N</i>	<i>M</i>	Median	<i>SD</i>	Minimum	Maximum
Externalizing Composite	1,411	3.12	2	3.95	0	19
Grade						
4	702	3.17	2	4.04	0	19
5	709	3.07	2	3.85	0	19
Gender						
Boys	719	3.71	2	4.26	0	19
Girls	692	2.51	1	3.49	0	19
Lunch Status						
Paid	910	2.17	1	3.14	0	19
Reduced	55	3.91	1	4.90	0	19
Free	446	4.97 <sup>1</sup>	4 <sup>1</sup>	4.57	0	19
Ethnicity						
Asian	37	2.19	2	2.78	0	14
Black	167	5.29 <sup>1</sup>	4 <sup>1</sup>	4.81	0	19
Caucasian	1,047	2.59	1	3.50	0	19
Hispanic	52	5.42 <sup>1</sup>	4 <sup>1</sup>	5.36	0	19
Multi-race	77	4.00 <sup>1</sup>	3	4.29	0	19
Native American	28	4.86 <sup>1</sup>	3.5	4.94	0	19
Pacific Islander	3	1.00	1	1.00	0	2

*Note.* <sup>1</sup> Meets the moderate-risk threshold for the externalizing measure. SRSS-IE externalizing

maximum score = 21; Low risk = 0-3, Moderate risk = 4-8, High risk = 9-21.

Table 58 crosses the average SRSS-IE externalizing composite score with the risk factors composite score. The mean externalizing composite score entered the moderate-risk level threshold when the risk factors composite score was 4, and it crossed the high-risk threshold when the risk factors composite score was 9. There were less than 10 students who had a risk factors composite score of 9 or 10, and there were no students with a risk factors composite score greater than 10.

**Table 58***Mean SRSS-IE Externalizing Composite Score and Risk Factors Composite Score Intersection*

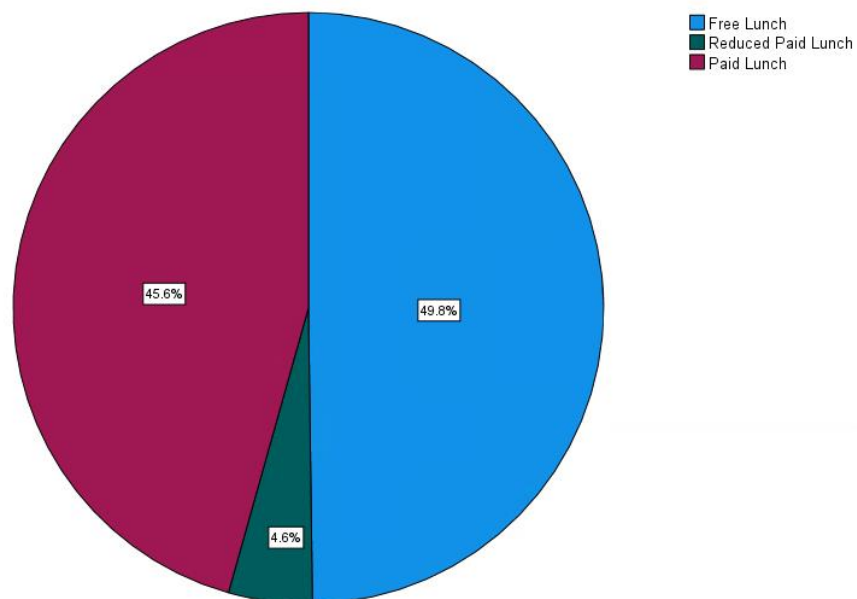
Risk Factors Composite Score	<i>N</i>	<i>M</i>	<i>SD</i>
0	233	1.15	2.34
1	362	1.45	2.33
2	244	2.34	2.69
3	153	3.43	3.61
4	136	4.63 <sup>1</sup>	4.26
5	118	5.38 <sup>1</sup>	4.04
6	75	6.75 <sup>1</sup>	4.72
7	52	7.42 <sup>1</sup>	5.01
8	30	8.77 <sup>1</sup>	5.75
9	6	9.83 <sup>2</sup>	6.40
10	2	17.00 <sup>2</sup>	0
11	0	--	--
12	0	--	--

*Note.* <sup>1</sup> Meets the moderate-risk threshold for the externalizing measure. <sup>2</sup> Meets the moderate-risk threshold for the externalizing measure.

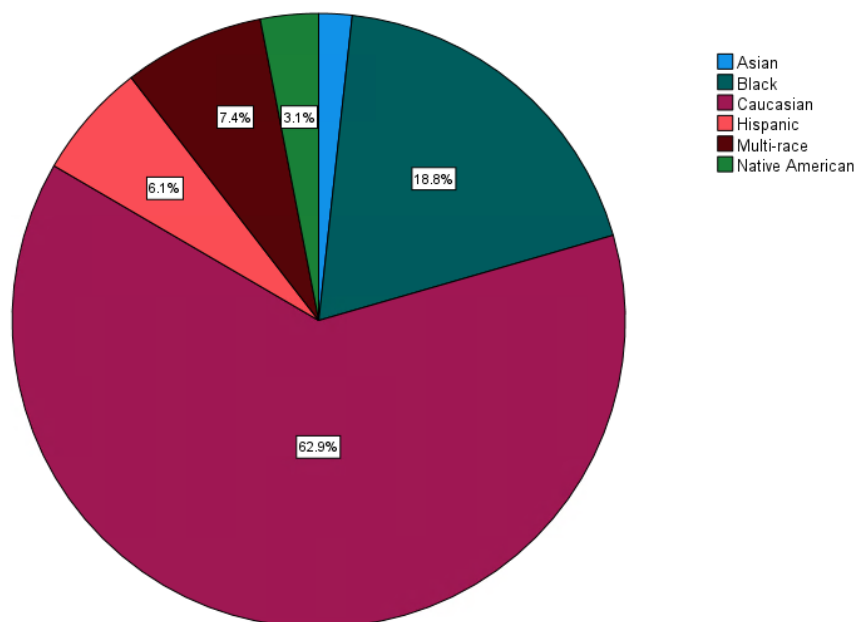
To gain a better understanding of risk factors and their relationships to the SRSS-IE externalizing composite score, the researcher focused analysis on students whose externalizing score was a 4 or greater, the externalizing threshold for moderate-risk according to the universal screener. This returned a purposive sample of 458 students who were 48.5% fourth graders, 51.5% fifth graders, 61.4% boys, and 38.6% girls. The socioeconomic status breakdown, using lunch status as a substitute and shown in Figure 32, shows that 45.6% of the purposive sample paid for school lunches, 4.6% received reduced paid lunches, and 49.8% received free lunches. Finally, as shown in Figure 33, the externalizing purposive sample was comprised of students who were 62.9% White, 18.8% Black, 7.4% Multi-race, 6.1% Hispanic, 3.1% Native American, and 1.7% Asian.

**Figure 32**

*Externalizing Purposive Sample (4+) Socioeconomic Status*

**Figure 33**

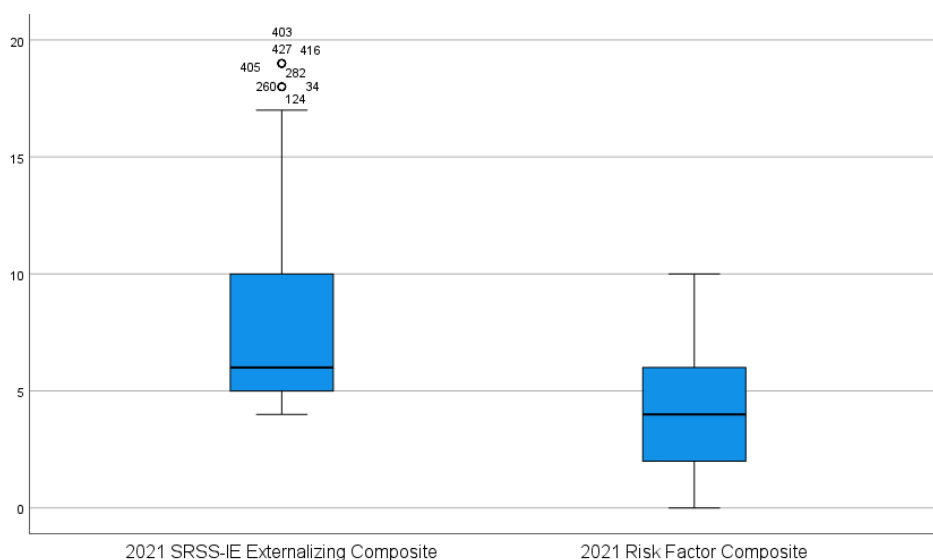
*Externalizing Purposive Sample (4+) Ethnicity Status*



In preparation for running correlations with the externalizing purposive sample, the parametric assumptions were tested. The first assumption, continuous ratio scales, and the second assumption, linear relationship, were previously confirmed with the population. The third assumption, the absence of outliers, was violated, with 10 outliers being present in the SRSS-IE externalizing measure. There were no outliers in the risk factors composite, as shown in Figure 34. Because this assumption was violated, Spearman's rho correlation was used to investigate the relationship between the SRSS-IE externalizing composite and risk factors composite variables.

**Figure 34**

*Purposive Sample (4+) SRSS-IE Externalizing and Risk Factors Composites Outliers*



As shown in Table 59, Spearman's rho correlations were used to study the relationship between the SRSS-IE externalizing composite score for an externalizing score of four or higher, the risk factors composite score, and individual risk factors. The strongest relationship, although small, was between the risk factors composite score and the SRSS-IE externalizing measure,  $r_s(456) = .34, p < .001$ , compared to the moderate correlation of the population,  $r_s(1,409) = .54, p < .001$ . The individual risk factor with the strongest relationship that showed statistical

significance was office discipline referrals,  $r_s(456) = .33, p < .001$ , followed by increased math challenge,  $r_s(456) = .25, p < .001$ .

**Table 59**

*Correlation Summary for SRSS-IE Externalizing and Risk Factors – Purposive Sample (4+)*

	<i>Population</i>			<i>Purposive Sample (4+)</i>		
	<i>N</i>	<i>r</i>	<i>p</i>	<i>N</i>	<i>r</i>	<i>p</i>
Risk Factors Composite	1,411	.54*	< .001	458	.34	< .001
Increased Financial Challenge	1,411	.35	< .001	458	.19	.006
ODR	1,411	.27	< .001	458	.33	< .001
Absenteeism	1,411	.29	< .001	458	.19	< .001
Homelessness	1,411	.08	.004	458	.06	.177
Increased Reading Challenge	1,400	.46	< .001	379	.27	.139
Increased Math Challenge	1,225	.50*	< .001	458	.25	< .001

*Note.* Purposive Sample (4+) includes only students rated  $\geq 4$  on the SRSS-IE externalizing composite. \*

Moderate correlation.

Finally, the correlation coefficients were reviewed by demographic group, as shown in Table 60, for students whose scores were a 4 or more on the SRSS-IE externalizing measure. The risk factors composite score for the purposive sample had a small, positive correlation with the SRSS-IE externalizing measure,  $r_s(456) = .34, p < .001$ . The demographic group, Asian,  $r_s(6) = .80, p = .017$ , had a large, positive correlation, and Hispanic,  $r_s(26) = .62, p < .001$ , had a moderate, positive correlation. The remaining positive correlations that were statistically significant were small and found among both grade levels, both genders, paid lunch, free lunch, Black, and Caucasian.

The individual risk factors presented relationships, as expected, less than the risk factors composite, with office discipline referrals having the strongest small, positive correlation,  $r_s(456) = .33, p < .001$ , followed by increased math challenge,  $r_s(456) = .25, p < .001$ . The group



**Table 60**

*Correlation Summary of Purposive Sample (4+) – SRSS-IE Externalizing, RF Composite, and Individual RFs by Demographic Group*

Risk Factor		Population														
		Grade		Gender		Lunch Status			Ethnicity							
		4	5	B	G	P	R	F	A	B	C	H	M	NA	PI	
Composite	<i>r</i>	.34	.32	.36	.34	.35	.26	.21	.34	.80**	.36	.27	.62*	.13	.30	--
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	.350	<.001	.017	<.001	<.001	<.001	.474	.420	--
	<i>n</i>	458	222	236	281	177	209	21	228	8	86	288	28	34	14	--
Increased Financial Challenge	<i>r</i>	.19	.20	.19	.18	.21	--	--	--	.57	-.04	.21	.29	-.04	.00	--
	<i>p</i>	.006	.002	.004	.003	.004	--	--	--	.143	.736	<.001	.130	.842	1.00	--
	<i>n</i>	458	222	236	281	177	209	21	228	8	86	288	28	34	14	--
Office Discipline Referrals (ODR)	<i>r</i>	.33	.33	.34	.34	.31	.16	.35	.41	.66	.46	.24	.61*	.30	.39	--
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	.017	.116	<.001	.074	<.001	<.001	<.001	.082	.171	--
	<i>n</i>	458	222	236	281	177	209	21	228	8	86	288	28	34	14	--
Absenteeism	<i>r</i>	.19	.14	.24	.19	.20	.08	.02	.19	.48	.12	.14	.36	.30	.27	--
	<i>p</i>	<.001	.040	<.001	.002	.006	.235	.940	.005	.231	.120	.022	.060	.090	.353	--
	<i>n</i>	458	222	236	281	177	209	21	228	8	86	288	28	34	14	--
Homelessness	<i>r</i>	.06	.09	.04	.01	.16	--	--	.06	--	.22	.01	.18	-.12	--	--
	<i>p</i>	.177	.187	.502	.920	.033	--	--	.347	--	.047	.932	.359	.512	--	--
	<i>n</i>	458	222	236	281	177	209	21	228	8	86	288	28	34	14	--
Increased Reading Challenge	<i>r</i>	.27	.28	.25	.31	.20	.25	.47	.24	.73*	.29	.18	.42	.15	.38	--
	<i>p</i>	.139	<.001	<.001	<.001	.008	<.001	.838	<.001	.039	.007	.002	.025	.418	.197	--
	<i>n</i>	379	215	235	274	176	208	20	221	8	85	283	28	33	13	--
Increased Math Challenge	<i>r</i>	.25	.28	.24	.24	.29	.20	.28	.21	.36	.35	.15	.54*	.01	.25	--
	<i>p</i>	<.001	<.001	<.001	<.001	<.001	.011	.232	.003	.424	.003	.027	.006	.946	.420	--
	<i>n</i>	458	179	200	227	152	160	20	199	7	74	230	25	30	13	--

*Note.* Gender: B – boys, G – girls; Lunch Status: P – paid, R – reduce paid, F – free; Ethnicity: A – Asian, B – Black, C – Caucasian, H – Hispanic, M – Multi-race, NA – Native American, PI – Pacific Islander. \* Moderate correlation. \*\* Strong correlation.

Asian also had a moderate, positive correlations among the SRSS-IE externalizing measure and the risk factor of increased reading challenge,  $r_s(6) = .73, p = .039$ . The demographic group Hispanic demonstrated statistically significant moderate correlations among the SRSS-IE externalizing measure and the variables of ODR,  $r_s(26) = .61, p < .001$ , and increased math challenge,  $r_s(26) = .54, p = .006$ .

As shown in Table 61, about thirty-two percent of the population made up the externalizing purposive sample having scores that were a 4 or higher. The mean SRSS-IE externalizing composite score for the purposive sample was 7.70 ( $SD = 3.79$ ) compared to the population's mean of 3.12 ( $SD = 3.95$ ). The risk factors composite score average for the purposive sample was 3.89 ( $SD = 2.29$ ) compared to 2.53 ( $SD = 2.17$ ) of the population. The median score of the sample met the moderate-risk threshold.

**Table 61**

*Mean Externalizing Composite Score Comparison – Purposive Sample (4+)*

Group	<i>N</i>	<i>M</i>	Median	<i>SD</i>	Minimum	Maximum
Total Population	1,411					
SRSS-IE Externalizing		3.12	2	3.95	0	19
Risk Factor		2.53	2	2.17	0	10
Purposive Sample	458					
SRSS-IE Externalizing		7.70 <sup>1</sup>	6 <sup>1</sup>	3.79	4	19
Risk Factor		3.89	4	2.29	0	10

*Note.* The purposive sample included SRSS-IE externalizing composite scores  $\geq 4$ . <sup>1</sup> Meets the moderate-risk threshold for the externalizing measure. SRSS-IE externalizing maximum score = 21; Low risk = 0-3, Moderate risk = 4-8, High risk = 9-21. Risk factors composite maximum score possible = 12.

To continue the analysis of the scores of 4 or more on the SRSS-IE externalizing measure compared to the entire population, Table 62 shows the breakdown by demographic groups. The mean SRSS-IE externalizing composite scores for all demographic groups in the purposive sample were in the moderate-risk range, except for Hispanic ( $N = 28$ ), which met the high-risk threshold at 9 ( $SD = 4.89$ ). The other groups nearly at the high-risk threshold included Black ( $M = 8.92$ ,  $SD = 4.05$ ), Native American ( $M = 8.14$ ,  $SD = 5.11$ ), free lunch ( $M = 8.36$ ,  $SD = 3.99$ ), and reduced paid lunch ( $M = 8.81$ ,  $SD = 4.73$ ).

**Table 62**

*Mean SRSS-IE Externalizing Composite Scores by Demographic Group – Purposive Sample (4+)*

Group	Population			Purposive Sample (4+)		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
Total Group	1,411	3.11	3.95	458	7.70 <sup>1</sup>	3.79
Grade						
4	702	3.17	4.04	222	7.90 <sup>1</sup>	4.03
5	709	3.07	3.85	236	7.52 <sup>1</sup>	3.54
Gender						
Boys	719	3.71	4.26	281	7.96 <sup>1</sup>	3.84
Girls	692	2.51	3.49	177	7.52 <sup>1</sup>	3.54
Lunch Status						
Paid	910	2.17	3.14	209	6.87 <sup>1</sup>	3.26
Reduced	55	3.91	4.90	21	8.81 <sup>1</sup>	4.73
Free	446	4.97 <sup>1</sup>	4.57	228	8.36 <sup>1</sup>	3.99
Ethnicity						
Asian	37	2.19	2.78	8	6.00 <sup>1</sup>	3.55
Black	167	5.29 <sup>1</sup>	4.81	86	8.92 <sup>1</sup>	4.05
Caucasian	1,047	2.59	3.50	288	7.24 <sup>1</sup>	3.41
Hispanic	52	5.42 <sup>1</sup>	5.36	28	9.00 <sup>2</sup>	4.89
Multi-race	77	4.00 <sup>1</sup>	4.29	34	7.74 <sup>1</sup>	3.87
Native American	28	4.86 <sup>1</sup>	4.94	14	8.14 <sup>1</sup>	5.11
Pacific Islander	3	1.00	1.00	--	--	--

*Note.* Purposive Sample (4+) includes only scores rated  $\geq 4$  on the externalizing measure. <sup>1</sup> Meets the moderate-risk threshold for the externalizing measure. <sup>2</sup> Meets the high-risk threshold for the externalizing measure.

Table 63 intersects the risk factors composite scores with the mean externalizing composite scores for students whose externalizing score was a 4 or higher. When analyzing the purposive sample data, the average score met the moderate-risk threshold beginning at risk factors composite score of 7, which did not occur until a risk factor score of 9 with the entire population.

**Table 63**

*Mean SRSS-IE Externalizing and Risk Factors Composite Score Intersection – Purposive Sample (4+)*

Risk Factors Composite Score	Population			Purposive Sample (4+)		
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>
0	233	1.15	2.34	29	6.28 <sup>1</sup>	3.05
1	362	1.45	2.33	52	6.17 <sup>1</sup>	2.52
2	244	2.34	2.69	66	5.97 <sup>1</sup>	2.35
3	153	3.43	3.61	54	7.33 <sup>1</sup>	3.30
4	136	4.63 <sup>1</sup>	4.26	67	7.91 <sup>1</sup>	3.75
5	118	5.38 <sup>1</sup>	4.04	74	7.67 <sup>1</sup>	3.36
6	75	6.75 <sup>1</sup>	4.72	52	8.81 <sup>1</sup>	4.21
7	52	7.42 <sup>1</sup>	5.01	35	9.94 <sup>2</sup>	4.14
8	30	8.77 <sup>1</sup>	5.75	22	11.00 <sup>2</sup>	5.10
9	6	9.83 <sup>2</sup>	6.40	5	11.20 <sup>2</sup>	6.10
10	2	17.00 <sup>2</sup>	0	2	17.00 <sup>2</sup>	0
11	0	--	--	--	--	--
12	0	--	--	--	--	--

*Note.* Purposive Sample (4+) includes only scores rated  $\geq 4$  on the externalizing measure. <sup>1</sup> Meets the moderate-risk threshold for the externalizing measure. <sup>2</sup> Meets the high-risk threshold for the externalizing measure.

### ***Linear Regression Analysis***

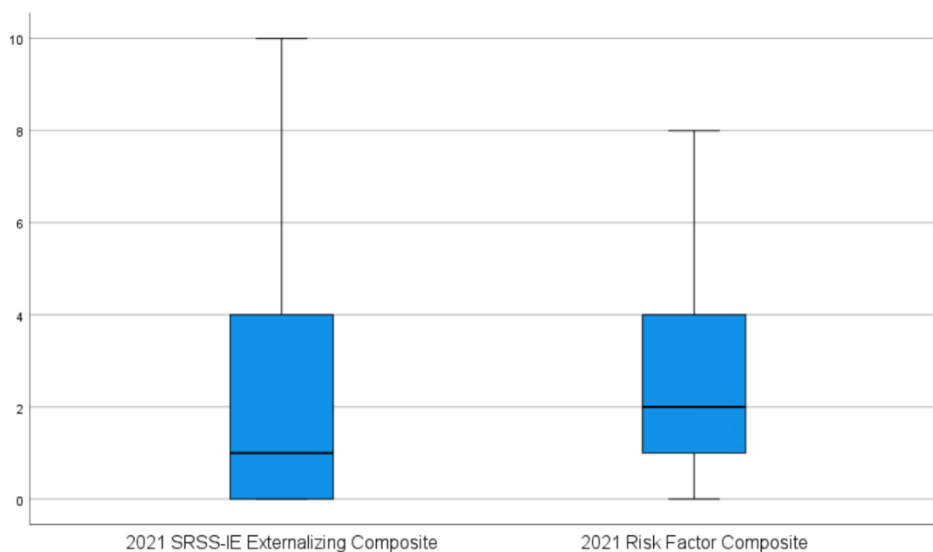
In preparation for running the regression models to better understand the predictive value, the risk factors composite score and individual risk factors had on the SRSS-IE externalizing composite score, testing parametric assumptions occurred. The first assumption, a continuous dependent variable, was confirmed by the SRSS-IE externalizing composite score scale (i.e., 0-21). The second assumption, a continuous independent variable was confirmed with the risk

factors composite score scale (i.e., 0-12). The third assumption, linearity between the dependent and independent variables, was verified by visual inspection of a scatterplot of the variables with a regression line, as previously shown in Figure 30.

The fourth assumption, the absence of outliers, was violated, as previously shown in Figure 31. There were 83 outliers among the SRSS-IE externalizing composite and risk factors composite scores that were removed, as shown in Figure 35. The removal of the outliers from the data set allowed the fourth assumption to be verified to proceed with the regression. The fifth assumption, independence of observations, was statistically assessed using the Durbin-Watson test. The Durbin-Watson statistic for the SRSS-IE externalizing and risk factors composite scores was 1.770. A Durbin-Watson approximate value of 2 indicates there was no correlation between residuals and confirms the fifth assumption (Laerd Statistics, 2020).

**Figure 35**

*SRSS-IE Externalizing and Risk Factors Composite Scores - Outliers Removed*

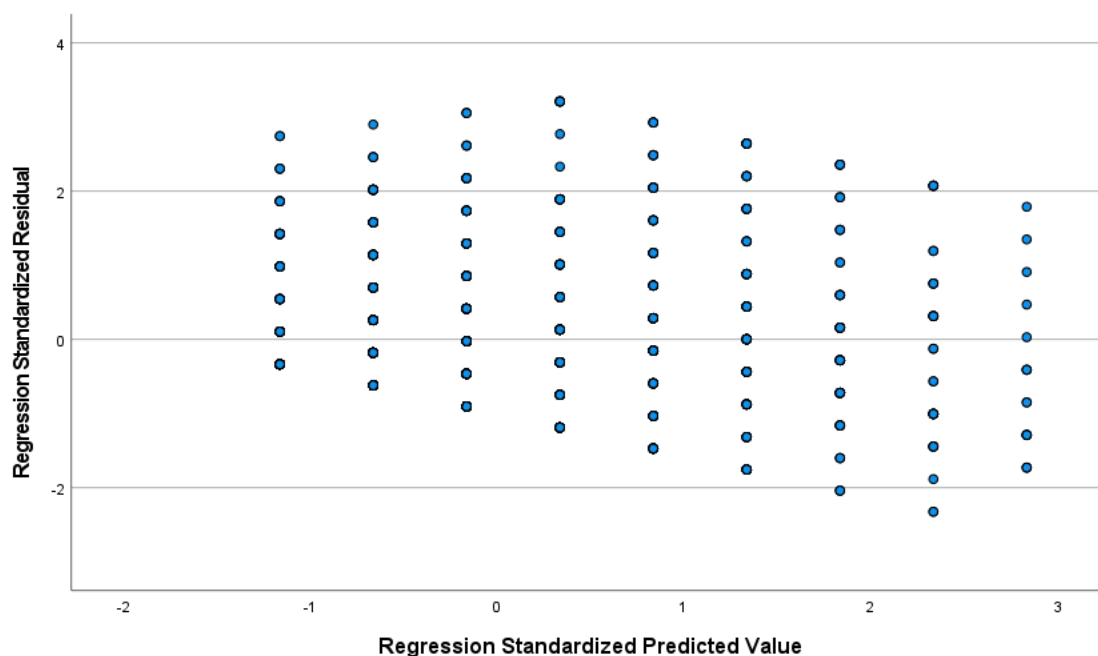


The sixth assumption, homoscedasticity, was an indication that the variance of the residuals was constant across the values of the independent variable (Laerd Statistics, 2020).

Homoscedasticity was assessed through a visual inspection of the regression standardized predicted values and the regression standardized residual values scatterplot, shown in Figure 36. The points on the scatterplot exist in a mostly rectangular shape, verifying the sixth assumption, homoscedasticity.

**Figure 36**

*SRSS-IE Externalizing and Risk Factors Composite Scores Homoscedasticity*



Normal distribution of residuals was the last assumption to verify before proceeding with the linear regression. This assumption was assessed through a visual inspection of a Normal P-P Plot of observed and expected cumulative probability. When the residuals are normally distributed, they closely align to the diagonal line. The Normal P-P Plot for the SRSS-IE externalizing and risk factors composite scores is shown in Figure 37. The residuals demonstrate normal distribution, and the final assumption was confirmed.

**Figure 37**

*SRSS-IE Externalizing and Risk Factors Composite Distribution of Residuals P-P Plot*

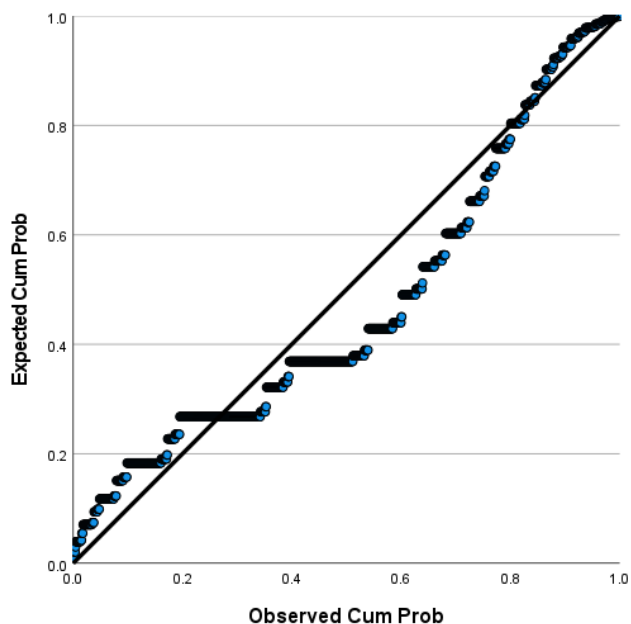


Table 64 provides the descriptive statistics for the linear regression. The mean SRSS-IE externalizing composite score for the data set ( $N = 1,328$ ) was 2.46 ( $SD = 1.92$ ). The average risk factors composite score in the data set was 2.43 ( $SD = 2.10$ ).

**Table 64**

*Linear Regression Descriptive Statistics - Externalizing and Risk Factors Composite Scores*

	<i>N</i>	<i>M</i>	<i>SD</i>
SRSS-IE Externalizing Composite	1,328	2.46	1.92
Risk Factors Composite	1,328	2.43	2.10

The risk factors composite score, as shown in Table 65, statistically significantly predicted the SRSS-IE externalizing composite score,  $F(1, 1,326) = 590.13$ ,  $p < .001$ , accounting for 31% of the variance in the SRSS-IE externalizing composite score, a medium effect size according to Cohen (1988). Each additional risk factors composite point led to a 0.77, 95% CI

[0.71, 0.83], increase on the SRSS-IE externalizing composite score, demonstrated in Table 66.

The estimated prediction equation was: SRSS-IE externalizing composite score = 0.59 + (0.77 \* Risk Factors Composite Score). Predictions were made, using the prediction equation, to determine the SRSS-IE externalizing score for the range of risk factors composite scores. The predictions are found in Table 67.

**Table 135**

*Summary of Linear Regression Model for SRSS-IE Externalizing and Risk Factors Composite Scores*

$R^2$	Adjusted $R^2$	SEE	Change Statistics				DW	
			$R^2$ change	F change	df1	df2		$p$
.31	.31	2.43	.31	590.129	1	1,326	<.001	1.770

*Note.* Predictor: 2021 risk factors composite.

**Table 66**

*Coefficients of Linear Regression Model for SRSS-IE Externalizing and Risk Factors Composite Score*

	Unstandardized Coefficients			95% Confidence Interval	
	B	SE	$p$	Lower	Upper
(Constant)	0.59	.10	<.001	0.39	0.80
Risk Factors Composite	0.77	.03	<.001	0.71	0.83

*Note.* Dependent variable: 2021 SRSS-IE composite score.



**Table 67***Predicted SRSS-IE Externalizing Composite Score Based on Risk Factors Composite*

Risk Factors Composite Score	Predicted SRSS-IE Externalizing Composite Score
0	0.59
1	1.36
2	2.13
3	2.90
4	3.67
5	4.44 <sup>1</sup>
6	5.21 <sup>1</sup>
7	5.98 <sup>1</sup>
8	6.75 <sup>1</sup>
9	7.52 <sup>1</sup>
10	8.29 <sup>1</sup>
11	9.06 <sup>2</sup>
12	9.83 <sup>2</sup>

*Note.* <sup>1</sup> Meets the threshold for moderate-risk for the internalizing measure. <sup>2</sup> Meets the high-risk threshold for the externalizing measure.

Like the overall and internalizing composite scores, the results generated to predict the externalizing composite score based on the risk factors composite score were rounded into whole numbers. Figure 38 shows the externalizing rounded results added to the chart with the overall and internalizing scores. Following the model of the previous two measures, the screener-determined risk ranges were color-coded to reflect low-risk (green), moderate-risk (yellow), and high-risk (red) ranges, and it has been added to the overall and internalizing composite results.

**Figure 38***SRSS-IE Externalizing Composite Prediction Table*

Risk Factor Composite Score	SRSS-IE		
	Overall Composite	Internalizing Composite	Externalizing Composite
0	1	0	1
1	2	1	1
2	4	1	2
3	5	1	3
4	6	2	4
5	7	2	4
6	9	2	5
7	10	2	6
8	11	3	7
9	12	3	8
10	14	3	8
11	15	3	9
12	16	4	10

*Note.* Green = low-risk range; yellow = moderate-risk range; red = high-risk range.

Again, following the process of the previous composite scores, the results from the rounded prediction table were applied to the same 20 randomly selected cases from the original data set representing the continuum of risk factors scores to gauge accuracy. The individual raw data and scaled scores are shown in Figure 39, with the scaled scores used to create the risk factors composite shaded gray. The risk factors composite score predicted the SRSS-IE externalizing risk level (i.e., low, moderate, or high), with 45% accuracy among these 20 students. This was the lowest accuracy rate of the three measures. Aligning with the two previous measures, Case ID 541977 was the only predicted risk level that was two levels from the actual composite risk level. For all other cases, when the risk level was not the same, they differed by one level.

**Figure 39**

*SRSS-IE Externalizing Composite Prediction Accuracy*

Case ID	Lunch Status	Lunch Status Score	ODR	ODR Score	Absenteeism	Absenteeism Score	Homelessness	Homelessness Score	Reading Performance	Rdg Perf Score	Math Performance	Math Perf Score	Gender2021	Gender Score	Ethnicity2021	Risk Factor Composite	Exernal Comp Predicted by RF Comp	Actual Externalizing Composite
218433	F	2	0	0	19.28	2			5.0	0	4.7	1	F	0	C	5	4	2
221544	F	2	0	0	13.56	2	2.4	1	2	2	1.3	2	M	1	C	9	8	5
318036	P	0	1	0	6.1	1			5.2	0	5.0	0	M	1	C	1	1	0
519894	R	1	0	0	0.58	0			2.8	2	1.7	2	F	0	C	5	4	10
524722	P	0	3	1	10.47	2			2.0	2	2.7	2	M	1	C	7	6	13
541977	P	0	2	1	9.98	1			4.6	1	5.0	0	M	1	C	3	3	18
559147	P	0	2	1	3.1	1			5.2	0	5.0	0	M	1	C	2	2	4
559589	P	0	0	0	0	0			5.4	0	5.0	0	M	1	C	0	1	0
561357	P	0	3	1	8.72	1			5.0	0	5.0	0	M	1	C	2	2	4
937737	F	2	0	0	4.94	1			5.5	0	5.0	0	F	0	C	3	3	0
938740	F	2	1	0	0.97	0			5.4	0	5.0	0	M	1	C	2	2	6
940797	P	0	0	0	0.58	0			5.0	0	5.0	0	F	0	C	0	1	0
944401	R	1	4	1	7.46	1			4.4	1	5.0	0	F	0	C	4	4	12
953105	F	2	0	0	2.52	0			5.4	0	5.0	0	M	1	C	2	2	0
955740	F	2	0	0	10.37	2			2.3	2	1.7	2	F	0	C	8	7	5
959888	P	0	2	1	4.55	1			4.4	1	5.0	0	M	1	C	3	3	9
1008100	F	2	0	0	7.75	1			4.6	1	2.7	2	F	0	C	6	5	1
1015495	P	0	0	0	17.54	2			3.6	1	4.3	1	F	0	C	4	4	7
1290555	R	1	16	2	4.94	1			2.3	2	1.3	2	M	1	C	8	7	18
1290606	F	2	1	0	5.04	1			2.4	2	5.0	0	M	1	C	5	4	7

### ***Multiple Regression Analysis***

A multiple regression analysis was performed to create a prediction estimation of the SRSS-IE externalizing composite score based on the individual risk factors (i.e., lunch status [serving as a proxy for socioeconomic status], office discipline referrals, absenteeism, homelessness, reading performance, and math performance) in the study. To analyze the impact the independent risk factors had on the SRSS-IE externalizing composite score, including the influence of gender (i.e., boys when girls were held constant) and ethnicity (i.e., Asian, Black, Hispanic, Multi-race, Native American, and Pacific Islander when Caucasian was held constant), a variety of multiple regression models were used. The results yielded an estimated prediction equation for the externalizing composite score.

There were 120 studentized residuals greater than  $\pm 3$  standard deviations that were removed from the regression model. An additional 183 cases were omitted due to missing data, resulting in 1,108 cases used in the models. The goal of the models was to determine a combination of variables that yielded the largest  $R^2$  value to represent smaller differences between the observed data and the predicted values. Table 68 summarizes the models with the highest  $R^2$  values. As with the other composite scores, homelessness was removed from the models when the correlation was not statistically significant, and its removal did not affect the  $R^2$  value.

**Table 68***Summary of Multiple Regression Models for SRSS-IE Externalizing Composite Score*

Model	<i>R</i>	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	SEE	Change Statistics			
					<i>R</i> <sup>2</sup> Change	F Change	<i>p</i>	DW
1	.69 <sup>a</sup>	.48	.48	2.12	0.48	207.93	< .001	1.897
2	.71 <sup>b</sup>	.50	.50	2.06	0.05	186.54	< .001	1.882
3	.71 <sup>c</sup>	.51	.50	2.02	0.51	102.63	< .001	1.935
4	.72 <sup>d</sup>	.52	.52	1.99	0.52	119.31	< .001	1.943

Note. <sup>a</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge.

<sup>b</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge, gender.

<sup>c</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge, ethnicity.

<sup>d</sup> Predictors: Absenteeism, Lunch Status, ODRs, Reading Challenge, Math Challenge, gender, ethnicity.

The multiple regression model 4 statistically significantly predicted the SRSS-IE externalizing composite score,  $F(10, 1096) = 119.31, p < .001, \text{adj. } R^2 = .52$ . The ethnicity variables Black and Native American did not add statistical significance and lowered the  $R^2$  value, and they were, consequently, removed from the model. The ethnicity variables Multi-race and Pacific Islander did not add statistical significance, but their removal lowered the  $R^2$  value, therefore, they were kept in the model. All other variables added statistical significance to the prediction,  $p < .05$ . Regression coefficients and standard errors can be found in Table 69. The estimated prediction equation was: SRSS-IE Externalizing Composite Score =  $0.33 + (0.34 * \text{Lunch Status Score}) + (6.02 * \text{ODR Score}) + (0.37 * \text{Absenteeism Score}) + (0.77 * \text{Reading score}) + (1.17 * \text{Math Score}) + (0.68 * \text{Boy}) - (1.05 * \text{Asian}) + (0.68 * \text{Hispanic}) + (0.24 * \text{Multi-race}) - (3.20 * \text{Pacific Islander})$ .

**Table 69**

*Summary of Multiple Regression Model for SRSS-IE Externalizing Composite Score and Risk Factors*

SRSS-IE Composite	<i>B</i>	95% CI for <i>B</i>		<i>SE B</i>	$\beta$	$R^2$	$\Delta R^2$
		<i>LL</i>	<i>UL</i>				
Model						0.52	0.52***
Constant	0.33**	0.10	0.56	0.12			
Lunch Status	0.34***	0.20	0.49	0.07	.011***		
ODR	6.02***	5.39	6.65	0.32	0.41***		
Absenteeism	0.37***	0.20	.055	0.09	0.09***		
Reading	0.77***	0.54	0.99	0.12	0.18***		
Math	1.17***	0.92	1.41	0.13	0.27***		
Boy	0.68***	0.44	0.92	0.12	0.12***		
Asian	-1.05**	-1.73	-0.37	0.12	0.12**		
Hispanic	0.68*	0.03	1.33	0.33	0.04*		
Multi-race	0.24	-0.30	0.77	0.27	0.12		
Pacific Islander	-3.20	-7.12	0.72	0.27	0.02		

*Note.* Model – “Enter” method in SPSS Statistics; *B* = unstandardized regression coefficient; CI

= confidence interval; *LL* = lower limit; *UL* = upper limit; *SE B* = standard error of the

coefficient;  $\beta$  = standardized coefficient;  $R^2$  = coefficient of determination;  $\Delta R^2$  = adjusted  $R^2$ .

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

This SRSS-IE externalizing prediction equation was applied to the same twenty randomly selected students representing the continuum of risk factors scores. This was done to determine accuracy in this select group and to compare accuracy levels between the use of the prediction equation and the risk factors composite score as the predictor. As shown in Figure 40, 12 of the 20 cases, or 60%, were predicted at the same risk level as the actual teacher-completed screening in 2021. This was a 15% increase in accuracy over the risk factors composite score accurately predicting the SRSS-IE externalizing composite score. In all cases, when the predicted risk level did not match the actual risk level, they differed only by one level.

**Figure 40**

*SRSS-IE External Composite Risk Level Prediction Equation Comparison*

Case ID	Lunch Status	Lunch Status Score	ODR	ODR Score	Absenteeism	Absenteeism Score	Homelessness	Homelessness Score	Reading Performance	Rdg Perf Score	Math Performance	Math Perf Score	Gender2021	Gender Score	Ethnicity2021	Equation Predicted SRSS-IE Composite	Actual SRSS-IE Internalizing
218433	F	2	0	0	19.28	2			5.0	0	4.7	1	F	0	C	2	8
221544	F	2	0	0	13.56	2	2.4	1	2	2	1.3	2	M	1	C	3	1
318036	P	0	1	0	6.1	1			5.2	0	5.0	0	M	1	C	1	0
519894	R	1	0	0	0.58	0			2.8	2	1.7	2	F	0	C	2	0
524722	P	0	3	1	10.47	2			2.0	2	2.7	2	M	1	C	3	0
541977	P	0	2	1	9.98	1			4.6	1	5.0	0	M	1	C	1	8
559147	P	0	2	1	3.1	1			5.2	0	5.0	0	M	1	C	1	0
559589	P	0	0	0	0	0			5.4	0	5.0	0	M	1	C	1	0
561357	P	0	3	1	8.72	1			5.0	0	5.0	0	M	1	C	1	0
937737	F	2	0	0	4.94	1			5.5	0	5.0	0	F	0	C	1	0
938740	F	2	1	0	0.97	0			5.4	0	5.0	0	M	1	C	1	5
940797	P	0	0	0	0.58	0			5.0	0	5.0	0	F	0	C	1	0
944401	R	1	4	1	7.46	1			4.4	1	5.0	0	F	0	C	2	3
953105	F	2	0	0	2.52	0			5.4	0	5.0	0	M	1	C	1	0
955740	F	2	0	0	10.37	2			2.3	2	1.7	2	F	0	C	3	8
959888	P	0	2	1	4.55	1			4.4	1	5.0	0	M	1	C	1	0
1008100	F	2	0	0	7.75	1			4.6	1	2.7	2	F	0	C	3	4
1015495	P	0	0	0	17.54	2			3.6	1	4.3	1	F	0	C	1	2
1290555	R	1	16	2	4.94	1			2.3	2	1.3	2	M	1	C	4	2
1290606	F	2	1	0	5.04	1			2.4	2	5.0	0	M	1	C	1	0

**Conclusion**

This chapter presented the statistical results of the analyzed data. Analyses indicated that there were statistically significant relationships among the risk factors composite score, the individual risk factors of socioeconomic status (i.e., lunch status), absenteeism, office discipline referrals, reading performance, math performance, and the SRSS-IE composite scores (i.e., overall, internalizing, and externalizing). Through linear regression models, the risk factors composite score was found to have predictive value for each of the SRSS-IE composite scores. Additionally, multiple linear regression models determined the predictive value of the aforementioned individual risk factors by gender and ethnicity for the SRSS-IE overall, internalizing, and externalizing composite scores. A more detailed analysis related to these variables was presented. Chapter 5 will provide an interpretation of the findings along with recommendations for practice and concludes with suggestions for further research related to this study.



## Chapter 5: Discussion

The mental health of an individual is determined by the synergistic interaction of biological, psychological, and social factors. Around the globe, mental health disorders are the leading cause of disability in children and adolescents (Fatori et al., 2013). Common childhood characteristics exist among those who have been diagnosed with a mental health condition including parental mental illness, substance abuse, socioeconomic status, divorce, abuse, neglect, housing insecurity, school failure, race, ethnicity, and gender (Fatori et al., 2013; Göbel et al., 2016; Levitt et al., 2007; Stinson et al., 2016). Youth who experience mental health conditions are more likely to experience diminished outcomes in adulthood including difficulty in making and maintaining relationships, difficulty finding and maintaining housing and employment, and engaging in riskier behaviors such as criminal activity, substance abuse, and promiscuity which can contribute to an earlier death (Nee & Witt, 2013; Stinson et al., 2016; von Stumm et al., 2011).

“The prevention of youth mental health problems is more efficient and cost-effective than providing treatment for problems that have already developed” (Levitt et al., 2007, p. 166). As part of their three-tiered model of providing instruction and intervention, referred to as a multi-tiered system of supports (MTSS), schools across the country are implementing social and emotional learning (SEL) programs that assist children to recognize and manage their emotions, develop empathy, practice problem solving, and engage with peers using a variety of interpersonal skills (Payton et al., 2000). In addition to providing SEL instruction, teachers complete universal screening to aid in identifying early symptoms indicative of later mental health conditions (von der Embse et al., 2018). The symptoms of childhood mental health conditions are grouped by internalizing and externalizing behaviors (Göbel et al., 2016).

Universal screening helps schools in the allocation of resources to support students demonstrating enough uniqueness or severity of symptoms.

The purpose of this study was to investigate the predictive value that annually-collected school registration and progress data which are associated with childhood risk factors for mental health conditions (i.e., socioeconomic status, homelessness, office discipline referrals, absenteeism, and academic performance) have on the results of the Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE). The study sought to gain an understanding of which existing school data were most correlated with and predictive of the SRSS-IE overall, internalizing, and externalizing composite scores, to potentially monitor student risk throughout the entire school year, rather than at the three formal points in time of the universal screening required by the MTSS protocol. The topic of this study is especially pertinent as the world is shifting from the COVID-19 pandemic to the endemic, which has impacted the mental health of a wide range of adults and youth in a variety of ways.

### **Summary of Study Methodology**

This quantitative retrospective correlational study formulated three research questions to investigate the associations and the predictive value of risk factors and risk factors composite scores on the SRSS-IE composite scores of 4<sup>th</sup> and 5<sup>th</sup> grade students at a Midwest public school district. The first research question (RQ1) looked specifically at the correlations among the SRSS-IE overall composite score and the risk factors composite score to determine the degree to which the risk factors composite score predicted the SRSS-IE overall, internalizing, and externalizing composite scores. Two secondary research questions, determining the correlation and predictive value each risk factor had on the internalizing composite score (RQ2) and establishing the correlation and predictive value each risk factor had on the externalizing

composite score (RQ3), were developed to explore the extent of the relationships of the independent risk factors and the role they played in predicting internalizing and externalizing behaviors.

The participant group included all fourth and fifth grade students from the school district who had spring 2021 SRSS-IE universal screening data. There were 1,411 students who met this criterion, and their data were entered into the study. Additional student data were provided by the school district and included for each student was a three-year history (i.e., 2018-19, 2019-20, and 2020-21) of attendance rates, office discipline referrals, school lunch status (which was used in this study as a proxy for socioeconomic status), homelessness status, reading performance, and math performance. Due to the violation of the statistical assumptions, specifically, the absence of outliers, study data were analyzed using the non-parametric inferential test, Spearman's Rho Correlation (see Chapter 4, page 108 for more information).

### **Summary and Discussion of Findings**

This study aimed to investigate the relationship between the risk factors composite score and the SRSS-IE composite scores (i.e., overall, internalizing, and externalizing). Additionally, the study investigated the predictive value of the risk factors composite score and the subsequent risk factors had on the SRSS-IE composite scores. The results for the primary research question demonstrated that there were statistically significant relationships between the predictor variable (i.e., risk factors composite) and the outcome variable (i.e., SRSS-IE overall composite, internalizing composite, and externalizing composite). Furthermore, the results indicated that the predictor variable can aid in forecasting the universal screening outcome. The results from the secondary research questions found that some independent risk factors held greater predictive

value on the outcome variable (i.e., overall composite, internalizing composite, and externalizing composite), and gender and ethnicity were influential in predicting the outcome.

Six independent variables were identified for the study that school districts often capture annually as part of the school registration process or through school year accumulation. Previous research indicates these variables (i.e., socioeconomic status, absenteeism, office discipline referrals, homelessness, reading performance, and math performance) often occurred in the childhoods of adults who were later diagnosed with mental health conditions. Adults with mental health conditions were often raised in low-income homes, had more absences from school, had more behaviors in school that went against the social norm, experienced housing insecurity, and had more academic challenges (Brydges et al., 2019; Fatori et al., 2013; Göbel et al., 2016; McIntosh & Goodman, 2016; Morrissey et al., 2014; Murphy et al., 2014). Additionally, research demonstrated that gender and ethnicity played a role in mental health diagnoses (Fatori et al., 2013; Jaffee et al., 2002; DHHS, 2001).

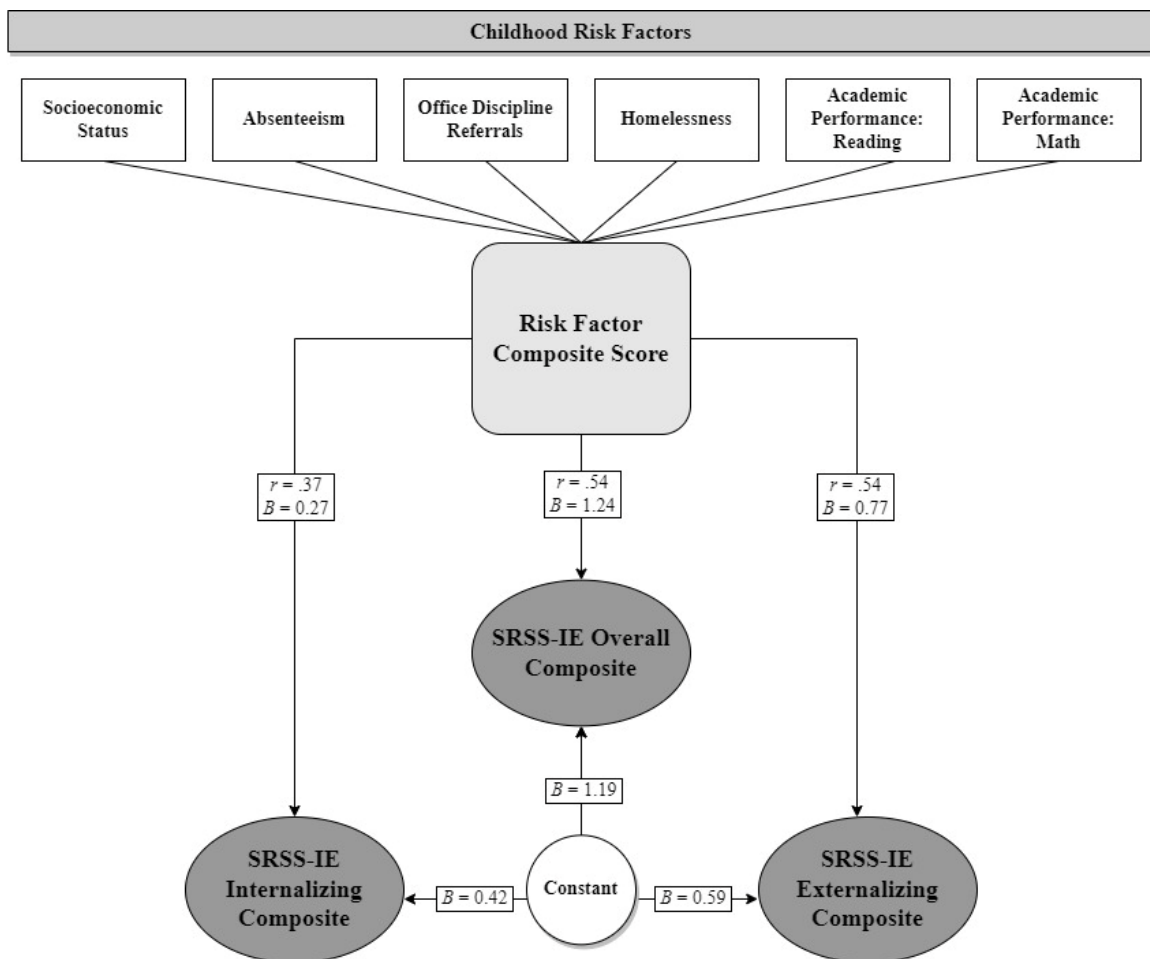
### ***Risk Factors Composite Score Predictions***

The risk factors composite score is a single score comprised of socioeconomic status (i.e., lunch status), rate of absenteeism, number of office discipline referrals, length of the school year the child did not have permanent housing or was homeless, reading performance, and math performance. In preparation for the linear regression, the six independent variables used in the study were scaled (i.e., 0-2) as described in Chapter 3, pages 94-96. The scale score of each variable was added together to create each participant's risk factors composite score. Linear regression models were used to determine the predictive value the risk factors composite score had on the dependent variables (i.e., SRSS-IE overall composite score, internalizing composite score, and externalizing composite score). Figure 41 shows the research structural model for the

risk factors composite score predicting the SRSS-IE overall, internalizing, and externalizing composite scores. The six independent risk factors were combined to create the risk factors composite score which holds predictive value for each of the SRSS-IE composite scores. The correlation coefficients ( $r$ ) demonstrate the relationship between the risk factors composite score and the SRSS-IE composite score, and the beta coefficients ( $B$ ) describe the degree of change in the SRSS-IE composite score for every unit of change in the risk factors composite score.

**Figure 41**

*SRSS-IE Composite Score Predictions Based on Risk Factors Composite Score*



**SRSS-IE Overall Composite Prediction Based on Risk Factors Composite.** The risk factors composite score added the most predictive value to the SRSS-IE overall composite score, followed by the externalizing composite score, and then the internalizing composite score. This was to be expected since the SRSS-IE overall composite score was comprised of the internalizing and externalizing measures. Risk factors composite scores of 0-3 predicted low-risk for the SRSS-IE overall composite scores, as shown in Figure 42. Risk factors composite scores of 4-9 predicted moderate-risk and risk factors composite scores of 10-12 predicted high-risk levels on the SRSS-IE overall composite score. Comparing these predictions to the population's SRSS-IE overall composite score means, also shown in Figure 42, shows that students with risk factors composite scores of 0-3 had mean SRSS-IE overall composite scores that were in the low-risk level, risk factors composite scores of 4-7 met the threshold for moderate-risk on the screener, and risk factors composite scores of 8 or more met the high-risk range. The prediction model and population matched, except for the point where the moderate threshold crossed into the high-risk level. As shown, the 2021 teacher-rated universal screener crossed into the high-risk level for overall behavior at a lower risk factors composite score (i.e., 8), compared to the risk factors composite score prediction model of 10, demonstrating that the teacher-rated screener was more likely to place a student at higher risk level than the risk factors composite prediction model.

**Figure 42**

*Comparison of SRSS-IE Overall Risk Levels - RF Composite Predicted and Population Score Means*

<b>Risk Factor Composite Score Prediction</b>	<b>2021 SRSS-IE Mean Score and Risk Factor Score Intersection</b>
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12

*Note.* Population SRSS-IE overall mean score and risk factor intersection is found on page 120.

Green = low-risk range; yellow = moderate-risk range; red = high-risk range.

The predicted SRSS-IE overall risk level, according to the risk factors composite score, was applied to 20 randomly selected students who represented a range of risk levels. The risk factors composite score accurately predicted the SRSS-IE overall risk level with 60% accuracy, which meets the threshold for successfully predicting human behavior (Frost, 2020). In the eight cases where the risk levels were not the same, 7 of them were at a higher risk level when screened by their teacher. This could be attributed to the threat to internal validity called data collector bias. Data collector bias could have inflated the scoring results based on interactions between the teacher and student that occurred near the time of the universal screening.

**SRSS-IE Internalizing Composite Prediction Based on Risk Factors Composite.** The risk factors composite score added the least predictive value to the SRSS-IE internalizing composite score. As shown in Figure 43, risk factors composite scores of 0-3 predicted a low-risk level on the SRSS-IE internalizing composite score, a risk factors composite of 4-11 predicted moderate-risk, with a risk factor score of 12 predicting the only high-risk level of the internalizing universal screening measure. Comparing these findings to the population's average SRSS-IE internalizing scores, also shown in Figure 43, students with a risk factors composite score of 0-2 were in the low-risk range, risk factors composite scores of 3-7 and 9 met the threshold for moderate-risk, and the average SRSS-IE internalizing scores with risk factors composite scores of 8 and 10 met the threshold for high-risk. The transitions between the levels for internalizing behaviors were not as clearly identified as they were for the overall composite score risk level prediction. Similar to the SRSS-IE overall comparison, the teacher-rated mean scores for internalizing behaviors meet higher risk thresholds at lower risk factors composite scores, compared to the risk factor prediction model.



**Figure 43**

*Comparison of SRSS-IE Internalizing Risk Levels - RF Composite Predicted and Population Score Means*

<b>Risk Factor Composite Score Prediction</b>	<b>2021 SRSS-IE Mean Score and Risk Factor Score Intersection</b>
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12

*Note.* Population SRSS-IE internalizing mean score and risk factor intersection is found on page 148. Green = low-risk range; yellow = moderate-risk range; red = high-risk range.

Using the risk factors composite prediction with the same twenty students described in the SRSS-IE overall prediction, the risk factors composite prediction estimated the internalizing risk level with 60% accuracy. This accuracy rate meets and exceeds the literature's findings for successfully predicting human behavior (Frost, 2020). In the 9 cases where the risk level was not the same, the teacher rated the student at a less severe risk level in 4 cases and a more severe risk level in 5 cases, compared to the prediction. This variability, along with the variance of the population's mean SRSS-IE internalizing score crossing the threshold levels, may be because teacher observations of the covert internalizing behaviors are more difficult to detect or inconsistently defined. Research has repeatedly indicated that students displaying internalizing behaviors are more likely to be overlooked (Freeman et al., 2018; Göbel et al., 2016; Kjeldsen et

al., 2016; Lane et al., 2012). While it cannot be verified, the varied results seem to support the research.

**SRSS-IE Externalizing Composite Prediction Based on Risk Factors Composite.** The risk factors composite score added more predictive value to the SRSS-IE externalizing composite score than it did to the internalizing composite score. In its original format, the SRSS was developed to detect elementary-aged students with antisocial tendencies (Drummond, 1994). Using the model and shown in Figure 44, risk factors composite scores of 0-3 predicted low-risk on the SRSS-IE externalizing measure, risk factors composites of 4-10 predicted moderate-risk, and risk factors composite scores of 11-12 predicted high-risk. Compared to the population's mean SRSS-IE externalizing composite scores and also shown in Figure 4, the groups with a risk factors composite score of 0-3 were in the low-risk range, risk factors composite scores of 4-8 met the moderate-risk threshold, and risk factors composite scores of 9 or more met the high-risk threshold. This comparison demonstrates that students in this school district were more likely to be flagged as high-risk for externalizing behaviors on the teacher-completed universal screener than they would have been using the risk factors composite score prediction model.

**Figure 44**

*Comparison of SRSS-IE Externalizing Risk Levels - RF Composite Predicted and Population Score Means*

<b>Risk Factor Composite Score Prediction</b>	<b>2021 SRSS-IE Mean Score and Risk Factor Score Intersection</b>
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12

*Note.* Population SRSS-IE externalizing mean score and risk factor intersection is found on page 174. Green = low-risk range; yellow = moderate-risk range; red = high-risk range.

The predicted SRSS-IE externalizing risk level according to the risk factors composite score was utilized with the twenty randomly selected students reflecting the range of risk levels in the population. The risk factors composite score predicted the SRSS-IE externalizing composite score with 45% accuracy. This accuracy rating falls short of the 50% mark for effective prediction of human behavior according to the research (Frost, 2020). In the 11 cases where the risk factors composite score did not accurately predict the teacher’s rating, 9 of them had the teacher’s rating resulting in a more severe risk level. Similar to the SRSS-IE overall composite score discrepancy, this could be attributed to data collector bias.

Based on the findings of the linear regression models used in this study and a review of literature, the opportunity to predict mental health conditions as their symptoms relate to overall, internalizing, and externalizing behavior exists. The evidence collected from this study suggests

that school personnel would be equipped to monitor students' mental and behavioral health needs through ongoing data collection. The study results do not demonstrate causation, nor do they suggest mental health diagnoses. They do, however, serve as a warning system that can alert school officials to conduct further investigation, which may include additional screening and diagnostic assessments.

### ***Equation Model Predictions***

Regression models were used to determine the predictive value the selected independent variables (i.e., absenteeism, socioeconomic status, office discipline referrals, homelessness, reading performance, and math performance) had on the dependent variables (i.e., SRSS-IE overall composite score, internalizing composite score, and externalizing composite score). For the SRSS-IE overall, internalizing, and externalizing composite scores, the manipulation of the individual risk factors more accurately predicted the results of the teacher-completed screener. The following sections provide the discussion for each of the SRSS-IE composites scores and the corresponding research structural model.

**SRSS-IE Overall Composite Equation Model Prediction.** Jokela et al. (2009) described problem behaviors in childhood as being related to an increased risk of early mortality in adulthood. Problem behaviors can be divided into two main categories that include internalizing (covert) and externalizing (overt) behaviors. Mental health conditions often present themselves through internalizing and externalizing behaviors (Göbel et al., 2016). The Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE), aims to efficiently identify students with behaviors that deviate from the social norm, violate other people's rights, and impede meaningful interactions with others through regular universal screening of internalizing and externalizing behaviors (Lane et al., 2012). The SRSS-IE identifies a protocol for identifying

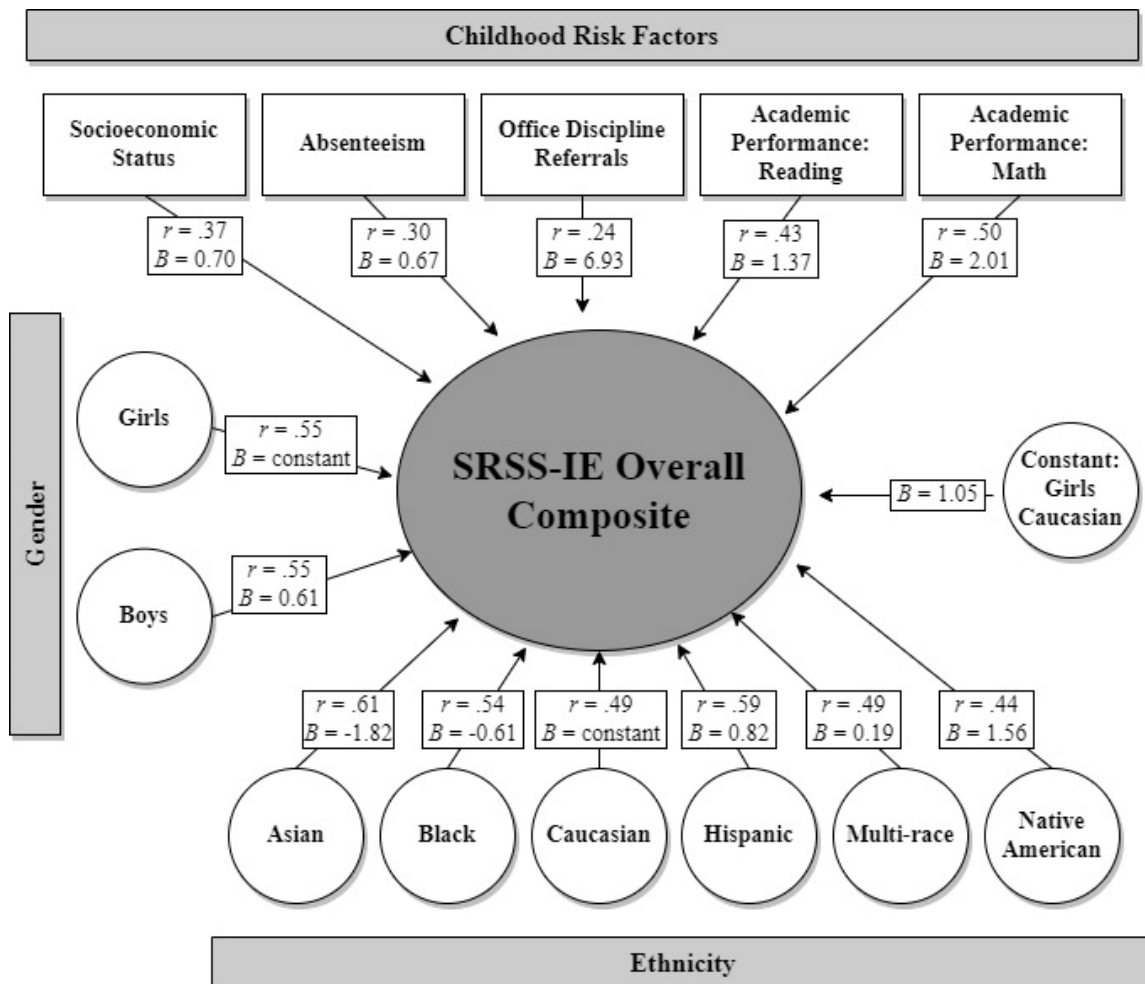
risk through internalizing and externalizing behavior composite scores, and for this study, the researcher combined those measures to create an overall composite score and corresponding risk levels, for which the screener's administration manual does not provide guidance.

The structural research model for the SRSS-IE overall composite score using the equation prediction model, as shown in Figure 45, illustrates the relationships and predictive value of each variable in the equation. The correlation coefficients ( $r$ ) demonstrate the relationship between the risk factors composite score and the SRSS-IE overall composite score. The beta coefficients ( $B$ ) describe the degree of change in the SRSS-IE overall composite score for every unit of change in the individual risk factor.

Of the six individual risk factors identified for the study, all of them, except for homelessness, contributed to the prediction equation for the SRSS-IE overall composite score. Office discipline referrals provided the greatest value in the prediction model. Recalling that the universal screener used in the study was originally developed to only detect anti-social behaviors, those behaviors that are more aligned to externalizing behaviors, it was not surprising that office discipline referrals would be the most significant predictor of the overall composite score.

**Figure 45**

*SRSS-IE Overall Composite Score Prediction Research Structural Model*



Research indicates that student academic performance can be affected by school attendance, behavior, biology, and attitudes (Suldo et al., 2013). Academic success, which was once focused solely on completion of school, has grown to include the attitudes and behaviors that serve as enablers in the school setting, alongside assessed skills and grades (Doll et al., 2012). Following office discipline referrals, academic performance in math and reading were the second and third most significant predictors for the SRSS-IE overall composite score. This supports the literature that student academic performance plays an important role in the degree to

which student mental health can be predicted (Breslau et al., 2009; Stack & Dever, 2020; Suldo et al., 2013).

Numerous studies have been published on rates of psychiatric disorders based on socioeconomic status (Boynton-Jarrett et al., 2013; Chen et al., 2018; Dooley et al., 1998; McLeod et al., 2012). While patterns are not always consistent, children who are raised in low-income, high-poverty homes generally experience higher rates of hardship and mental health disorders (McLeod et al., 2012). In this study, interestingly, socioeconomic status (i.e., student lunch status), while it provided value to the prediction, was the second to last most significant of the childhood risk factors, coming just ahead of absenteeism. This raises the question of whether using the student's lunch status as a proxy for socioeconomic status was the best substitute in this study.

Ethnicity and gender play a role in the prediction of student behavior. Like socioeconomic status, studies on mental health disorders as they relate to gender and ethnicity are plentiful, with results often indicating that disadvantaged social statuses are more likely to experience negative mental health conditions (Achenbach et al., 1995; Kwan et al., 2018; McLeod et al., 2012; Stansfeld et al., 2016). This study's results support the literature with the ethnicities of Native American followed by Hispanic adding most significantly to the SRSS-IE overall composite score prediction value. Being Native American was the third most influential factor in the SRSS-IE overall composite prediction model, following math performance.

The developed prediction model was applied to twenty randomly selected Caucasian students from the original population. Selecting all 20 students from this ethnicity better ensured anonymity in the study. Applying the prediction model to these students demonstrated 65% accuracy in predicting the same risk level as the original screening measure completed by the

classroom teacher. Predicting human behavior in the social sciences is not easy, and success in doing so can be defined when it is done with about fifty percent accuracy (Frost, 2020). This study yielded a prediction model for overall behavior that accurately predicted the risk level with more than 50% accuracy. Therefore, consideration should be made to incorporate a protocol for ongoing data collection and monitoring through the equation model discovered in this study. In the seven cases where the prediction equation risk level did not match the teacher rating risk level, four of the predicted risk levels were more severe and three were less severe.

**SRSS-IE Internalizing Composite Equation Model Prediction.** Internalizing behaviors are covert behaviors that can be difficult, at times, to readily recognize (e.g., anxiety, depression, social withdrawal, somatic complaints) (Lane et al., 2012). The SRSS-IE was expanded from its original format to include the examination of internalizing behaviors as part of the universal screening process which previously focused on externalizing behaviors alone (Lane et al., 2015). Of the six childhood risk factors incorporated into this study, only four of them held predictive value on the SRSS-IE internalizing composite score, as shown in Figure 6. Like the SRSS-IE overall prediction model, office discipline referral was the childhood risk factor with the greatest predictive value of the internalizing composite score, although it was much less significant. Practitioners may assume that office discipline referrals occur primarily for externalizing behaviors. However, internalizing behaviors that may generate a referral to administration might be categorized as work refusal or non-compliance (McIntosh & Goodman, 2016).

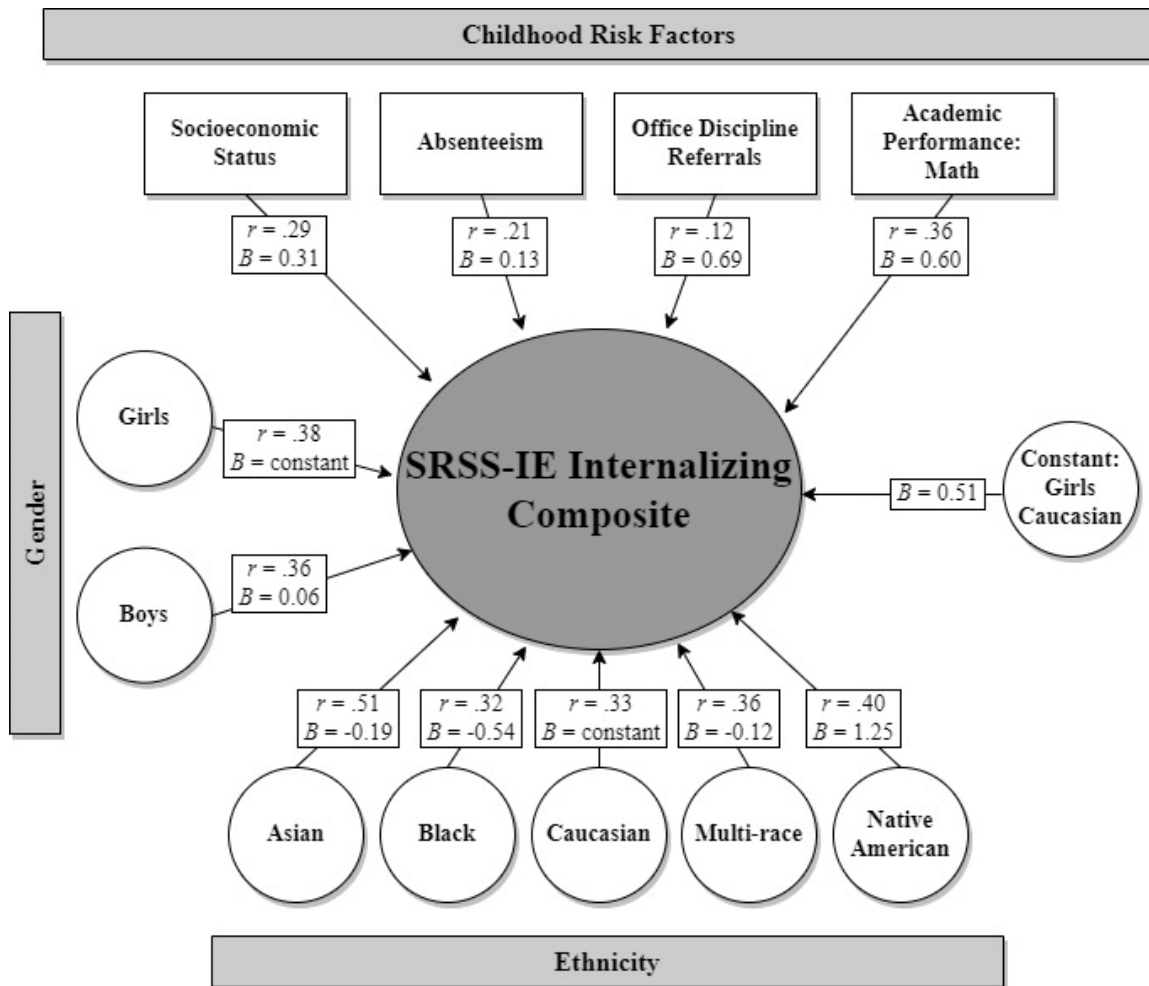
The structural research model for the SRSS-IE internalizing composite score is shown in Figure 46. The structural research model shows the relationships and predictive values of each variable in the equation. The correlation coefficients ( $r$ ) demonstrate the relationship between the risk factors composite score and the SRSS-IE internalizing composite score. The beta



coefficients (*B*) describe the degree of change in the SRSS-IE internalizing composite score for every unit of change in the individual risk factor.

**Figure 46**

*SRSS-IE Internalizing Composite Score Prediction Research Structural Model*



Interestingly, while behavioral difficulties are well documented among students who struggle with reading performance, reading performance did not provide predictive value to the SRSS-IE internalizing composite score in this study (Chen et al., 2018; Metsäpelto et al., 2017; Morgan et al., 2008). However, math performance was the childhood risk factor that held the second-highest predictive value on the SRSS-IE internalizing composite score. There has been

more recent research focused on math achievement and its connection to anxiety. The research on math anxiety has seldom been linked to clinical research on anxiety disorders, but in the educational setting where math anxiety is mainly investigated, it has been shown to affect individual success and well-being (Luttenberger et al., 2018; Wu et al., 2013). The findings of this study support the literature on covert classroom behaviors and math performance (Breslau et al., 2009; Luttenberger et al., 2018; Stack & Dever, 2020).

The factor having the greatest impact on the internalizing composite score does not come from the six identified childhood risk factors defined for this study. Rather, being Native American had the greatest impact on the prediction for SRSS-IE internalizing scores. The unstandardized regression coefficients for each individual factor in the prediction model were less than 0.70, except Native American, which was 1.25, nearly double that of office discipline referrals, the risk factor with the next most substantial impact. It was the only ethnicity that added to the constant value to predict the internalizing composite score. Research indicates that Native American students demonstrate a dramatic decline in their academic performance between the fourth and seventh grades, which may be a result of a misalignment between Native American customs of visual observations and the Caucasian American teaching style deeply rooted in verbal explanation and abstract conceptualization (Hilberg & Tharp, 2002; U.S. Department of Health and Human Services [DHHS], 2001). The findings of this study support the literature, and this information should bring considerable pause to educational practitioners to evaluate teaching strategies and response options, especially for Native American students.

The developed SRSS-IE internalizing prediction equation from the study was applied to the same twenty students who were randomly selected from the original population. The equation predicted a risk level (i.e., low-, moderate-, high-risk) that matched the teacher's

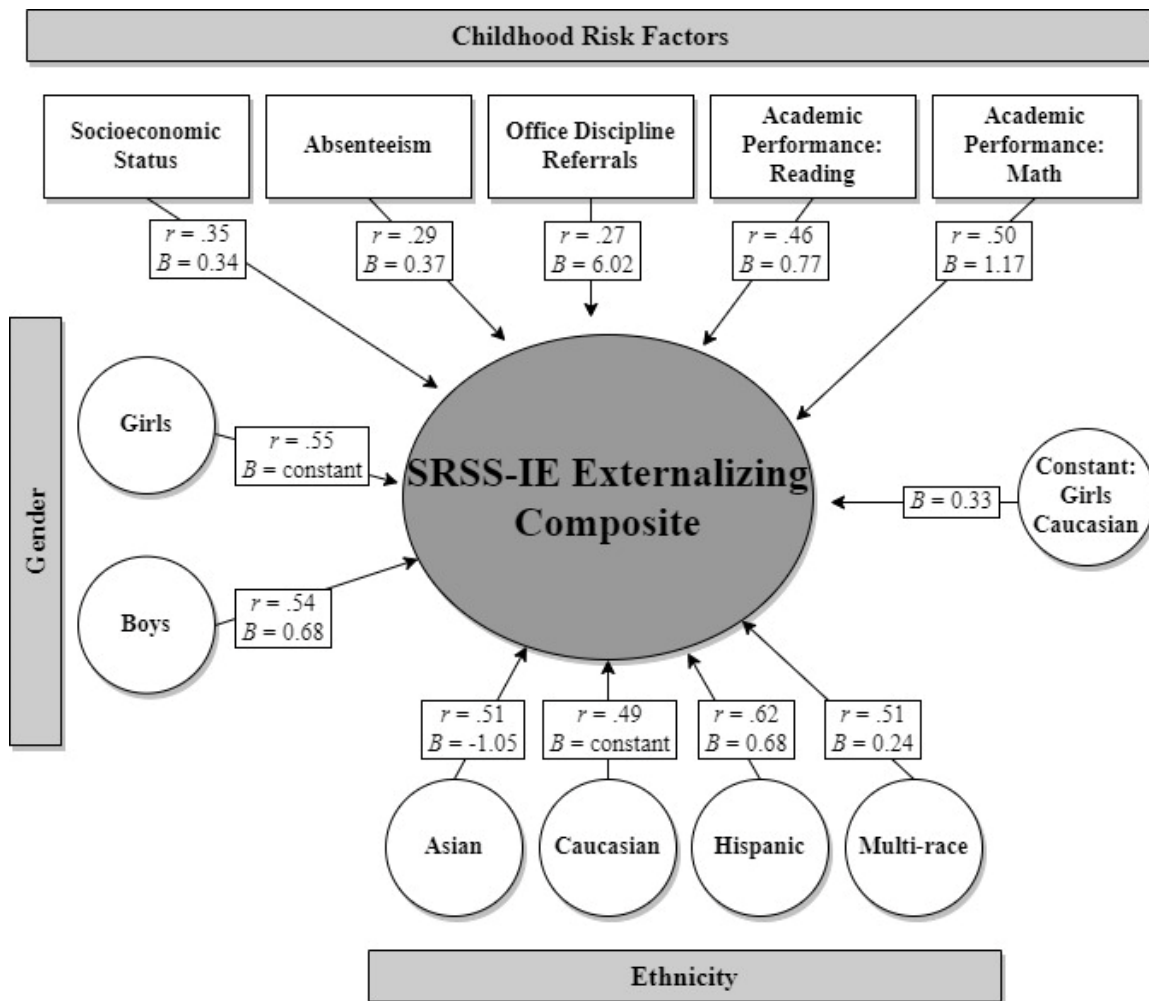
original rating with 65% accuracy. This level of accuracy in predicting human behavior hits the mark for success, with research indicating that models that predict human behavior at least 50% of the time are effective (Frost, 2020). In the seven cases where the predicted risk level did not match the teacher-rated screening risk level, six of them were rated a higher risk level by the teacher than the equation model.

**SRSS-IE Externalizing Composite Equation Model Prediction.** Externalizing behaviors are overt behaviors that are often associated with physical and verbal disruption, including verbal and physical aggression, delinquent activity, irritability, and impulsivity (Lane et al., 2012). Youth who demonstrate externalizing behaviors are more likely to struggle with antisocial behavior and substance abuse later in life, which can exacerbate the possibility of mental health problems (Jokela et al., 2009).

The structural research model for the SRSS-IE externalizing composite score is shown in Figure 47. The structural research model shows the relationships and predictive values of each variable in the equation. The correlation coefficients ( $r$ ) demonstrate the relationship between the risk factors composite score and the SRSS-IE externalizing composite score. The beta coefficients ( $B$ ) describe the degree of change in the SRSS-IE externalizing composite score for every unit of change in the individual risk factor.

**Figure 47**

*SRSS-IE Externalizing Composite Score Prediction Research Structural Model*



Like the overall composite score prediction model, five of the six childhood risk factors identified for this study provided predictive value to the externalizing composite score. Also, like the overall composite score prediction model, office discipline referrals provided the most significant predictive value, not only of the childhood risk factors but of all factors in the model. Office discipline referrals are repeatedly found in the research to be one of the most widely used methods for identifying students who may struggle with aggressive and disruptive behavior (McIntosh & Goodman, 2016; NCII & Center on PBIS, 2020; Sugai et al., 2000). The findings

of this study support the research, and the use of a multi-factor prediction model supports the additional guidance that office discipline referrals should be used in conjunction with other data sources (McIntosh & Goodman, 2016; NCII & Center on PBIS, 2020).

The academic performance areas of math and reading were the childhood risk factors that had the next most significant impact, respectively, on the prediction of the SRSS-IE composite score. Like the other composite scores, one can infer that students with fewer externalizing behaviors can attend to classroom instruction and activities more consistently. Whereas students who exhibit more externalizing behaviors are less likely to attend to the daily instruction and activities and are more likely to be referred to the office for disciplinary action, removing them further from classroom instruction. Through this inference, practitioners can recognize for students with externalizing behavioral difficulty how most of the childhood risk factors (i.e., office discipline referrals, math performance, reading performance, and absenteeism) are interconnected, demonstrating the need for prevention and intervention services through an MTSS framework.

The School to Prison Pipeline is a process in which youth in schools are criminalized through disciplinary policies and practices that disproportionately impact youth of color, especially African Americans (Nocella et al., 2018). As a result of the literature, it was expected that the ethnic groups of color would provide predictive value to the externalizing composite score. Interestingly, while Hispanic and multi-race added predictive value to the SRSS-IE externalizing composite, Black and Native American contradicted the research and brought no value to the prediction and were subsequently removed from the model.

Using the externalizing prediction equation, the SRSS-IE externalizing risk level (i.e., low-, moderate-, high-risk) was accurately aligned to the teacher's risk level rating 50% of the

time. Meeting the 50% threshold prediction as indicated in the research, this process of predicting human behavior could be seen as successful (Frost, 2020). For the 10 equation predicted risk levels that did not match the teacher-rated risk level, the teacher's rating placed 6 of the students at a more severe risk level than the equation prediction.

The findings of the multiple regressions and prediction equations consistently show that the risk factors of absenteeism, socioeconomic status, as determined by school lunch status in this study, office discipline referrals, math performance, gender, and ethnicity contributed to the predictive value of all three SRSS-IE composite scores for fourth and fifth grade students in this school district. Across all three measures, office discipline referrals and math performance were the individual risk factors that played the most significant role, enhanced by the other risk factors, ethnicity, and gender.

As shown in Table 70, the use of a prediction equation, accounting for the study's risk factors to be included individually, predicted with more accuracy the SRSS-IE overall and internalizing composite scores. Although the externalizing composite score was accurately predicted half of the time, the measure with the lowest accuracy rate, using the equation prediction model was more accurate than using the risk factors composite score as the predictor. The use of a prediction model allows schools to monitor for influxes and effluxes as the data used in the prediction models change throughout the school year. Through ongoing monitoring, school personnel can run further diagnostic screening and assessments to determine the next steps in supporting students who may be at risk for mental health problems.

**Table 70**

*Accuracy of Risk Level Prediction Models*

SRSS-IE Composite Score	Prediction Model	
	Risk Factors Composite Score	Individual Risk Factor Equation
Overall	60%	65%
Internalizing	60%	65%
Externalizing	45%	50%

**Implications of Findings**

Various studies have recommended the need to universally screen students for mental health concerns to ensure access to early intervention of services (Ballard et al., 2013; Essex et al., 2009; Levitt et al., 2007; von der Embse et al., 2018). Multiple studies have also demonstrated improved outcomes for youth who receive early intervening services related to mental health concerns (Doll & Lyon, 1998; Nemeroff et al., 2008; Payton et al., 2000; Santor et al., 2006; Wyman et al., 2010). “There is growing recognition that attention to students’ mental health functioning in school may promote learning and prevent the onset of numerous negative consequences associated with untreated mental health problems” (Levitt et al., 2007, p. 165).

Universal screening “reduces dependence on teacher referrals in a traditional reactive identification system and measures problem behavior across a spectrum of concerns” (Splett et al., 2018, p. 345). The findings offered as a result of this study are meant to urge school-based teams to observe school-collected data throughout the school year as a means of monitoring students for signs of potential mental health problems. A drawback of universally screening students, while it plays a critical role in identifying students who might require additional social, emotional, or behavioral support, is that the screening results yield a risk status of the current point in time, while mental health problems can wax and wane over time (Nemeroff et al., 2008).

These results provide an alternative or an in-conjunction-with option, that contributes to school teams being able to identify and support students through proactive, early intervention.

As previously mentioned in this chapter, researchers have demonstrated that children raised in low-income homes are more likely to experience higher rates of hardship and mental health disorders (Boynton-Jarrett et al., 2013; Chen et al., 2018; McLeod et al., 2012). Additionally, research exists that indicates that students' lunch statuses provide some information about relative poverty, they should not be confused with students living in poverty (Greenberg, 2018; Harwell & LeBeau, 2010; Suárez-Sousa & Bradbury, 2017). This study was limited to using existing data collected by the school district, which used the student's lunch status as a substitute for socioeconomic status. Based on the findings of this research, a recommendation to the school district is to collect household income at the time of school registration or to utilize direct certification as a socioeconomic replacement option (Greenberg, 2018). Using a parent-reported household income amount may strengthen the predictive value of the socioeconomic status variable, thus improving prediction accuracy.

This study was built on the life course theory and the age-graded theory of social control which emphasize the critical role childhood experiences have on adulthood outcomes, including those related to mental health (Lu et al., 2018; Sampson & Laub, 1993). The life course theory perspective enables the examination of early life exposures and their connectedness to later life outcomes (Lu et al., 2018). Similarly, the age-graded theory of social control demonstrates later in life criminal acts are connected to earlier life deviant behavior related to lack of self-control (Sampson & Laub, 1993). School-attending youth bring with them a vast array of childhood experiences that influence internalizing and externalizing behaviors. The MTSS framework, “when implemented appropriately, provides a way for schools and districts to organize practices,



data, and systems to promote early identification of student needs and alignment with effective supports” (Freeman et al., 2018, p. 102). This study’s findings advance the efforts of educational institutions to align school and community-based intervening services for students, potentially before externalizing behaviors reach an urgent level of reactionary response connected to adulthood criminal behavior and mental illness.

### **Limitations of Study**

This study had several limitations. The population data used for this correlational study came specifically from fourth and fifth grade students in a single urban school district in the upper Midwest. Therefore, the findings are not generalizable to all grade levels nor are they generalizable to all geographical locations.

A significant limitation is related to the COVID-19 pandemic that began in 2020. The primary data collected and analyzed for this study comes from the 2020-2021 school year when the study population’s school district spent the first semester of school in a hybrid-education model. Students who attended class in person did so on an every-other-day basis with half of their classmates, and the other half of the class attended on the opposite days. On days students were not in the school building, synchronous and asynchronous learning activities were assigned and completed on their personal learning electronic devices. In the second semester of the school year, full classes of students were allowed to resume while continued adherence to The Centers for Disease Control’s mitigation strategies was expected, which included masking, hand washing, social distancing, and contact tracing illness and exposure to positive cases.

While the 2020-2021 school year was unique in how students attended school, it should also be noted that the data used in this study were affected by the COVID-19 pandemic. There was a decline in the number of office discipline referrals reported across the district. This may be

due to the hybrid model allowing only half of the students to be present for the first semester. There was also an option for students to attend school through a completely virtual model, thus removing more students from the walls of the school. Federal provisions allowed schools to provide breakfast and lunch to all students free of charge during the school year. While the district continued to encourage families to complete the required documentation to indicate free and/or reduced lunch status, it can be assumed that the lunch status numbers were not accurate.

Trends in school-collected data for the district mirrored those across the country. The trends, as they related to this study, included increased rates of absenteeism and a decline in academic achievement (U.S. Department of Education Office Of Civil Rights [OCR], 2021). At the same time, communities across the nation reported greater instability in housing, food, and parental employment and increased drug and alcohol use, domestic violence, and child maltreatment (Kovler et al., 2021; Piquero et al., 2021; Taylor et al., 2021). It can be inferred that shifts like these in a community would influence the school-based data used in this study.

A third limitation is related to the novelty of mental health screening in school. The school district in this study started screening internalizing and externalizing behaviors in the fall of the 2020-2021 school year as part of the district's return to an in-person learning plan following school closure due to the COVID-19 pandemic. Data collected from the spring 2021 screening reflected the second time teachers completed the screening process, and schools and staff were still developing an understanding of the role the screening data played in monitoring and informing student support. While teachers were provided asynchronous training to complete before the screening, the potential exists that some teachers may have felt as though the screening process was one more request being asked of already exhausted educators during the pandemic. Therefore, screening results may have been impacted by personal emotions.

The collected SRSS-IE universal screening data are the classroom teacher's perception and observation of the student's behavior as it relates to internalizing and externalizing and presents another limitation to the study. Perceptions of others are often influenced by personal experiences, beliefs, and biases. Therefore, the scoring process is subject to the teacher's recent interactions with each of their students and families, as well as the teacher's beliefs and biases as they relate to behaviors and expectations.

This leads to another limitation of the study related to the scoring of the SRSS-IE. The universal screening data used in the study come from the spring scoring period. As previously described, the teacher and student are required to know each other through the classroom assignment for about four weeks before completing the screening. In some cases, teachers and students may have just met this threshold, still making the relationship one that was fairly new. In other cases, depending on the relationship the teacher had with the student before they were assigned to the classroom or the relationship the teacher had with the family or siblings of the student, the results of the SRSS-IE may have been influenced.

A final limitation to report for this study relates to academic achievement. This risk factor was divided into the two individual variables of reading performance and math performance. The SRSS-IE asks the teacher to rate students' frequencies (i.e., never, occasionally, sometimes, frequently) regarding "low academic achievement" as part of the externalizing behaviors. By including the variables of reading and math performance on the risk factors when they were assessed also by the SRSS-IE as the mental health measure, the relationships among variables and predictive value may have been influenced.

### **Recommendations for Future Research**

It must be acknowledged that this study used two grade levels at a single school district with specific characteristics that make it unique. In addition to the single location and two grade levels, it must be recognized that the study data came from the first full school year following the COVID-19 pandemic when schools were continuing to create, navigate, and respond to pandemic-related mandates and effects, presenting a wide range of new and unique school experiences. As a result, the findings from this study are not transferable to other student age groups or geographical settings. Therefore, the first recommendation is to replicate all or portions of the study within additional public-school districts and at alternative levels of schooling to see how the results would differ. It will also be important to replicate the study over time when the adjustments from the pandemic become normalized or are reduced.

The predictive variable data used in this study are often interconnected and seen as symptoms of another problem. Secondary stressors, as these data are often referenced, are triggered by a primary stressor (Boynton-Jarrett et al., 2013). For example, a child who is regularly absent from school, may not be attending because the single parent she lives with is experiencing personal challenges of their own (e.g., substance abuse, depression, poor parenting skills, lack of childcare for younger children), making school absences a secondary stressor to a primary problematic situation. Another recommendation would be to replicate the study using predictive variables that might be seen as primary stressors (e.g., single-parent home, incarcerated parent, health insurance, number of people living in the home, parental health).

A third recommendation is to repeat this study using an alternative behavior screener. This study relies on the use of the Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE), which is an adapted measure of the original measure Student Risk Screening Scale

(SRSS) focused on externalizing behaviors (Lane et al., 2012). Perhaps the use of a behavior screener that also includes space for caregiver and student voice would provide more compelling findings of how the risk factors may aid in the early identification of behavior difficulties, specifically related to internalizing behavior concerns.

As it relates to the measurement of mental health, a recommendation can be made to repeat the study using the SRSS-IE without the “low academic achievement” score among the externalizing behaviors. Incorporating reading performance and math performance only among the risk factors may demonstrate different strengths of relationships and predictive values of the SRSS-IE. Therefore, using reading performance or math performance in isolation may bring clarity to a student’s overall struggle or success with externalizing or internalizing behaviors.

Finally, this study proposes a model that considers risk factors as a means of predicting a need for intervention related to mental health conditions. The purpose was to find a method to proactively engage in the early identification of students who may be at risk for mental health difficulties in the future. Whether providing such intervening services to students actually results in improved risk factor levels should be evaluated.

## **Conclusion**

The goal of this study was to utilize school-collected data that represent potential risk factors in future mental health conditions to develop an early warning system that would allow school professionals to ongoingly monitor the potential need for intervening services. It utilized vast research to identify secondary symptoms of mental health conditions that may present themselves in educational data. The study found that absenteeism, socioeconomic status, office discipline referrals, and academic performance, confounded by gender and ethnicity, moderately predict externalizing behavior problems. The study further established that while the risk factors

were correlated to internalizing behaviors, the relationships were much weaker, although internalizing behavior risk levels were still predicted with 60-65% accuracy through these two prediction models for late elementary-aged students.

Previous life-course research has strongly established the relationship between childhood problems behaviors and negative outcomes later in life (Achenbach et al., 1995; Boynton-Jarrett et al., 2013; Essex et al., 2009; Sellers et al., 2019; Stansfeld et al., 2016; Stinson et al., 2016). Additionally, providing early intervention to students who are at risk of mental health conditions is critical to preventing adverse consequences (Ballard et al., 2013; Freeman et al., 2018; Göbel et al., 2016; Levitt et al., 2007; Ligier et al., 2020; Vella et al., 2018). The present findings add to this literature by showing that internalizing and externalizing behavior tendencies can be predicted for fourth and fifth grade students using data commonly collected by schools which represent heightened risk within a child's biological make-up or personal environment.

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Appendix A: Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE)

DATE:			Student Risk Screening Scale - Internalizing and Externalizing (SRSS-IE) 2.0 ELEMENTARY USE 2020-2021													Items added in 2020-2021 in response to COVID-19			
TEACHER NAME:																Definition of Terms: <b>In-person:</b> Student receives all instruction in-person. <b>Hybrid:</b> Student receives some instruction in-person and some remotely (e.g., school M/TH and receives remote learning T/W/F). <b>Remote:</b> Student receives all instruction remotely.			
0 = Never 1 = Occasionally 2 = Sometimes 3 = Frequently Use the above scale to rate each item for each student.			Steal	Lie, Cheat, Sneak	Behavior Problem	Peer Rejection	Low Academic Achievement	Negative Attitude	Aggressive Behavior	Emotionally Flat	Shy; Withdrawn	Sad; Depressed	Anxious	Lonely	SRSS TOTAL	SRSS-IE TOTAL	SRSS-IE TOTAL	What is the primary way you served this student during the screening period?	Was the student a regular attendee during the screening period?
Student Name	Student ID	Count																	
Example: Smith, Sally	11111	0	0	0	3	1	3	3	3	2	2	2	3	0	13	9	22	In-person	Yes
Example: Lane, Scarlett	112341	0	0	0	1	0	0	1	0	0	1	0	1	2	2	4	Hybrid	No	
Example: Lane, Nathan	112345	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	Remote	Yes	
		3												0	0	0			
		4												0	0	0			
		5												0	0	0			
		6												0	0	0			
		7												0	0	0			

**Appendix B: Overall Proficiency Index (OPI)**

**Overall Proficiency Index (OPI)**

**Purpose:** The Overall Proficiency Index (OPI), found in the three columns after the student’s name on the Data Summit, allows teachers and administrators to view the combined results of the district-required assessments during a testing period for individual students. While one goal of the FPS Strategic Plan is for all students to make one year of growth, additional indicators of success include meeting grade-level targets. The OPO provides a uniform and integrated proficiency level across all grade levels and buildings, which may be used to monitor individual student progress toward proficiency, align support for instruction, and make resource allocation decisions.

**Calculation:** The cut scores of each risk level are divided in half, with the lowest at-risk scores receiving one point, the higher at-risk scores receiving two points, etc., with the highest scores in the exceeds expectation range receiving 7 points, where applicable.

Risk Level	at-risk		some-risk		low-risk		exceeds expectation
Index Score	1	2	3	4	5	6	7

The OPI is an average of the required assessments given during each assessment period. Assessments given that are not part of the required grade-level assessments are not included in the index score.

*Example: Grade 3; Fall*

	ORF		RC		VOC		F&P		OPI
Score & Risk Level	59		22		6		L		
Index Score	5	+	4	+	2	+	3	14/4	3.5

### Overall Proficiency Index (OPI)

**Assessments:** The following tables indicate the assessments administered at each grade level, across the district, in each testing season. See page 3 for the assessment legend.

Reading	K	1	2	3	4	5
Fall	IS LNF LWSF	LWSF PS WRF ORF F&P*	F&P* ORF	ORF VOC RC F&P*	ORF VOC SRF RC F&P* NDSA**	ORF VOC SRF RC F&P* NDSA**
Winter	IS LNF LWSF	WRF ORF	ORF MAP	ORF MAP	ORF MAP	ORF MAP
Spring	LNF LWSF PS F&P	WRF ORF F&P	ORF F&P	ORF VOC RC F&P	ORF VOC SRF RC F&P	ORF VOC SRF RC F&P

\* Previous Spring score is used when Fall score is not available

\*\* Previous Spring results

Math	K	1	2	3	4	5
Fall	FNWS NID BNWS	AS	ST	MCF NCF-T CA	MCF NCF-T CA NDSA*	MCF NCF-T CA NDSA*
Winter			MAP	MAP	MAP	MAP
Spring	FNWS NID BNWS	AS	ST	MCF NCF-T CA	MCF NCF-T CA	MCF NCF-T CA

\* Previous Spring results

## Overall Proficiency Index (OPI)

### Assessment Legend:

#### Reading:

- IS - aimswebPlus Initial Sound Fluency
- LNF - aimswebPlus Letter Naming Fluency
- LWSF - aimswebPlus Letter Word Sound Fluency
- PS - aimswebPlus Phoneme Segmentation Fluency
- WRF - aimswebPlus Word Reading Fluency
- ORF - aimswebPlus Oral Reading Fluency
- VOC - aimswebPlus Vocabulary
- RC - aimswebPlus Reading Comprehension
- SRF - aimswebPlus Silent Reading Fluency
- F&P - Fountas and Pinnell Benchmark Assessment System
- MAP - NWEA Measures of Academic Progress (Survey with Goals)
- NDSA - North Dakota State Assessment

#### Math

- FNWS - Add+VantageMR (AVMR) Forward Number Word Sequence
- NID - Add+VantageMR (AVMR) Numeral ID
- BNWS - Add+VantageMR (AVMR) Backward Number Word Sequence
- AS - Add+VantageMR (AVMR) Addition/Subtraction
- ST - Add+VantageMR (AVMR) Structuring
- MCF - aimswebPlus Mental Computation Fluency
- NCF-T - aimswebPlus Number Comparison Fluency - Triads
- CA - aimswebPlus Concepts and Applications
- MAP - NWEA Measures of Academic Progress (Survey with Goals)
- NDSA - North Dakota State Assessment

**Appendix C: Administrative Policy 6310 - Student Behavior, Discipline, and Reporting****Fargo Public Schools****AP 6310****Student Behavior, Discipline, and Reporting****Purpose**

The purpose of this policy is to provide a consistent process for student behavior, discipline and reporting in the Fargo Public Schools and assist school teams in providing behavioral supports for all students.

**Student Behavior & Discipline Statement**

The District shall strive to involve families, students, and staff in the decisions affecting students' behavior and discipline.

**Behavior Standards**

Students will be expected to behave themselves in a manner fitting their age level and maturity and in a manner that will not impede the orderly conduct of district schools. Students will be expected to respect the rights of others on district property, including, but not limited to, district-owned/leased/chartered vehicles, and at school-sponsored events. Off-campus student behaviors that have a substantial disruptive effect on district operations and/or the educational environment will be addressed by school personnel.

**Disciplinary Standards**

Consequences for misbehavior will be developmentally appropriate and based on each incident.

**Disciplinary Standards for Special Education Students**

District employees are required to comply with the Individuals with Disabilities Education Act, Section 504 and the Americans with Disabilities Act when responding to violations of student behavior standards by special education students.

**Prohibited Disciplinary Actions**

The use of corporal punishment, defined as the willful infliction of physical pain on a student, is not allowed in the Fargo Public School District. Per North Dakota Century Code 15.1-19-02, corporal punishment does not prohibit action taken by an employee for self-defense, protection of persons or property, obtaining possession of a weapon or other dangerous object, to quell a verbal disturbance, for the preservation of order, or pain or discomfort caused by athletic competition or recreational activities voluntarily engaged in by a student. Complaints alleging that a district employee inflicted corporal punishment will be dealt with in accordance with administrative policy (AP 4060/5060/6060/6250).

**Disciplinary Authority**

School personnel, including student teachers, shall be granted disciplinary authority by the building principal or Superintendent based on the job description of the employee. Personnel granted such authority shall be required to comply with this policy and any limitations it establishes.

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Any district employee who acts outside the job description of the employee may be subject to disciplinary action, including but not limited to, discharge from/termination of employment in accordance with the law and/or the negotiated contract.

**Student Behavior Standards & Disciplinary Procedures**

Student misbehavior shall be classified as minor, major, or expellable violations (see AP 6320 - Suspension and Expulsion) of behavior standards.

When determining the level of a behavior violation, a teacher, building administrator, or another school official with disciplinary authority shall take into account the totality of circumstances associated with misbehavior, such as, but not limited to:

- Prior interventions that have been put in place to address the behavior(s);
- The degree to which the misbehavior disrupted the educational environment;
- The degree to which the misbehavior infringed on the rights of others;
- The frequency of the incidents of prior misbehavior.
- The proximity in time of the incidents of prior misbehavior.

When a school official is unsure of how to appropriately classify a student behavior violation, s/he shall consult with a building administrator, the Associate Superintendent, or Superintendent before responding to the misbehavior. Neither this requirement nor the disciplinary procedure below shall supersede district policies and procedures containing emergency response and safety measures.

**Student Behavior Violations**

Below are descriptors and examples of minor behavior violations and major behavior violations.

*Minor Behavior Violations May Include:*

- Behaviors that are disrespectful, irresponsible, and unsafe.
- Behavior that is disruptive to the learning environment of the student or others.
- Refusal to comply with reasonable requests.
- Behaviors managed with a brief intervention by an adult present in that setting.

Minor violations may include, but are not limited to: inappropriate language, disruption, roughhousing, cheating, technology violation, physical aggression, teasing, work refusal, disrespect towards the property, dishonesty, dress code violation, disrespectful tone, attitude, or body language, running around the room, elopement, etc.

*Major Behavior Violations May Include:*

- Behaviors that involve safety issues.
- Behaviors targeting others.
- Behaviors that include physical injury.
- Behaviors that involve the destruction of school property.
- Behaviors that involve alcohol, tobacco, or drugs.

Major behavior violations may include, but are not limited to: inappropriate social media impacting the school day, terroristic threats, theft, vandalism of school or personal property,



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bullying/cyberbullying, possession of stolen property, extortion, discrimination/harassment, possession of weapon, threats/intimidation/hazing, fighting/physical assault, sexting, any violation of state or federal law, dress code violations that support hate, gang, or drug affiliations, etc.

**Investigation & Disciplinary Procedures***Minor Behavior Violations*

Minor behavior violations may be reported to the building administrator by submitting the Student Behavior Reporting Form at the elementary and middle levels or as a PowerSchool log entry at the high school. Minor behavior violations shall be handled by the student's teacher or by a school official with disciplinary authority when the student is not under the supervision of a teacher. If the teacher/school official did not witness the misbehavior, s/he will investigate to determine if the student was in violation of behavior standards. In addition, teachers/school officials with disciplinary authority are authorized to respond to violations by invoking one or more of the following options, such as, but not limited to:

1. Implement responses that maintain the continuity of the student's instruction or are least disruptive.
2. Review and consider the student's individual plan (IEP, BIP, ILP, MTSS or 504) prior to implementing responses.
3. Communicate with parents/guardians about behaviors and responses.

**Possible Responses**

*Teachers/school officials with disciplinary authority are authorized to respond to violations using one or more of the following options, but not limited to the printed options.*

**Responding to Students:**

- Remind, Redirect, Reteach:
  - Classroom routines and procedures
  - Ways to ask for help or solve problems
  - Emotion management
  - Appropriate classroom language
  - Individual skills and role play
  - Self-charting behaviors
- Utilize Restorative Practices:
  - Affective statements and questions
  - Circles
    - Community Building
    - Problem-Solving
    - Conflict Resolution
    - Restorative Conferencing
- Community service (as restitution)
- Teacher-directed classroom detention

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**Staff Follow-up:**

- Review classroom/non-classroom behavior management plan including social skills instruction and reinforcement
- Seat change, assigned seating
- Evaluate homework/assignment expectations and completion
- Consult with colleagues or building specialists
- Request coaching or input from colleagues, administrator, Student Performance Strategist, Positive Behavior Interventionist, Board Certified Behavior Analyst, etc.
- Review fidelity of school-wide systems, structures and supports
- Initiate a team meeting (e.g. MTSS, IEP) to discuss the implementation of an intervention plan including, a goal, instruction, and monitoring
- Refer targeted student and aggressor in bullying/harassment incidents to administrator/counselor for individual skills coaching.

***Major Behavior Violations***

Major violations must be reported to the building principal by submitting the Student Behavior Reporting Form at the elementary and middle school or as a PowerSchool log entry at the high school. The principal will conduct further investigation and report findings to the parent(s) and classroom teacher or appropriate support staff. This report may be placed in the student's educational record at the principal's discretion in accordance with applicable policy (AP 6910). Staff with disciplinary authority are authorized to respond to violations by invoking one or more of the following options, such as, but not limited to:

1. Implement responses that maintain the continuity of the student's instruction or are least disruptive.
2. Review and consider the student's individual plan (IEP, BIP, ILP, MTSS or 504) prior to implementing responses.
3. Communicate with parents/guardians about behaviors and responses.
4. Communicate with the classroom teacher or appropriate support staff regarding the outcome of the behavior referral.

**Possible Responses**

*Teachers/school officials with disciplinary authority are authorized to respond to violations by using one or more of the following options but not limited to the printed options.*

**Responding to Students:**

- Reteach Expected Behaviors:
  - Individual or small group skills instruction
  - Lessons in anger management, conflict resolution, etc.
- Implement Restorative Practices:
  - Restorative Conferencing and Restitution:
    - Neutral party mediation
    - Restorative reentry plan
    - Family/group conference



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**Staff Follow-up:**

- Consultation with related experts (e.g. security, counseling, SWFF, SPED)
- Initiate a team meeting (e.g. MTSS, IEP) to discuss the implementation/review of intervention
- Referral to an outside agency or the Regional Behavior Review Board

**Administrative Actions:**

- School detention
- Withdraw student privileges
- Contact and consultation with the SRO
- In-school removal from instruction (in-school suspension) (AP 6320)
- Out-of-school suspension, not to exceed 10 days (AP 6320)
- Referral for alcohol or drug incidents (AP 4750)
- Alternative placement within the school setting
- Exploration of alternative placement outside of the school setting

The building principal may respond to student behavior violations using any of the measures listed above or may recommend more severe penalties, which may include expulsion, in accordance with district policy (AP 6320).

**AP 6312 Juvenile Referral of a Student with Disabilities**

**Legal Reference:**

Americans With Disabilities Act of 1990, Pub. L. No. 101-336, 104 Stat. 328 (1990)

IDEA/B 300.530 Authority of School Personnel

NDCC 15.1-09-33

8/8/1967  
 Revised 1/15/2003  
 Revised 12/15/2009  
 Revised 1/11/2013  
 Revised 7/2015  
 Revised 8/2017  
 Revised 1/2020

**Appendix D: IRB Exempt from Review**

**Institutional Review Board**



DATE: September 10, 2020

TO: Ximena Suarez-Sousa, Principal Investigator  
Jen Sahr, Co-Investigator

FROM: Lisa Karch, Chair  
Minnesota State University Moorhead IRB

A handwritten signature in black ink that reads "Lisa J. Karch".

**ACTION: DETERMINATION OF EXEMPT STATUS**

PROJECT TITLE: [1654846-1] Non-Academic Factors Impacting the Mental Health of Elementary-Aged Students

SUBMISSION TYPE: New Project

DECISION DATE: September 10, 2020

Thank you for your submission of New Project materials for this project. The Minnesota State University Moorhead IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations under 45 CFR 46.104.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the [Minnesota State University Moorhead IRB](#). Please include your project title and reference number in all correspondence with this committee.

This letter has been issued in accordance with all applicable regulations, and a copy is retained within Minnesota State University Moorhead's records.

**Appendix E: Permission to Conduct Research Study**

Fargo Public Schools

AP 4800

AF 4800

**RESEARCH STUDY REQUEST**

I hereby request permission to conduct a research study in the Fargo Public School District during the period from August 2020 to May 2022.

**TOPIC:** *Aligning Students' Nonacademic Factors to the Student Risk Screen Scale Results for Early Identification of Mental Health Needs*

If this request is granted, I agree to abide by Administrative Policy 4800: refer to the FPS web site at [www.fargo.k12.nd.us](http://www.fargo.k12.nd.us)

Signature of Researcher 

Institution of Higher Education: Moorhead State University- Moorhead

Signature of Graduate Advisor Ximena Suarez-Sousa

Date July 14, 2020

In addition to completing the Research Study Request Form, a copy of the following items are attached for review:

- 1. Abstract of the project
- 2. Questionnaire(s) to be used
- 3. Consent letter to be sent to parents

Endorsement: This request is  approved  disapproved

Building Principal:  Date: \_\_\_\_\_

Associate Superintendent: \_\_\_\_\_ Date: 8/5/2020

*Both signatures above are required prior to conducting a survey at a Fargo Public School.*